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Abstract

The crypto asset class is still in its infancy, lacking many of the complex financial instruments that define more mature asset groups. Consequently, crypto investments are subject to extreme volatility and are thus unattractive to risk-averse investors like traditional institutions and corporations. Their entrance into the crypto asset class will create an inflow of trillions of dollars, which makes for a sizable bounty for whoever can provide a vehicle to these investors. These institutions cannot withstand the 50% drops that more adventurous investors endure, nor can they predict the opportunity cost of 500% gains on adjacent tokens. To calm these waters, HAI DAMO creates on-chain ETFs that mitigate risk while providing optimal exposure to various crypto assets. ETFs are viewed ubiquitously as a signal of maturity in markets, it is the lack thereof that we are solving. By providing safer investment vehicles to less risk-tolerant players, HAI DAMO has the potential to claim a piece of the trillion dollar bounty while legitimizing cryptocurrency assets across the entire ecosystem.



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1 Introduction

Hedge Against Inflation (HAI) is the first decentralized asset management organization (DAMO), providing exposure to the most dominant and promising projects in the crypto space. We achieve this by combining revolutionary DeFi mechanisms with traditional finance paradigms. HAI DAMO will build an inclusive and sustainable ecosystem through the decentralized governance of on-chain ETFs. Decentralized asset management will prove to be a more sustainable investment strategy due to the ability of the DAMO to adapt to market changes effortlessly through voting contracts, polls, liquidity thresholds, and other methods of governance. We believe an ETF is managed more optimally by its community of vested individuals rather than by a traditional fund manager. HAI DAMO is committed to building a trustless ecosystem to create and manage the most optimal decentralized investment vehicles for long-term investors.

2 Overview of the DAMO Protocol

2.1 DAMO Protocol and Token

DAMO stands for DAO-operated Asset Management Organization. More plainly, a DAO that specifically governs the management of assets. In this case specifically, it is the management of the composition of on-chain ETFs.

Governance will be achieved through the voting powers granted by ownership of the \$DAMO token. Collectively, the DAMO will control the parameters for portfolio allocations, holdings, stability fees, and liquidation ratios.

HAI DAMO will be a fully operational DAO once we can prove through repetition that our governing smart contracts are robust enough to handle the responsibilities of the platform and an effective method for incorporating off-chain activities has been established.



2.2 HAI ETF Tokens

The \$HAI ETF tokens are collateral-backed crypto assets whose value represents a composition of other tokens. It is synonymous to a share of \$QQQ or \$SPY in the fiat market, although the method of capitalization is significantly different.

After a user deposits collateral in a vault, they can withdraw up to 75% of their collateral's worth in \$HAI tokens. This method ensures that the value of each \$HAI token is overcollateralized and thus ensures its base price at a minimum. After \$HAI has been generated, it can be used the same as any other token; held for gains, provided as liquidity, or traded on an exchange.

Identical to other collateral-backed tokens, each \$HAI ETF token is backed by an excessive amount of collateral which guarantees that the total value of collateral is always higher than the total amount of \$HAI debt, thus ensuring the integrity of the price of \$HAI.

2.3 Key Actors and Their Roles

The DAMO Protocol relies on several different user types for the platform to function efficiently. Therefore, it is our responsibility to adequately incentivize each user type to participate.

While HAI DAMO aims to target less risk-tolerant investors, such as institutions, we acknowledge that collateralized vaults are an advanced process and therefore it is not realistic to expect institutions to use them. To absolve this, we have defined user types and roles that will be sufficiently incentivized to facilitate a symbiotic system of risks and rewards.



2.3.1 Yield Farmers to Generate Liquidity

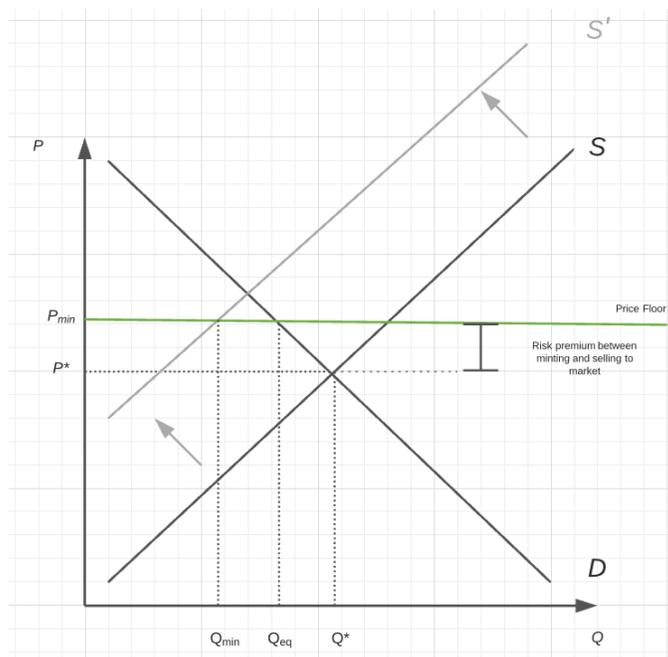
The first user type, at the mouth of the protocol so to speak, is the humble *Yield Farmer*. This simple farmer is seeking higher-risk opportunities to maximize their gains. For their risk, they will be handsomely rewarded. There are two main incentives for the Yield Farmer: First, farmers will be rewarded with \$DAMO for generating \$HAI. This reward will be temporary as it is a liquidity mining event aimed at distributing governance power to more active users as well as seeding secondary markets with \$HAI. The second type of reward comes from the natural arbitrage opportunity that arises from the risk disparity between minting \$HAI and buying it on the open market, as \$HAI on the open market will have an additional premium due to the extra risk incurred by the yield farmer to generate it in the first place. The function of this risk premium is analogous to the *MakerDAO DAI Savings Rate*, which MakerDAO manipulates in order to stabilize the price of DAI (increase rate to raise price of DAI, decrease to lower price of DAI). In our instance, we rely on arbitrage between the minting price of \$HAI and the open market price of \$HAI to agree on a price that reflects the value of the underlying assets.

2.3.2 Institutions to Soak Up Liquidity

For the end user, the \$HAI token is primarily a store of value. Its value fluctuates in accordance with the allocations of the assets it represents. Therefore, we can rely on the end users to be long term holders for the purpose of gaining long term exposure through a safer vehicle. We can predict that yield farmers as a whole will not want to hold \$HAI, and will either sell it to the market or provide it as liquidity, therefore the generation of \$HAI will be congruent to the demand for \$HAI on secondary markets. The additional generation of \$HAI will be incentivized naturally by the arbitrage opportunity between minting it (while incurring stability fees and liquidation risk) and buying it on the open market. Because each token is collateralized, a price floor exists at the real price of all underlying assets in respect to their allocations. Therefore a demand of 0 will only cause the price to reach its floor, whereas a demand that is greater than 0 will be balanced by



the arbitrage opportunity to the yield farmer and thus will incentivize further \$HAI generation.



Graphical representation of 1) the effect of a price floor when supply changes.
2) The risk premium between minting and buying on the market

3 Decentralized Governance

It is the nature of the ETF to optimize the relationship between volatility and exposure. In the fiat world, this is accomplished in a centralized manner by portfolio managers. We believe this traditional method to be inadequate when understood in the context of a *market*. A market price is purely a reflection of the aggregate information of all market participants, therefore we believe our ETFs should be ruled not by algorithms and quants, but rather by a collective consensus from all stakeholders.

3.1 DAMO Token Role in Governance

The \$DAMO token is a representation of power in the DAMO Protocol. Owning \$DAMO entitles a user to participation in our ecosystem. This participation includes creating and voting on proposals, as well as being eligible for airdrops from our partners.



3.2 Proposals and Voting

The parameters subject to change by a proposal are as follows: allocation percentage, addition/removal of an asset, liquidation ratio, and stability fees. Proposals can be submitted on-chain by users who hold at least 0.1% of the \$DAMO supply. For users who do not have enough \$DAMO, proposals can be vetted on our Subreddit and our community forums. If an off-chain proposal gains enough traction, the DAMO operators will submit a formal on-chain proposal.

Users who hold even a single \$DAMO are eligible to vote on proposals. One \$DAMO equals one vote, and it will be locked for the duration of the vote at which point it will be returned to the user. Proposals that pass with less than a 68% approval rate will be subject to a 3 day waiting period which will allow time for more discussion. This is a safety net to further analyze proposals that could be polarizing or a threat to the integrity of the protocol. Otherwise, if a proposal passes with greater than 68% approval, the changes will take effect within 24 hours.

4 Token Economics

Decentralized governance requires robust incentives in order to function effectively. More plainly, good actors need to be recognized and rewarded. The DAMO Protocol is designed to facilitate this behavior through liquidity mining events and representation in DAMO Governance.

4.1 DAMO Token

\$DAMO will be released through liquidity mining events and airdrops over a 12 month period. \$DAMO has a soft cap, meaning that there will be a static number of tokens released, but additional tokens can be minted and burned in the event of a surplus or deficit after a liquidation. The soft cap of 32 million tokens will always be the target supply that the protocol strives to maintain. This mechanism is nearly identical to that



of MakerDAO. We believe this mechanism is extremely well balanced and proven, so therefore we are adopting it for our protocol as well.

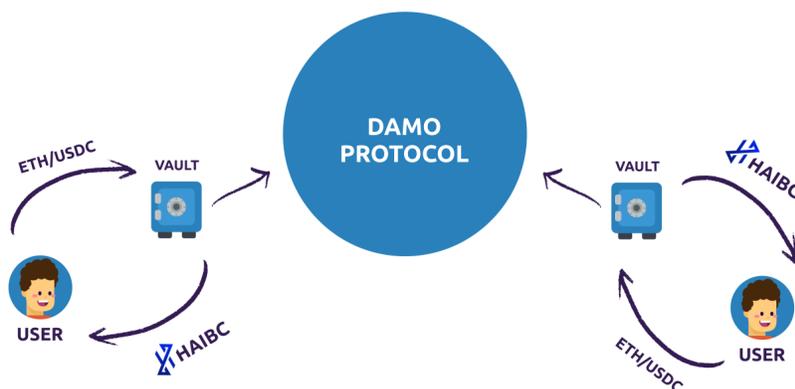
5 Collateralization

5.1 Collateralized Vaults

We make no claims to be the inventors of collateralized vaults, which are the invention of *MakerDAO*. To summarize the function of vaults in regards to MakerDAO, vaults are non-custodial smart contracts that lock-up assets to form collateral. In exchange for this lockup, vault creators can withdraw an amount of \$HAI tokens that are proportional to their *collateral-to-debt* ratio. These tokens are backed by the underlying collateral in the vault, thus giving real value to the \$HAI tokens. For the sake of time, we assume the reader is familiar with the MakerDAO protocol and the function of their vaults (<https://makerdao.com/en/whitepaper/#maker-vaults>). Essentially, instead of generating \$DAI, we generate \$HAI.

5.2 Portfolio Mechanics

It might occur to the reader at this point, “how can all assets in an ETF be collateralized if I only provide ETH?” A valid inquiry indeed, to which we have devised a unique and efficient solution. The quantity of \$HAI generated in proportion to the collateral provided is determined by a smart contract which monitors the prices of all the underlying assets. Because HAI DAMO does not retain custody of any user’s assets, and because of the exorbitant gas fees that the protocol would incur from trading one asset into the dozen assets in our basket, we will simulate the value of the portfolio and support the price by overcollateralizing the minted \$HAI. The overcollateralization allows for price fluctuations of underlying assets to occur without harming the integrity of the \$HAI tokens.



5.3 Liquidation

To ensure \$HAI is always backed by a sufficient amount of collateral, any vault deemed too risky will be eligible for liquidation. Risky vaults, or vaults whose collateral-to-debt ratio is over the liquidation ratio, will be available for liquidation by community members. Users will be able to liquidate vaults themselves, using \$DAMO, for a small discount (liquidation premium). So technically, vaults can fall below a 150% collateral-to-debt ratio, at which point the discount for purchasing the user's vault will increase proportionately to the liability of the insolvent assets. This method will incentivize speculators to purchase delinquent vaults because they will be priced below market rate. Upon liquidation, the DAMO Protocol will penalize the defaulted user by taking 10% of remaining holdings and store them in the DAMO Treasury wallet. In the event that the collateral-to-debt ratio ever reaches as low as 110%, the protocol will trigger an immediate sell off of all assets in the delinquent vault in order to avoid any further damage to the integrity of \$HAI. In the event that the protocol is unable to recover the amount of funds that were minted, the protocol will mint and sell \$DAMO on the open market. The funds generated from this will immediately buy and burn \$HAI off the secondary markets, thus returning to an overcollateralized equilibrium. This intentional inflation of the governance token serves to incentivize swift action among the community when a risky vault is identified. This function is paramount to the



success of the protocol, so incentives for liquidation will be prioritized. Furthermore, any remaining assets after debt ratios become tolerable will be returned to the user in their original vault.

6 Allocation and Valuation

We employ several conventional finance functions to determine the effect of each asset on the price of the whole basket. Through these functions, we derive the Net Asset Value of our ETF tokens, as well as the levels at which rebalancing needs to occur.

6.1 Net Asset Value (NAV)

To arrive at the value of our ETF upon launch, we take a simple calculation to find the Net Asset Value (NAV).

$$NAV = \sum(Q * MP)$$

where Q is the quantity of each token and MP is the market price.

We then arrive at the allocation through

$$A = (Q * MP) / NAV$$

Note that holders of the \$DAMO token have the power to vote on changes to the A of an asset by changing the Q .

6.2 Tokenized ETFs

The following token names are the proposed ETFs that HAI DAMO will initially provide. We will begin by launching the blue chip ETF (\$HAIBC), which contains the most ubiquitous and time-tested crypto projects. We will experiment with decentrally governing the allocations of tokens within this token basket first. After this has been deemed a success, we will begin to construct the remaining ETFs in a fully decentralized



manner. Our smart contracts will allow proposals to offer a new asset along with a sub-vote to decide its allocation percentage. This voting implementation is complex compared to a standard binary option, so we anticipate testing several formats to determine which method is most effective for the community when we make the transition to a full DAO.

\$HAIBC - Blue Chip

The Blue Chip (\$HAIBC) ETF is our flagship product. We chose the most ubiquitous and fundamentally sound crypto projects to make up the initial basket of Blue Chip tokens.



Initial tokens in our Blue Chip ETF

\$HAID DeFi

ETF basket providing exposure to the DeFi space. The allocations of these assets will be governed 100% by \$DAMO holders after launch.



\$HAIN Non-Fungible Tokens

ETF basket providing exposure to the NFT space. The allocations of these assets will be governed 100% by \$DAMO holders after launch.

\$HAIG Growth

ETF basket providing exposure to tokens with the highest speculative growth . The allocations of these assets will be governed 100% by \$DAMO holders after launch.

\$HAISC Stable Coins

ETF basket providing exposure and security to stable coins. The allocations of these assets will be governed 100% by \$DAMO holders after launch.

7 Conclusion

It is evident that a lack of maturity exists in crypto asset markets. Compared to other traditional financial instruments, crypto assets are the Wild West. HAI DAMO provides structure and legitimacy to crypto assets by creating robust investment vehicles through the market power of the collective, rather than that of a centralized institution. We are committed to building a trustless ecosystem to create and manage decentralized investment vehicles for the broader market. Decentralized asset management will prove to be a more sustainable investment strategy due to the ability for the DAMO to react to market changes and market sentiment in a proverbial instant. By catering to these underrepresented entities, HAI DAMO will gain a share of the trillion dollar institutional bounty.



References

[1] MakerDAO (<https://makerdao.com/en/whitepaper/#maker-vaults>)

[2] API3. <https://api3.org/>

[3] DeFi Pulse. <https://www.indexcoop.com/dpi>

Glossary

API3

API3's Airnode protocol allows for deployment of data feeds for tokens across various blockchain networks.

Blue Chip

Also known as \$HAIBC, was given the name "Blue Chip" to complement its portfolio of fundamentally sound and widely recognized crypto assets.

Collateralized Vaults

Lockers that contain assets that act as collateral. This collateral can then be used to leverage something else, in this case it leverages \$HAI tokens.

DeFi

DeFi or Decentralized Finance refers to our on-chain ETF \$HAID. \$HAID was given the name DeFi due to its nature of decentralized finance applications.

\$DAMO / DAMO Token

The governance token for the DAMO Protocol.



DAMO

DAMO or Decentralized Asset Management Organization.

DAMO protocol

The system governing the HAI ecosystem.

Growth

Growth or \$HAIG is referred to as growth as it represents small to mid-cap crypto assets with a higher risk/reward ratio.

\$HAI

\$HAI refers to \$HAI ETF tokens that are collateral-backed crypto assets whose value represents a composition of other tokens. \$HAIBC \$HAID \$HAIN \$HAIG \$HAISC

HAI Ecosystem

The HAI Ecosystem refers to the DAMO, or decentralized asset management organization and the products of it.

Liquidity Mining

\$DAMO will be released through liquidity mining events on a regular schedule.

Liquidation

The sell-off of assets in a vault is the collateral-to-debt ratio exceeds that of the liquidation ratio.

NFT (Non-Fungible Token)

ETF basket providing exposure to the NFT space. The allocations of these assets will be governed 100% by \$DAMO holders after launch.



Off-chain voting

Off-chain voting refers to our community forum in which anyone can participate in community discussions.

On-chain voting

On-chain voting refers to the polls in which \$DAMO token holders participate in governing.

Polls

Polls are the mechanism used to propose alterations to the portfolios along with management of the DAMO protocol.

Stable Coin

Stable Coin or \$HAISC, refers to our on-chain stable coin ETF. This allows for users to gain exposure to all the top stable coin projects in the crypto space without relying on trust of a central entity or faulty protocols.