HaloDAO

Token Model
Introduction

Building Inclusive Web 3.0 Financial Infrastructure in Southeast Asia

Abstract

This paper describes an incentivisation system, embodied in a Decentralised Autonomous Organisation called HaloDAO, which is a stablecoin protocol focused on the Southeast Asian region, home to 655 million people.

We aim to create a foundational layer for the Southeast Asian digital economy by collateralising MakerDAO's Multi Collateral DAI and eventually other collateral types to mint synthetic local stablecoins, relying on the UMA Protocol for their priceless financial contracts and optimistic oracle services.

The HaloDAO team is focused on driving liquidity to mint synthetic stablecoins for Southeast Asian regions. We intend to do that with a combination of drivers which include: tapping global liquidity via liquidity rewards, gaming partnerships and creating more on and off ramps integrations with existing wallets and exchanges. With a greater supply of local stablecoins, users will be able to access the permissionless Decentralised Finance (DeFi) economy, thereby lowering the barrier to individual financial participation in a region of the world that needs it the most.

We have an intense geographical focus as we believe localisation and cultural adaptation is key in winning the mass adoption race.

Concepts

HALO

HALO is the ERC20 governance token, limited to 100,000,000 supply that enables holders to participate in governance and acts as a claim against local stablecoin earnings of the Protocol.

UBE

A synthetic ERC20 stablecoin issued according to DAI:PHP index and pegged to the Philippine Peso. UBE is one example of a regional stablecoin that is minted off of collateral types, starting with DAI. The HALO Protocol also supports the minting of other synthetic stablecoins pegged to regional currencies, such as Indonesian Rupiah (IDR).

Stablecoin Earnings Pool

The repository of Protocol earnings taken from lent out DAI collateral by liquidity providers. This earnings pool will be used to fund long term DAO operations.

HALO Rewards Pool

The repository of the HALO governance tokens reserved as a reward to DAI collateral and Automated Market Maker (AMM) liquidity providers.

On/Off Ramp

The cash in or cash out provider that allows users to exchange local synthetic stablecoins generated by HaloDAO for FIAT or vice versa. In the case of the Philippines, it would be UBE (Philippine Synthetic) being exchanged for Philippine Peso (PHP).

Liquidity Provider

The entity, individual or smart contract that either;

1. deposits DAI as collateral into the Halo Protocol to mint stablecoins (such as UBE at the DAI:PHP spot rate). This Liquidity Provider (LP) earns HALO ERC20 governance tokens
2. Or provides liquidity into an AMM pool supporting trades between other cryptocurrencies and a HaloDAO stablecoin (such as UBE)

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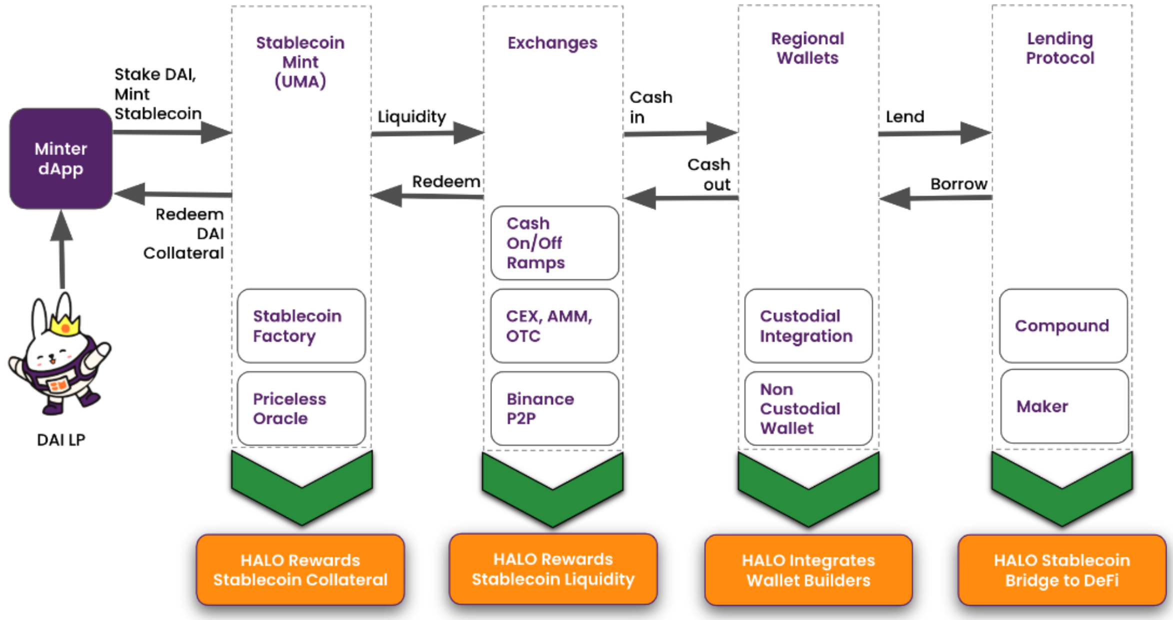
Token Model

Figure 1: HaloDAO Value Chain



Minter dApp

The Minter dApp will serve as the front end for the DAI liquidity provider to collaterise DAI in order to mint a HaloDAO synthetic stablecoin. The initial stablecoin that can be minted is UBE, a synthetic Philippine Peso, pegged to the DAI:PHP rate. The actual mechanism to mint and redeem stablecoins is described below.

Stablecoin Mint

HaloDAO relies on a core integration with UMA's DVM that provides a "priceless oracle" mechanism to mint stablecoins at a price feed relative to DAI and the regional currency (such as DAI:PHP for UBE).

Exchanges

After minting, the DAI LP who now holds the synthetic stablecoin would be incentivised with HALO rewards to provide that stablecoin liquidity into Automated Market Makers (AMM). AMMs, however, are not the only place where the team will push for listings. Centralised Exchanges (CEXs), Over the Counter (OTC) trading desks, P2P exchanges and fiat on and off ramps are all essential places where HaloDAO's synthetic stablecoins can act as a bridge into real world financial rails.

Regional Wallets

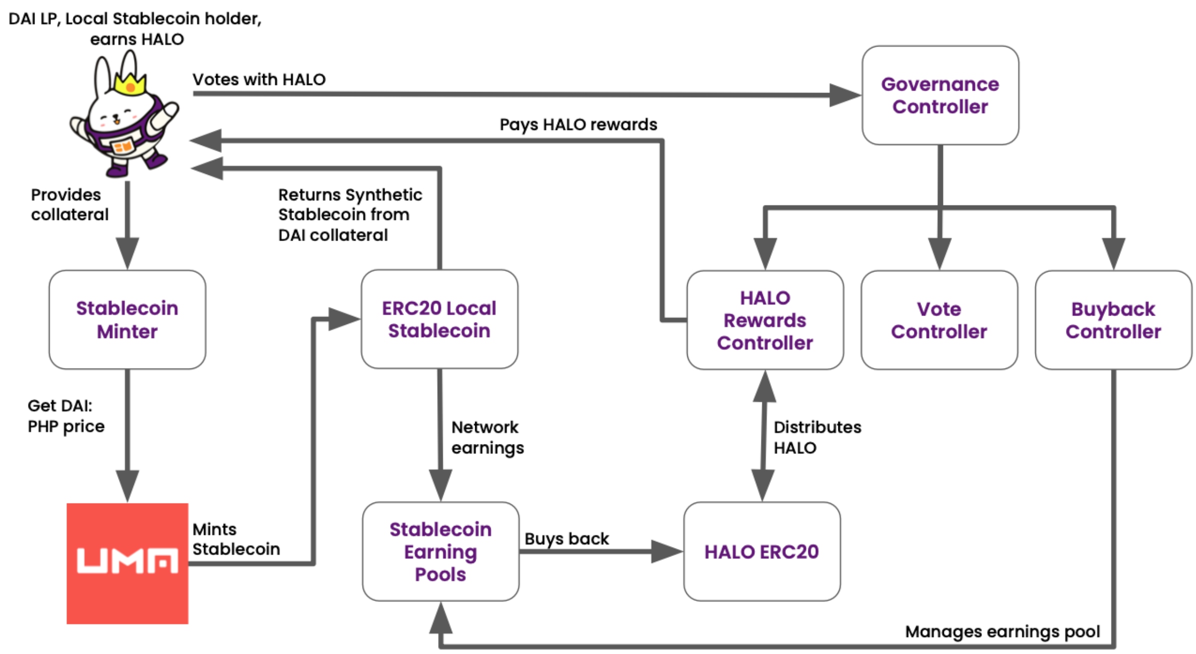
Wallet Builders are those who build, release and maintain consumer facing wallets supporting HaloDAO's stablecoins. These wallets would be either custodial or non custodial integration points between a HaloDAO stablecoin and regional on and off ramps. The first wallet builders will enable permissionless use cases around these HaloDAO stablecoins, such as cross border and domestic remittance, consumer payments and ecommerce.

Lending Protocols

It is not enough to simply mint a region specific stablecoin, provide liquidity to an AMM and get listed on exchanges. The goal of HaloDAO is to get each new stablecoin listed on lending protocols, such as Compound or Aave so that end users will be able to get a regional currency denominated interest rate on their holdings.

Technical Overview

Figure 2: HaloDAO High Level Components

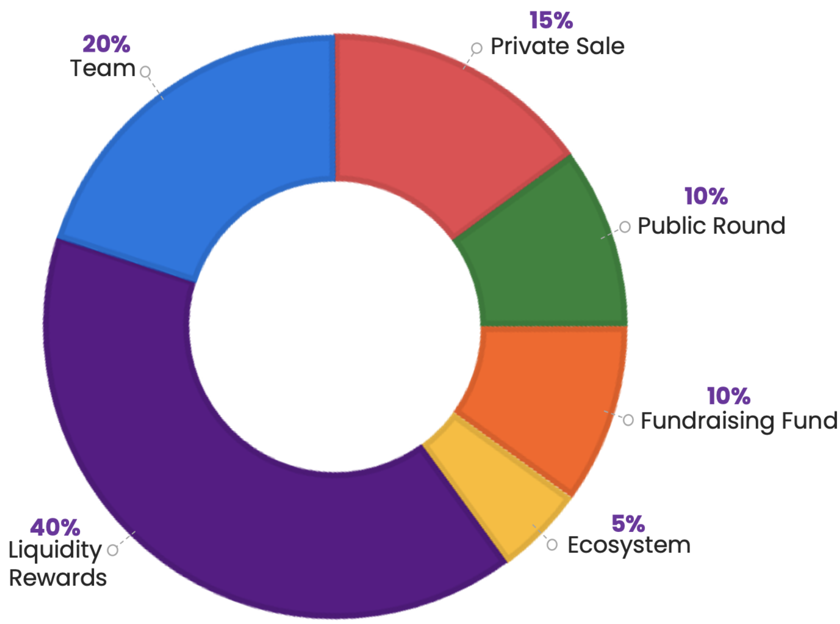


The core modules enable the:

1. Minting and redemption of region specific stablecoins
2. The earning of HALO rewards for minting, redeeming and supplying stablecoin liquidity to AMMs
3. Governance of the HaloDAO Protocol by HALO token holders who decide on;
    a. New economic and geographic regions to expand to (new collateral types and fiat currencies to mint synthetics for)
    b. Adjust the HALO burn rate (to lessen the total HALO supply over time, funded by the Stablecoin Earnings Pools)
    c. When to execute buybacks using funds from the Stablecoin Earnings Pools
    d. And many other proposal types

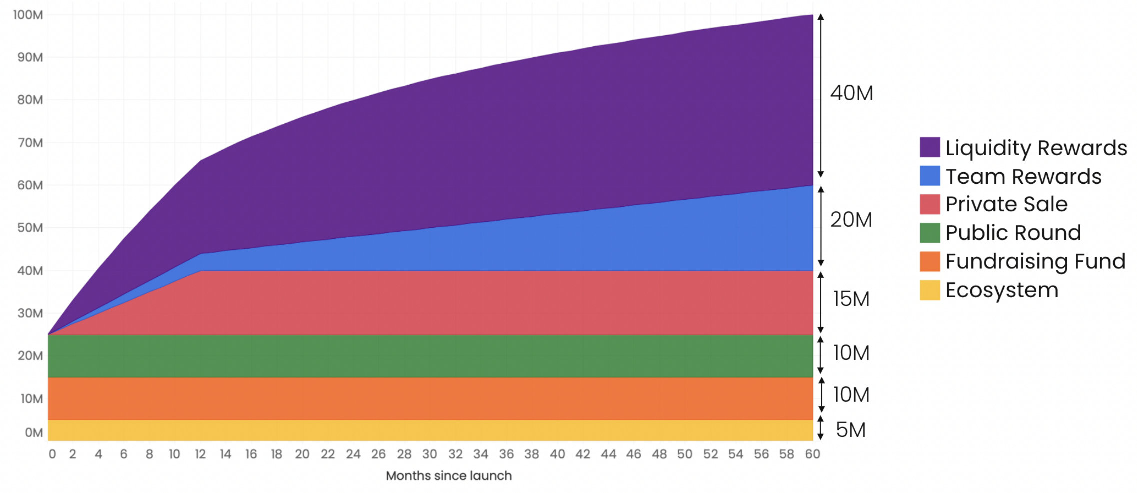
Tokenomics Overview

Figure 3: Token Distribution



The above diagram illustrates the breakdown of the 100 million supply capped HALO governance tokens. 25% of HaloDAO tokens will be sold in our Private Sale and Public Round. 5% will be kept for ecosystem support, such as grants, hackathons and other activities. 10% is reserved for future fundraising to support the continued development and adoption of the Protocol. 40%, the largest allocation, will be rewarded to incentivise liquidity providers who will create and seed markets with region specific stablecoin liquidity. 20% will be used to incentivise the team for long term participation in the project.

Figure 4: 5 Year Token Emission Schedule



Liquidity Rewards

A total of 40M HALO tokens will be rewarded to DAI liquidity providers and AMM pool liquidity providers for a target duration of 5 years. The distribution schedule will follow a decaying growth function in order to reward early adopters and then approach a zero limit towards the 60th month from launch as the HALO market cap grows. The exact proportion of HALO rewards between DAI liquidity providers and AMM liquidity providers will be determined closer to a public token launch. This regular monthly disbursement of liquidity rewards tokens may be revisited by the community every few months as the Protocol grows and may be increased or decreased to match the incentivisation alignment needs of present and future liquidity providers. For the moment, however, the calculation is pegged to a 5 year emission schedule, starting at 7.5M tokens as rewards for the first month gradually decreasing to a 0 limit at the 60th month.

Team Rewards

20 million HALO tokens are allocated to the team to incentivise good work to advance Protocol objectives. Roughly 1.73 HALO per block (325,000 HALO per month assuming consistent 14 second block times) will be airdropped to the team according to our [Dynamic Team Allocations](). This regular monthly disbursement of 325,000 team tokens may be revisited by the community every year as the Protocol grows and may be increased or decreased to match the incentivisation alignment needs of future team members. For the moment, however, the calculation is pegged to a 5 year emission schedule, along with the liquidity rewards.

Ecosystem

5 million HALO tokens will be reserved as ecosystem support for wallet builders, payment processors or any other financial institutions that want to make use of HaloDAO's regional synthetic stablecoins. HaloDAO will primarily provide any SDKs or tooling that might make it easier for these entities to onboard into the permissionless and borderless commerce inherent to Decentralised Finance (DeFi). Additionally, the Ecosystem fund could also provide grants and any other assistance to potential adopters of regional stablecoins (like those who utilise UBE in their wallets or payment infrastructure).

Investment

Last but not least, institutional money is necessary to get the initial team and product off the ground. For this reason, the team has allocated a total of 35M tokens to sell for the current private and public rounds (including a future funds reserve) to fund initial development, liquidity, launch and future development.

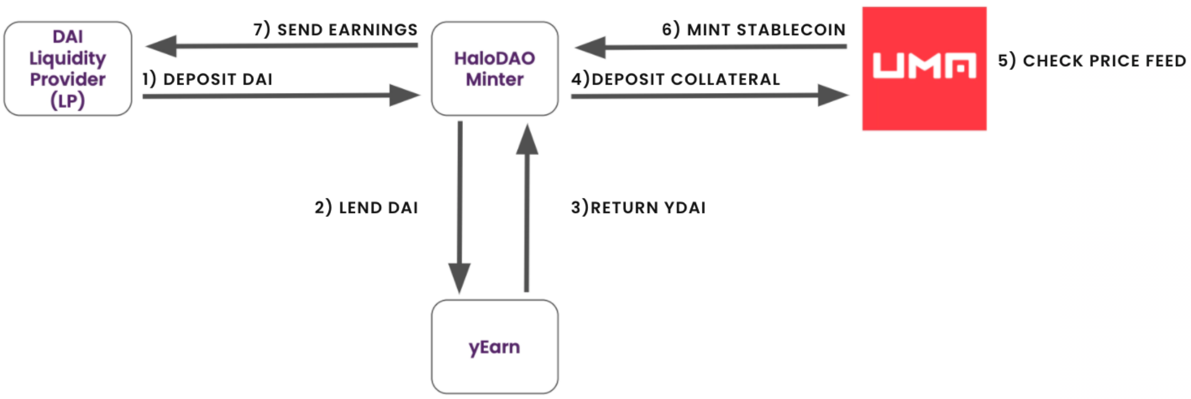
Profit Drivers

The main profit driver of the HALO network is the DAI provided by liquidity providers in order to mint a synthetic stablecoin (such as UBE). This DAI liquidity will be used to deposit into a lending protocol, which will generate revenue to be distributed to HALO token holders in active governance. One example of this is depositing DAI collateral to Compound and receiving cDAI. This cDAI can now be used as collateral to mint stablecoins (like UBE) in accordance with a price feed (such as UMA's DVM), as shown in Figure 5 below.

DAI Liquidity Provision

Figure 5 illustrates the staking of DAI as collateral to generate regional synthetic stablecoins, starting with UBE for the Philippine Peso (PHP). A minting contract will be built that accepts DAI deposits and then mints an ERC20 token according to an external price feed DAI:PHP.

Figure 5: Earnings Flow Part 1

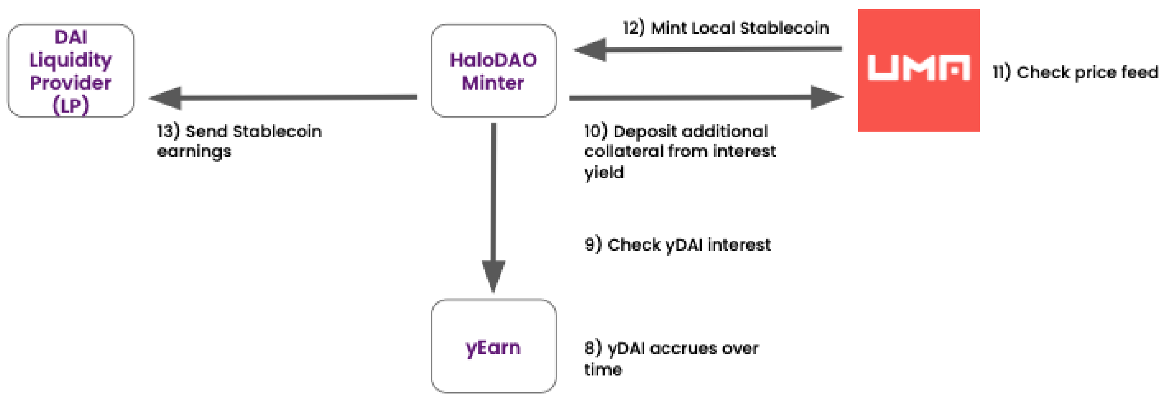


One relevant mechanic to incentivise liquidity provision when stablecoin network demand is high is to enable limited, short term liquidity mining incentives in the form of greater HALO rewards to LPs.

Liquidity Providers will earn HALO realtime at every block on the same initial capital, unless of course that capital is unstaked from the Protocol, at which point HALO rewards will cease. A liquidity providers' HALO issuance is calculated based on the equation described under the Liquidity Mining.

You may notice that Yearn Finance's yEarn is used as a lending aggregator in Figure 5, but this is just an example under consideration at the time of writing. At the very least, Compound would be the safest candidate with the least layers of complexity. However, if the goal is to generate competitive yield for HALO token holders, then yEarn as an aggregator would be the next choice. Yearn Vaults were also briefly looked at, but given that the Vaults are managed by multisig and have greater layers of complexity it is not a feasible choice as a Protocol building block at the present time.

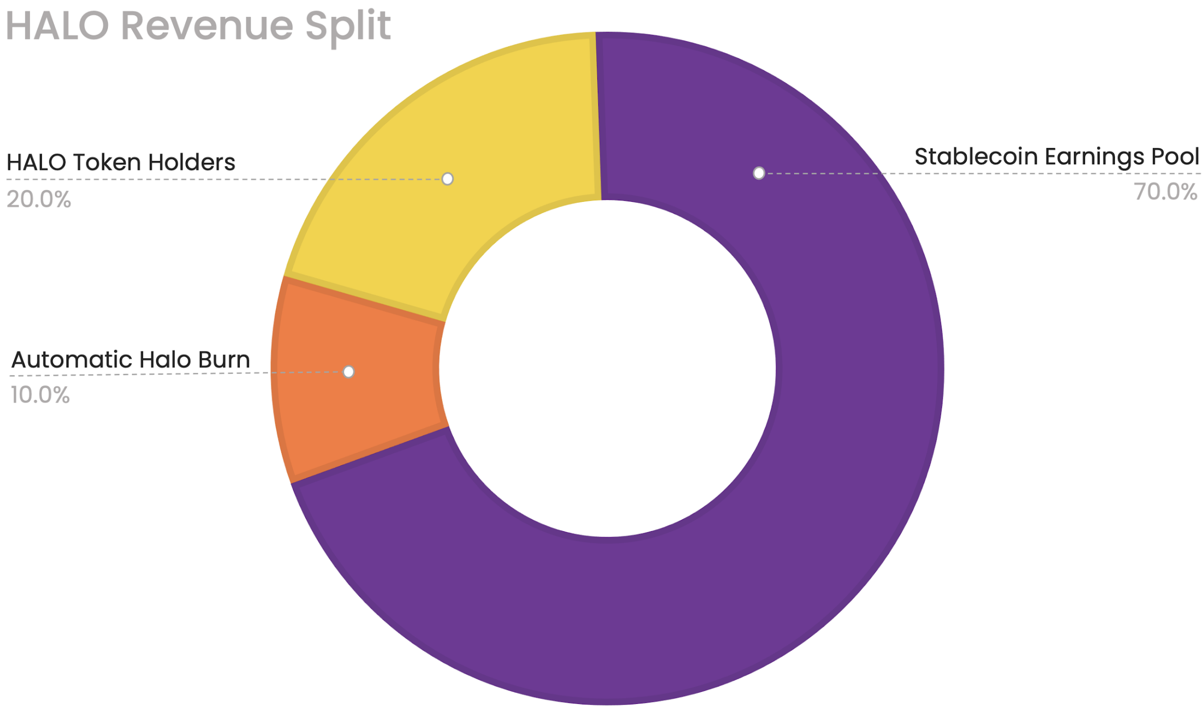
Figure 6: Earnings Flow Part 2



One interesting thing to note when using yield tokens, such as cDAI, aDAI or yDAI, as collateral to mint UBE is that this underlying collateral is constantly increasing in value. This means that after the initial DAI deposit to the HALO Minter, there may be additional minting of UBE every time interval when the price of the collateral yield token is checked. This makes a nice side effect possible, wherein by simply depositing DAI to HaloDAO, you can essentially yield farm in your regional stablecoin before it is listed on a lending protocol. Of course, you'd be splitting the yield with HaloDAO but as time goes on the goal is to 1) have HALO's token price increase due to increased utility and 2) give more and more of the collateral yield back to the DAI liquidity provider.

One additional note is that the HaloDAO Minter Contract will essentially be yield farming various governance tokens through yEarn. These governance tokens will be sold for a HaloDAO stablecoin (such as UBE) and placed in the Protocol's earnings pool, who's usage of such funds is described below.

Figure 7: HALO Earnings Pool



As seen above, the HALO Protocol revenues from lending out DAI collateral are split between an earnings pool to fund the DAO in the long term, an automatic HALO token buyback and burn from AMMs where HALO is traded and HALO token holders who will receive a regular interest payment per block. As the DAO matures and decentralises, the team aims to gradually decrease the earnings pool allocation and increase the automatic HALO burn and HALO token holder allocations.

HALO Token Holders

At the time of writing, HALO Token Holders that are actively staked and voting in the Vote Controller Contract will automatically receive 20% of all stablecoin revenues (such as UBE) every block. Take note that the stablecoin revenue payout is different from the HALO rewards given to Liquidity Providers. This revenue is taken from the mechanic described above.

Automatic HALO Token Burn

10% of all stablecoin revenue earned by the Protocol will automatically be used to buy HALO from AMMs and burn it, decreasing the total supply of HALO.

Stablecoin Earnings Pool

Allocation on the remaining 70% of Protocol revenue will be done via HALO Token Holder vote. Examples of allocations could be, but not limited to, buybacks and redistribution to the HALO Rewards Pool for Liquidity Providers, additional HALO token burns, reinvestment into the Protocol, reinvestment into additional liquidity to mint more UBE, grants to builders, etc.

HALO Liquidity Mining

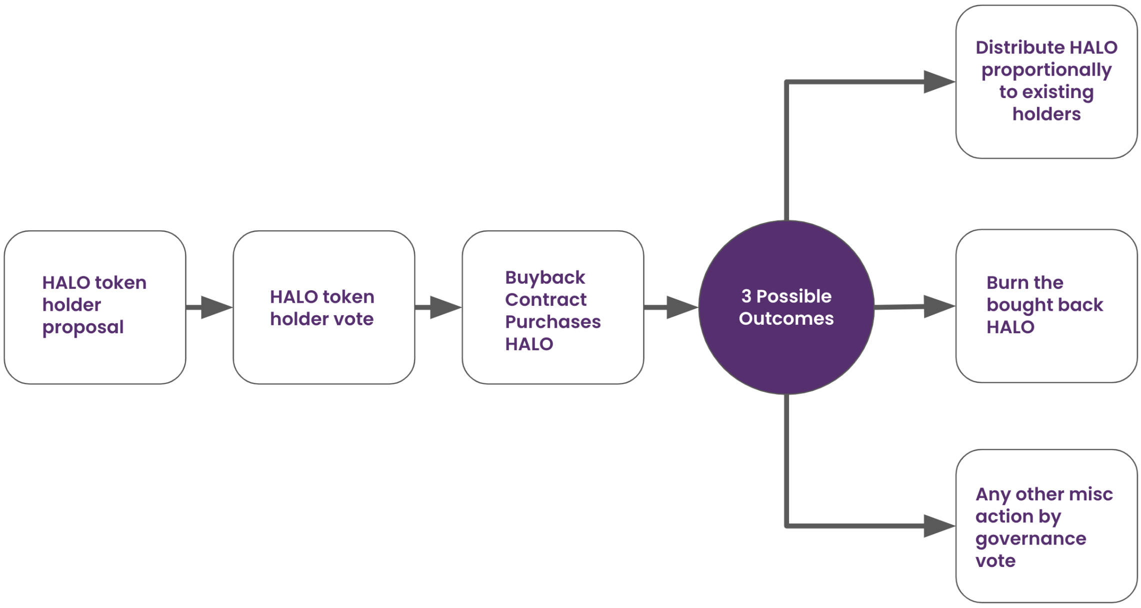
The main function of HALO is that it is a claim against stablecoins in the Earnings Pool by those who actively participate in the governance process. Effectively, as more of these synthetic stablecoins are minted and transacted within the rails enabled by the community, the value of HALO should benefit due to (a) its limited supply and (b) the increased stablecoin interest earnings per actively staked and voting HALO token. Of course, those who simply hold HALO for speculative purposes may do so, however the rewards will only be distributed to active participants. Additionally, HALO on the open market will over time be bought back and redistributed by the Halo Protocol to actively staked and voting HALO token holders upon such proposal and majority vote by HALO token holders.

At current network parameters, HALO is rewarded on every block at a target rate of roughly 7,500,000 HALO/month to Liquidity Providers.

$$HALO_{\text{reward\_per\_block}} = \frac{DAI_{staked}}{TotalDai_{staked}} * HALO_{\text{block\_reward}}$$

At current network parameters, it will take ~5 years for the HALO Rewards Pool to empty. Before that happens, however, the Foundation (or any other HALO token holder) may propose a buyback vote which will replenish the HALO Rewards Pool for Liquidity Providers. Of course, at any time HALO holders may propose a vote to enact any miscellaneous action, such as burning HALO upon buyback or to alter the minute network parameters to react to market changes.

Figure 8: HALO Buyback Mechanism



Once a HALO token holder proposes a buyback for voting in a specific epoch, all HALO token holders may begin to vote on that proposal for a period of 2 weeks. If a buyback proposal (including smaller vote parameters such as the amount of UBE to allocate from the Earnings Pool) receives majority vote, then the BuyBack Controller on chain will immediately use the available UBE balance in the Earnings Pool to buy HALO from a decentralized exchange (uniswap, kyber, others to be decided) at the lowest market price. The proposal may detail an automated action after buyback, such as:

1. redistribution to existing and active HALO voters

   The bought back HALO would be used to replenish the HALO Rewards Pool where only Implementors can earn it for supporting the Protocol. This also has the effect of lessening both the freely circulating and total staked HALO supply, thus increasing returns for investors + liquidity providers, thus increasing intrinsic demand for free market HALO. Of course, a governance vote may also decide to burn the bought back HALO tokens or even reinvest it in the Protocol in whatever form.

2. HALO token burn

   The bought back HALO would then be burned, thus lessening the total HALO supply and benefiting all HALO holders.

3. Buying DAI off the market to mint more stablecoins (for greater market liquidity)

   The bought back HALO would be sent to a decentralised exchange, such as Curve, Balancer, or Uniswap to be exchanged for DAI which would then be staked into the Minter Contract to generate more UBE.

4. Or a manual, miscellaneous action by the Foundation, such as reinvesting into Protocol development or anything else that may be proposed by governance

   Governance may also vote for the Foundation to manually allocate the bought back HALO for any purpose the HALO token holders deem necessary.

Governance

Voting

The foundation will release a voting portal that will allow any HALO token holder to stake and vote on proposals initiated by other HALO token holders.

$$Stablecoin\_Reward_{block} = \frac{Halo_{user}}{TotalHalo_{staked}} * Total\_Income_{block}$$

A user's stablecoin reward is calculated by taking his/her proportion of staked and voting HALO and multiplying that by the total income earned by the Protocol during a specific block. Those who are actively staked and voting token holders will in turn be compensated per epoch based on their proportion of staked HALO tokens from the total staked and voting HALO supply; and not from the total HALO supply.