



# *A Stable Asset Protocol with Real Yield*

Whitepaper

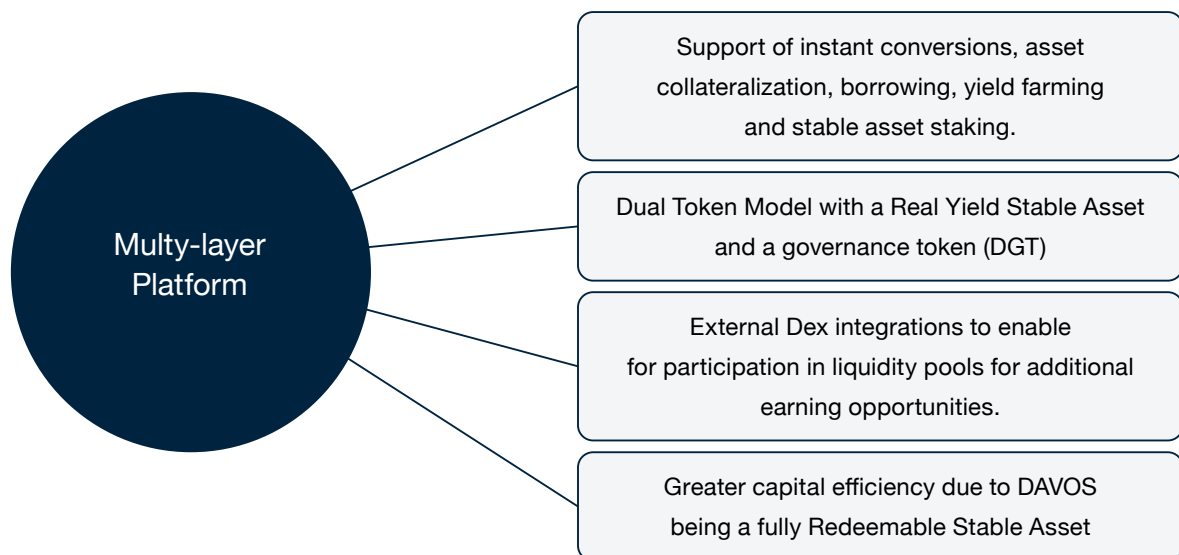
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# Summary

Davos Protocol consists of a dual token model, DAVOS and DGT and a set of mechanisms that support instant conversions, asset collateralization, borrowing, yield farming, and stable asset staking. Davos is an enhanced version of MakerDAO and is a multi-chain protocol.

Davos is designed from the ground up based on the proven MakerDAO model for a decentralized, unbiased, collateral-backed stable asset that makes use of Liquid Staking. The time-tested algorithm of MakerDAO will be expanded beyond the current functions through integrations with other lending platforms. This will allow for more users to benefit from the higher money velocity of crypto markets that is driven by supply changes, user wealth, opportunity cost, and the credibility of blockchain ecosystems.



The overarching reason behind Davos is to ensure that long-term holders are rewarded for their loyalty, and that crypto hodlers have a simple and sustainable way to generate a yield from their digital assets.

To simplify the process of trading and adding liquidity to the protocol, Davos boasts a mobile-friendly interface. There is a significant focus on user experience in a manner that will take advantage of each respective chain's superior technology.

# Introduction

This paper provides a technical discussion of the new Davos stable asset protocol that is over-collateralized by bonded liquid staking tokens. DAVOS is not a stablecoin since Davos Protocol creates a new “special use token” asset class, blending a self-governance adaptive stable token with liquid staking protocols to generate sustainable and consistent DeFi yield. The design deploys some components from MakerDAO, but with different backend mechanisms. In short, Davos has created a new way to enable token holders to earn a yield on staked assets without having to compromise on the over-collateralized nature of MakerDAO by seeking to generate yield through collateral via Liquid Staking. In addition, the goal of Davos Protocol is to aim for price stabilization and not a perfect peg.

In 2022, a reversal was seen in the stablecoin industry and DeFi yields. The year began with a bull market where yields were high as opposed to that of traditional markets however, this was followed by a bear market with most DeFi yields collapsing. This led to an expectation from traditional markets to offer bond yields higher than stablecoin yields.

Trading fees from stablecoin liquidity pools and lending interest rates on stablecoins are cyclical and strongly depend on the crypto market sentiment. Davos is a new protocol that aims to enable a new stream of yield for the Davos Stable Asset, which will be less dependent on crypto market sentiment.

Davos’s vision is to become the enabler of a stable asset market’s reference rate by building a system where users can earn a yield on the Davos Stable Asset (DAVOS) backed by liquid staked collateral. The yield-generating function is the first step toward incentivizing liquidity provision to further grow Davos’s functionality. In holding and borrowing DAVOS, users will be investing in the broader Davos ecosystem with the goal of making it the go-to settlement layer across the broader crypto space.

# Motivation

Just a decade after the world first heard of Bitcoin, the cryptocurrency market cap surpassed the \$3 trillion mark in November 2021. While this growth has been a strong point in the crypto space, the market cap is still just a small fraction of the S&P 500 index (which stood at about \$33.4 trillion as of December 2020) which is also a fraction of the size of the global stock market investment market at about \$80 trillion. This may imply that there is significant room for growth for the cryptocurrency market in the current and next decade.

The numbers in the DeFi sector are even more exciting. For example, by March 2021, DeFi managed to amass over \$39.11 billion in Total Value Locked (TVL) compared to its trivial amount of \$1.01 billion exactly one year prior, exhibiting an exponential 39x growth in TVL. By 2022, that value had crossed the \$100 billion mark!

As the crypto industry continues to mature, DeFi lending markets will increase in volume and liquidity. New solutions will appear to challenge incumbent financial institutions. But to stay true to crypto's core ethos of decentralization and inclusion, there is a need for an approach that is decentralized, composable and multi-chain.

USD pegged stablecoins have seen massive adoption amounting to \$180 billion in May 2022. While centralized fiat backed stablecoins such as USDC are the most popular, Collateralized Debt Position (CDP) stables and other variants have seen significant growth. DAI, MakerDAO's CDP stablecoin, was the largest non-fiat backed stablecoin in October 2022, with just under \$6 billion outstanding.

Most CDP protocols have the advantage of minting stablecoins at a cost of capital that is virtually zero, or even negative when counting farming rewards. This situation contributes to a higher supply of stablecoins in the market, reducing mechanically the token velocity of stablecoins and reducing stablecoin lending interest rates.

We estimate that staking is currently a \$9 billion business for the crypto economy, and will grow to \$20 billion following the Ethereum merge. If Proof-of-Stake (PoS) becomes the dominant protocol, it could reach \$40 billion by 2025.

ETH, AVAX, BNB, SOL, MATIC and other coins from (POS) blockchains are among the most valuable coins in crypto, as well as the tokens with the highest staking market capitalization. Collateralizing these coins in CDP protocols without staking them is a capital inefficiency that Davos aims to solve by systematically staking coins that are accepted as collateral in Davos Protocol, starting with MATIC. By staking collateralized tokens on behalf of depositors, while ensuring that the collateral will be returned to the depositors with the exact same amount, borrowers will have the opportunity to borrow

DAVOS Stable Asset at borrowing rates as competitive as the market's, while being able to stake or provide liquidity to Davos thus, earning a higher yield than the cost of borrowing the Stable Asset (DAVOS) from the protocol. Collateral deposited in Davos is thus not going to remain idle without generating yield for the protocol and ultimately, DAVOS Stable Asset stakers and liquidity providers. Therefore, systematically aiming to generate low-risk yields without impermanent loss or market risk is a fundamental pillar of Davos Protocol's search for capital efficiency. Davos Protocol is thus able to address the various fundamental risks associated with stablecoins.

# Risks

Seeking capital efficiency and investing the deposited collateral to generate yield is not risk-free, but it is important to generate a yield that could be as close to what is considered as the “risk-free” rate in traditional finance.

## Liquidity Risk

Liquid Staking is the primary source of yield for Davos Protocol and it has a higher liquidity risk when compared to its underlying token (e.g. MATIC, AVAX, or ETH). As an example, MATIC Liquid Staking makes staked MATIC more liquid, but not as liquid as MATIC itself. Fundamentally, the illiquidity risk of MATIC liquid staking depends mostly on its unbonding period (3-4 days for MATIC Liquid Staking), but also on the size of MATIC Liquid Staking liquidity pools, which are inherently capital inefficient and not as attractive as staking liquidity pools, since liquid staking liquidity pools on decentralized exchanges are very dependent on farming rewards so as to compensate for the opportunity cost of not staking 100% of user tokens in the liquidity pool.

Providing lending supply in peer-to-peer lending platforms is another alternative to generate yield on MATIC with lower liquidity risk than liquid staking. The reasoning follows that in normal market conditions, lent MATIC can be withdrawn at any time unless there are extreme events that lead to the MATIC lending pool being utilized at 100%. This leads to lending suppliers being unable to withdraw lent MATIC. This situation happened in 2022 with LUNA when market participants massively borrowed LUNA as a way to short-sell it (borrowing an asset and selling it has the same impact as short-selling an asset).

Generating MATIC yield by staking and lending MATIC to a certain proportion (e.g. 80% staked / 20% lent ) would massively reduce the liquidity risk of Liquid Staking so long as no more than 20% of Davos Protocol collateral depositors do not withdraw their collateral within a time period of 3-4 days (unbonding period of MATIC Liquid Staking). This is an improvement in Davos Protocol’s roadmap to enhance the modularity and flexibility of its yield converter module to generate yield out of Davos Protocol’s collateral.

## Price Stability Risk

The price stability of DAVOS is another risk to take into account. Most CDP protocols contain a stability module to swap USDC into the CDP’s stable asset at 1:1 ratio at any time against a swap fee earned by the protocol. This feature is very convenient because it unlocks a perfect arbitrage opportunity for market making the stable asset in case of price instability.

The search for capital efficiency of Davos limits the possibility to use a similar price stability mechanism because if Davos were to allow for swapping DAVOS against USDC at a 1:1 ratio without any limitation it would dilute the potential yield for DAVOS stakers and liquidity providers. The intuition behind this follows that USDC generates less yield than the underlying collateral and USDC does not require to be as over-collateralized as the underlying collateral, meaning smaller yields for DAVOS yield seekers. Therefore, a price stability module will only be considered for emergency situations where the stable asset price is trading off its peg for a prolonged period of time despite other existing price stability mechanisms present in Davos Protocol.



# Stable Yield that is Uncorrelated with the Market

Stable assets offer the best of both worlds — decentralized and global payment mechanisms like a cryptocurrency as well as steady valuations like a stable fiat currency. While stablecoins continue to gain popularity, the increasing number of new launches and the variety of customised collateral methods to achieve the objective of price stability may lead to different outcomes and varying levels of success.

Another factor that led to the skyrocketing of stablecoins and stable assets is the inflation experienced by fiat money. Since the inception of Bitcoin in 2009, the Fed's reference rate has been less than 0.25% for 9 of the last 13 years. During the same time period, the amount of money in circulation in USD M2 rose by about 250% and the S&P/Case-Shiller U.S. National Home Price Index rose by about 187%.

The negative real interest for the past 13 years is a general problem that central banks create. Bitcoin attempts to solve uncontrolled monetary inflation created by central banks, but people still require some stability (stable assets). The missing part is the yield part, the reference rate. The reference rate on top of a currency is one of the most fundamental features which people can rely on in order to protect themselves from inflation.

With the development of DeFi over the past few years, a wide range of stablecoins using different mechanisms to stabilize their price vs. USD have emerged and have been integrated into different DeFi protocols. However, many stablecoin protocols have become too dependent on one model (entirely collateralized) or gone to the other extreme (entirely algorithmic with no backing). Collateralized stablecoins either carry custodial risk or require on-chain over-collateralisation. These models provide a stablecoin with a fairly tight peg with higher confidence than purely algorithmic designs. The most notable project is DAI, created by MakerDAO. The collateral for DAI is Ether or other ERC-20 tokens. But due to the volatility of Ether the collateralization needs to be more than 1-to-1. Therefore, for every DAI (priced at \$1) there needs to be more than \$1 of Ether backing it, typically \$1.50. This is 50% over-collateralized, making the stablecoin not very capital efficient. This extra collateral allows for DAI to still be backed by at least \$1, even if the price of Ether goes down. The Ether backing DAI is put into a collective pool with all of the other Ether backing DAI.

There is a risk here because the price of Ether could drop by so much that the collateral falls below the required threshold (150% in the scenario above). The cryptocurrency market is very volatile, as an example, Ether has declined by 80% multiple times in its

history. If the collateral does fall below the threshold, the Ether will be liquidated (sold off) for DAI. This lowers the supply of DAI until it is sufficiently collateralized again.

If the price of Ether increases, DAI becomes more collateralized dollar-wise. When the price of the collateral increases, more DAI can be created without dropping below the collateral threshold.

Purely algorithmic designs such as Empty Set Dollar, and Seigniorage Shares provide a highly trustless and scalable model that captures the early Bitcoin vision of decentralized money but these are still lacking in terms of stability.

Unfortunately, the decentralized crypto-lending model from the past decade did little to democratize financial services. Most blockchain-based lending protocols promise low fees, fast execution and high returns but they continue to suffer inefficiencies in design stemming from the “Stablecoin Trilemma”. This trilemma forces stablecoin developers to focus on mechanisms which lead to a sacrifice either of decentralization, price stability, or capital efficiency.

Traditional collateral-backed stablecoins like USDT are not decentralized and are an easy target for regulators. At the same time, over-collateralized stables like DAI have proven to be stable but are hard to scale because they are capital-inefficient (\$150 in collateral needed to mint 100 DAI). Davos works with a **dual-token model** utilizing a stable asset and its governance token (DGT) to partially back the DAVOS stable asset with a variable collateral ratio.

	Secure to crashes	Decentralized	Collateral-efficient
<b>Fiat-collateralized</b>	✓	✗	✓
<b>Crypto-collateralized</b>	✗	✓	✗
<b>Non-collateralized</b>	✗	✓	✓

The intent behind Davos Protocol is to propose a solution to the capital efficiency problem that limits the ability of over-collateralized protocols to increase supply by allowing users to leverage their funds with a CDP. Through a combination of Liquid Staking, the functionality of the MakerDAO model and additional liquidity from LPs on DEXs, Davos Protocol will avoid issues such as frozen funds (fiat-backed) or held value lost (algorithmic) because of price instability with a protocol that is less dependent on crypto market sentiment.

Davos will enter the market as a new open-source liquidity protocol for earning yield against the borrowed DAVOS Stable Assets that are secured by collateralized MATIC at first, that will be followed by the acceptance of AVAX and ETH collateral (when Ethereum becomes fully redeemable). One of Davos’s key differentiators that makes it a serious alternative to collateralized stablecoins is the protocol’s objective to promote DeFi composability by leveraging cross-chain liquidity and staking to incentivize borrowers and stakers to become a part of a new decentralized economy of scale. The flexible model of Davos Protocol ultimately allows for it to provide more holistic and inclusive borrowing, lending, staking and yield generation services.

# Why DAVOS is not a Stablecoin

DAVOS cannot be considered a stablecoin since **the goal of DAVOS is not to be pegged to the U.S. Dollar or any other fiduciary currency.**

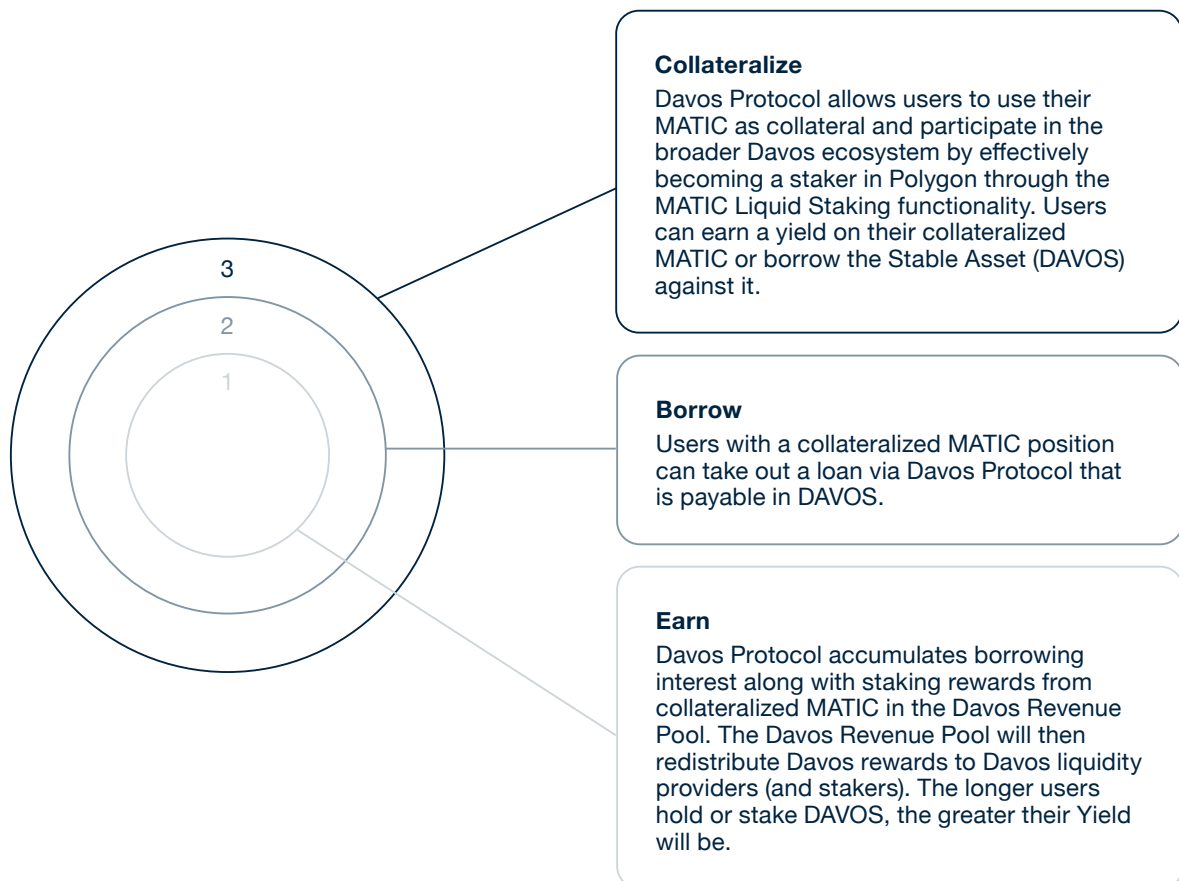
Davos Protocol aims for price stability of DAVOS over an absolute peg as the protocol does not have the same monetary tools as MakerDao, since the protocol did not import the “Emergency Peg Swap” that MakerDAO has in place. This feature dilutes the potential revenue of the protocol while adding centralization risks.

Therefore, it may be conjectured that there is a trade-off between a high real yield with the stable asset of Davos Protocol and an absolute peg. The reasoning follows as a higher price volatility is expected to occur due to the absence of such a feature. Nonetheless, this doesn't mean that the Stable Asset (DAVOS) will not converge to a similar value of any given fiduciary currency, just that a peg is not the intrinsic main goal of Davos Protocol.

# Davos Protocol

Davos offers an alternative for people who want to get more value out of their crypto assets, unlock the liquidity of their crypto, or take out a loan in DAVOS.

Davos is a cross-chain decentralized stable asset protocol and trusted reference rate enabler for the stable asset market and governed by the DGT token. Davos Protocol lends out DAVOS Stable Assets to borrowers who use approved assets as collateral. The borrower receives a competitive interest rate against their collateralized assets through Davos staking and liquidity providing.



Davos aims to enable high yield in a sustainable manner, allowing users to benefit from the higher money velocity of crypto markets. Davos attempts to be the first stable asset protocol to implement mechanisms to create a highly scalable, trustless, stable, and decentralized digital asset.

# Collateral Assets

DAVOS is generated, backed, and kept stable through collateral assets that are deposited into the CeVault. The initial collateral that will be accepted for DAVOS is MATIC, however the protocol will soon expand to various layer one's such as Avalanche and Ethereum (upon redeemability).

Davos's lending protocol is similar to MakerDAO — users can deposit their crypto assets and borrow DAVOS against them as collateral.

In collateralizing their assets, users will be investing in the broader Davos ecosystem and can borrow DAVOS to gain yield by staking it.

In borrowing DAVOS and repaying it, users will receive rewards paid out in DGT — the Davos Governance Token. Rewards are calculated dynamically and are the product of the rewards rate and total user's debt in Davos. The rewards rate is a fixed amount set by Davos Protocol.

Users can perform liquidations if they see a liquidation process is due, as the borrowed DAVOS value becomes higher than the current worth of a user's collateral and receive a flat fee (tip) and a dynamic percentage (chip) simply for starting a Dutch auction, which is the main part of the liquidation process. It is an opportunity arising in the liquidation process, and any Davos user can do it.

## What is Liquid Staking?

The Liquid Staking mechanism is an enhanced version of staking on a given Layer 1. Typically, it is the PoS network that allows users to take advantage of this feature. Liquid Staking eliminates the need for users to lock their assets up with a central node. This removes the risk of having assets that are now “illiquid” and can't be spent or earned in other places. Liquid Staking solves the problem of locked up liquidity when staking assets on PoS networks.

Staking rewards from PoS networks can be one of the most stable streams of income available (in percentage terms). However, typically you have to wait until the end of the staking period to receive your staking rewards.

Liquid Staking provides instant liquidity for staked assets in the form of Liquid Staking tokens.

Liquid Staking tokens represent the value of your staked assets but the tokens are portable, accessible and thus liquid. As a result, the tokens may be utilized in a number of ways.

The main components of MATIC Liquid Staking are the following:

- Liquidity mining opportunities are enabled by providing liquidity for pools on decentralized exchanges. The first main liquidity pools are expected to be ankrMATIC/MATIC.
- Farming rewards for liquidity providers. Liquid Staking presents several yield farming strategies for users to contribute to liquidity pools and gain a share of the trading fees and governance tokens. These new LP tokens can be used to generate yet another layer of earnings.
- Staking rewards on farmed tokens. After using yield farming strategies, users can also reinvest their farmed LP tokens into more staking opportunities. This is a highly repeatable process as layers of rewards from farming and staking will quickly stack up.
- Yield aggregators/vaults can automate yield farming rewards and enable compounding returns with next to no effort from users. This is a great method for maximizing your passive income strategy.
- Additional trading opportunities thanks to the elastic supply nature of ankrMATIC, meaning that a user could potentially buy ankrMATIC at a discount on a decentralized exchange and redeem it (unstake it) to extract its fair value back. All of which takes up to 3-4 days (the MATIC Liquid Staking unbonding period).

### **Enhanced Decentralisation**

Liquid Staking will not be using preferred validator nodes to stake the collateral from users. In selecting several suitable and reliable validators, the protocol will make Liquid Staking more decentralized one validator at a time in all the Layer 1 tokens that will be accepted as collateral.

### **Improved Security**

Staking with Liquid Staking allows users to play an important role in boosting the network's security as a whole. Davos's staking system distributes staked tokens intelligently across the entire ecosystem to help the network achieve optimal decentralization. Diversity and decentralization of active validators ensure the network remains as secure as possible.

# How Davos Protocol Makes Use of Liquid Staking and Yield-Bearing Tokens

Yield-bearing tokens are a relatively new development in DeFi. Several blockchains support composability with regard to project building in their ecosystem. This speaks to the interoperability of teams and projects that develop protocols, platforms and products on top of each other and their capacity to exchange data across protocols and platforms.

For this reason, many DeFi projects host a variety of vaults or pools where users can deposit and receive a token, a “LP token”, in return.

Davos Protocol deploys the principle of yield or reward-bearing tokens to allow users to take advantage of their interest-bearing position by borrowing against it. As an example, in staking the collateralized MATIC on the Polygon chain, Davos converts MATIC to ankrMATIC, which are reward-bearing aka yield-bearing tokens. These tokens increase in value over time to reflect staking rewards, meaning that 1 ankrMATIC will grow in value when compared to MATIC.

The MATIC to ankrMATIC process:

1. User sends MATIC to DavosProvider
2. DavosProvider mints hMATIC for the user (as a notarial receipt)
3. DavosProvider sends MATIC to the yield converter router and the converter exchanges them to ankrMATIC
4. The converter sends ankrMATIC to the CeVault for storage and accumulation of staking rewards
5. CeVault mints ceankrMATIC for DavosProvider
6. DavosProvider collateralizes ceankrMATIC through Interaction

The accumulated staking rewards are added to the Davos Revenue Pool, along with the interest accrued from borrowing.

Davos Revenue Pool distributes its liquidity among the users who borrow and stake DAVOS in order to increase DAVOS adoption and incentivize active users with yield.

# Improved Capital Efficiency

To benefit from DAVOS yield, the protocol converts user MATIC into ankrMATIC that accumulates Liquid Staking rewards.

During this phase, Davos will offer a compelling alternative to existing protocols and serve as a digital system for a wide variety of decentralized financial operations.

It thus, provides not only an enhanced model that leverages DeFi composability but achieves better influence over the price stability of the stable asset through a combination of (i) stable asset supply; (ii) stable asset target borrowing interest; (iii) borrowing incentives; and (iv) stable asset staking rewards. The redistribution of the Davos Protocol revenue occurs periodically (every 7 days), so it can cause a lag to fully impact the price stability.

Users with a collateralized MATIC position can take out a loan via Davos Protocol payable in DAVOS Stable Assets. The collected borrowing interest along with the Liquid Staking rewards from the collateralized MATIC will be deposited and held in the Davos Revenue Pool. The Davos Revenue Pool will then redistribute its liquidity to reward DAVOS stakers and liquidity providers.

Davos Protocol is able to provide greater capital efficiency due to DAVOS being a fully redeemable stable asset with a strategy to generate yield against various collateral types while minimizing risk via Liquid Staking. At any time, Davos Protocol allows holders to redeem their DAVOS for their underlying collateral along with any additional yield that has been generated. The standard waiting times for withdrawal of MATIC collateral for example is 3–4 days. Alternatively following on from above, users may choose to withdraw their corresponding ankrMATIC at any time instead. In the case of ETH, the withdrawal dates are still unknown, but users will still be able to withdraw their corresponding ankrETH at any time.

## The DAVOS Yield Generating Stable Asset

DAVOS is a decentralized, unbiased, and collateral-backed cryptocurrency. DAVOS, a yield generating stable asset, is backed by an algorithmic framework that is collateralized by tokens to ensure that it has a certain level of price stability based on the protocol's monetary policies.

Users who have collateralized their tokens via Davos Protocol are eligible to take out a loan in DAVOS. The operations of borrowing DAVOS Stable Assets, repaying the loan and withdrawing the original collateral are all governed by a set of smart contracts.

When DAVOS is > \$1, the supply of DAVOS will have to be increased.

- Since DAVOS is at a premium, borrowers are incentivized to borrow more DAVOS to sell for other assets.



- To reduce demand for DAVOS farming, Davos Protocol will reduce DAVOS farming rewards by decreasing DAVOS borrowing interest.

When DAVOS is  $< \$1$ , the supply of DAVOS will have to be reduced.

- Since DAVOS is at a discount, borrowers are incentivised to buy DAVOS from the market to pay back the debt.
- To decrease DAVOS borrowing demand, Davos Protocol will increase DAVOS borrowing interest, which increases DAVOS farming rewards

Davos is easy to access and use. Users can borrow DAVOS by depositing collateral assets into the CeVault within Davos Protocol. This is how DAVOS is introduced into circulation and how users gain access to liquidity. Others obtain DAVOS by buying it from brokers or exchanges, or simply by staking DAVOS through LPs on DEXs. Once generated, bought, or received, DAVOS can be used in the same manner as any other cryptocurrency: it can be sent to others and used as payments for goods and services.

## DGT Tokens

Davos uses a dual-token model in which the DGT token is the governance token of Davos Protocol and is used to govern Davos's Revenue Pool distribution and to incentivize users.

The DGT token is an ERC-20 compatible token. Its core functions within the Davos Protocol are:

- Platform governance
- Participants incentivization
- Voting on upgrades (add a new vault, change protocol parameters and fees, etc.)

DGT tokens are generated and distributed against the borrowed amount of DAVOS. Similar to DAVOS, DGT tokens can, at the user's election, be swapped or placed in a farming pool on a DEX to maximize capital efficiency and compound yield.

# Properties of Davos Protocol

## Governance of Davos Protocol

The use of the DGT token will allow those who hold it to vote on changes to the Davos Protocol. DGT holders can submit proposals for a vote. Any voter-approved modifications to the governance variables of the protocol will likely not take effect immediately in the future giving DGT holders the opportunity to protect the system, if necessary, against a malicious governance proposal (e.g., a proposal that alters collateral parameters contrary to established monetary policies or that allows for security mechanisms to be disabled) by triggering a Shutdown.

## NTO — New Tokenomic Order

Inspired by the [Synthetix Governance Model](#), Davos Protocol is governed by a Council of 7 members. Each member is voted in by the DGT holders and has a mandate of three months.

### Global Polymath Council

Global Polymath Council (GPC) is the central governing body of the Davos Protocol. The GPC votes on overall improvement proposals and parameter changes and is responsible for analyzing and implementing community proposals — DIP's — Davos Improvement Proposals.

The Council will also be responsible for performing risk analysis and economic forecasts every week and proposing key economic adjustments to protocol metrics. The Council is responsible for analysing and implementing DCCPs — Davos Configuration Change Proposals.

The GPC will also be responsible for eight main pillars:

1. Target Interest Rate
2. Collateral Ratios
3. Davos fees and the reserve pool contribution (% of revenues)
4. The Revenue Distribution (staking vs. liquidity mining)
5. Whitelist with respect to Revenue Distribution participation
6. Distribution of borrowing interest

7. Treasury management including how to generate a yield from the collateral of the treasury and deciding about the target allocation for Liquid Staking and target allocation for lending interest.
8. Pause liquidations in the case of a Black Swan Event.

## **Gauge Weight Voting**

There will also be a Gauge Weight Voting system where users can vote as to how the incentives may be distributed. The main responsibility of the Gauge Voting system will be to decide as to how to redistribute DEX incentives and how to redistribute borrowing incentives to each collateral type. Voting will happen every 7 days. This Gauge Weight Voting system will also be responsible for deciding which liquid staking provider and lending platform should be used to generate yield from the collateral. The voting for this decision occurs each month.

## **Davos Improvement Proposals (DIP's)**

The DIP is used to describe proposed changes to the core of Davos Protocol. They can be proposed by anyone within the Davos Community and need to feature the motivation, technical specifications, and rationale behind design decisions relating to the proposed idea.

The proposed DIP will have two phases namely: (i) community voting; and (ii) if 50% of DGT token holders agree with DIP's they are sent forward to the Global Polymath Council.

DIP's is the main documentation mechanism used by the Global Polymath Council who is responsible for conducting interviews with the DIP author, debating on the implications of the DIP, and then deciding if they should be implemented within the Davos Protocol or not. If they make sense, a second community pool is performed within a 7 day period, where the community will decide.

## **Davos Configuration Change Proposal (DCCPs)**

The DCCP is an artifact which follows the same authoring and review process as the DIP, except the contents of the DCCP contain proposed changes to existing parameters of the system. As a result of this, DCCPs commonly reference a DIP that is deployed on the Davos Protocol.

## Making Staking Easy as a Swap

As mentioned previously, the yield generating Stable Asset (DAVOS) can be used to provide liquidity to liquidity pools on DEXs. As more people trade, users can earn a share of the transaction fees (Liquidity Mining), on top of their DAVOS staking rewards from the respective DEX.

By providing liquidity, users also have the possibility of receiving additional rewards on top of liquidity pool tokens, representing their share of a liquidity pool on a DEX.

Davos also plans to enable Davos users to efficiently trade between stable pairs of assets on DEXs, as well as earn yields by providing liquidity.

## Price Stability Mechanisms

The goal of Davos Protocol is to have a yield generating stable asset with high price stability. However, in the case of price instability, Davos Protocol has several additional mechanisms that can be implemented and allied with the previously mentioned opportunities.

The Price Stability Mechanisms that Davos Protocol has in place are the following:

- Borrowing Rates Adjustment
- Arbitrage
- USDC Collateral
- Emergency Swap

## Borrowing Rates Adjustment

The first mechanism that Davos Protocol can implement will be to adjust the borrowing interest, borrowing incentives, and stable asset staking of DAVOS in order to adjust the demand as explained below.

Stable Asset Price	Stable Asset Supply	Possible Measures		
		Target Borrowing Interest	Borrowing Incentives	Stable Asset Staking
Premium	Increase	Decrease	Increase	Decrease
Discount	Decrease	Increase	Decrease	Increase

If DAVOS is trading at a premium, it means that there is a demand higher than the supply. Therefore, it is necessary to increase the stable asset supply. On the other hand, if DAVOS is trading at a discount, it means that there is more supply than demand and there is a need to decrease the stable asset supply.

## **Target Borrowing Interest**

The Target Borrowing Interest is the interest rate paid by borrowers on their CDP. If the price of DAVOS sharply increases, the Council can decrease the Target Borrowing Interest and therefore incentivize the minting of new DAVOS by making the Debt Position cheaper to maintain, resulting in an incentive to expand the DAVOS supply Debt.

On the other hand, if the price of DAVOS starts to decrease, the Council can increase the Borrowing Interest which will have the opposite effect.

## **Borrowing Incentives**

The Borrowing Incentives are monetary incentives distributed to borrowers. If the price of DAVOS increases, the Council can increase the Borrowing Incentives and therefore incentivize the minting of new DAVOS by making the Debt Position cheaper to maintain or even allow for it to generate a yield, resulting in an incentive to expand the DAVOS supply. On the other hand, if the price of DAVOS starts to decrease, the Council can decrease the Borrowing Incentives which will have the opposite effect.

## **Stable Asset Staking Rewards**

When users decide to stake DAVOS they will receive DAVOS Staking Rewards. This reward will come from Davos Protocol Revenue Distribution and will compete with Liquidity Provision Incentives, as deep liquidity will also be a mechanism for promoting price stability.

Nonetheless, if DAVOS increases in price, the Council can decide to reduce Staking Rewards, which will result in a decrease in the attractiveness of staking the stable asset within Davos Protocol and instead increase the possibility of selling DAVOS and rotating to other investment opportunities. On the other hand, if the price of DAVOS sharply decreases in value, the Council can increase the Staking Rewards catalyzing the inverse process.

## **Other Important Facts**

It is also important to mention that Stable Asset Staking Rewards will not directly affect the supply, the several measures previously described are not mutually exclusive and each of them will have different elasticities to the adjustments performed.

In addition, these mechanisms will have a drawback: it might take some time to achieve price stability. This is due to the fact that there will be market agents that will need to naturally act and adjust to yield changes until DAVOS volatility decreases and it restores price stability resulting in a lag between the yield shock and the price stability.

In addition to this, the redistribution of the Davos Protocol Revenue occurs periodically (every 7 days) and as a consequence therefore, so will the incentives.

However as mentioned before, to accelerate the process, Davos Protocol will deploy four mechanisms to influence the price stability of the DAVOS Stable Asset:

1. Stable Asset Supply;
2. Stable Asset Target Borrowing Interest;
3. Borrowing Incentives;
4. Stable Asset Staking Reward.

## Arbitrage

Arbitrage is an action where a participant buys an asset in one market and sells it in another market at the same time to profit from the difference in prices of the asset. Assuming that the market agents are rational, arbitrage will be a natural mechanism of price stability as the arbitrage performed by profit-driven actors helps to maintain the peg. However, the absence of arbitrage possibilities does not imply that market prices always and everywhere reflect some sort of fundamental values.

The price stability of DAVOS relies on the correct incentivization of arbitrageurs. If the price stability of DAVOS decreases and price volatility increases to either side (up or down), it should quickly be restored because of the following incentive mechanisms:

**DAVOS price sharply increases:** Arbitrageurs can deposit collateral with a value of \$1 and mint DAVOS. They subsequently sell DAVOS on the open market and pocket the difference until the price stability is restored. This results in an increase in the TVL and selling pressure on DAVOS.

**DAVOS price sharply decreases:** This presents a good opportunity to buy DAVOS, repay the loans taken to mint DAVOS and unstake their assets to sell on the market at a discount. This will result in a buy pressure incentive until DAVOS reaches a stable price, and the arbitrage opportunity ceases.

However this mechanism might not be sufficient to achieve price stability and further protocol adjustments might be necessary. There are several measures that the Council can implement to achieve this supply adjustment by using solely the borrowing rates during a market when the asset's price at any particular time has an increasing spike in volatility and instability, until it reaches a more stable state again.

## USDC Collateral

The second mechanism is the USDC Pools which will promote smoother arbitrage opportunities. This feature can be easily implemented and will further boost price stability as the user can easily mint or sell DAVOS to capture any price discrepancies.

However, having a high TVL of USDC will result in a decrease in the rewards for DAVOS stakers as sustainable stable asset yield opportunities have a lower APR than the staking rewards of Liquid Staking. Allied to this, if users are not fulfilling their debt obligation, there won't be borrowing interest to distribute among stakers, resulting in a further decrease in the yield.

The Revenue Pool distributed to DAVOS stakers will source the staking rewards from three places:

1. Borrowing interest from Davos Protocol
2. Yield from collateral
3. Stable Asset supply vs. the collateral ratio in Davos Protocol

Including USDC dilutes the Stable Asset Staking Rewards based on the assumption that users are expected to use the credit line vs. USDC collateral due to lower risk of liquidation since USDC collateral does not generate as much yield for Davos Protocol as staking with the collateral.

Therefore, Davos will only accept USDC with a high Collateral Ratio (e.g 95%). This is to combat the lower potential yield on USDC while making the market less attractive using this USDC collateral. In addition, there will also be borrowing interest that is going to be generated creating an additional source of income. Nonetheless, this still does not reduce the fundamental issue that USDC collateral is less attractive than the underlying collateral due to the lower lending interest rate on USDC versus the staking rewards of Liquid Staking. USDC collateral dilutes DAVOS staking rewards because of the lower potential yield on USDC and the higher collateral ratio. The higher collateral ratio will make market making less attractive using USDC collateral without reducing the fundamental issue of USDC collateral being less attractive than Liquid Staking collateral because of the lower lending interest on USDC as opposed to staking rewards obtained from Liquid Staking.

There will also be a Debt Ceiling (upper limit set on the amount that can be borrowed) where only a certain percentage of the collateralized assets used to mint DAVOS, can be USDC. The goal of this feature is to mitigate the dilution of staking rewards.

## Emergency Swap

In addition to all these mechanisms, Davos Protocol will have an Emergency Swap feature that will allow anyone to directly swap DAVOS for USDC in the case of extreme events thus smoothing the execution of arbitrage opportunities and further promoting price stability.

This feature will be automatically implemented anytime the Weighted Average Price of DAVOS over the last 7 days with 1 hour granularity has a 2.5% disparity and will allow users to trade DAVOS to USDC on a 1:1 ratio, meaning that users can easily execute arbitrage opportunities.

In the case of Davos being traded above USDC price, the USDC to DAVOS swap will be unlimited, however, the DAVOS to USDC will be limited to the treasury capacity. In the case where USDC gets deposited in the Davos Treasury this will be deployed on AAVE in order to generate yield for the users.

This mechanism will be temporary, it will have a Debt Ceiling and will be only available for DGT token holders.

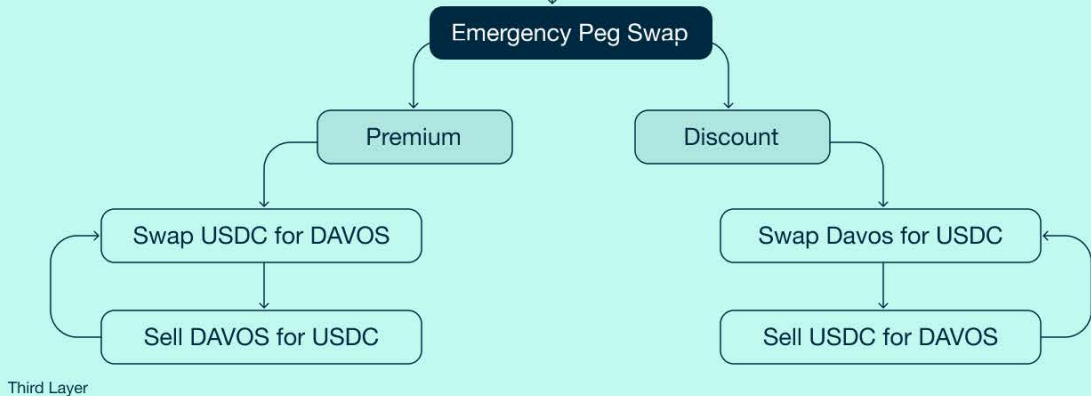
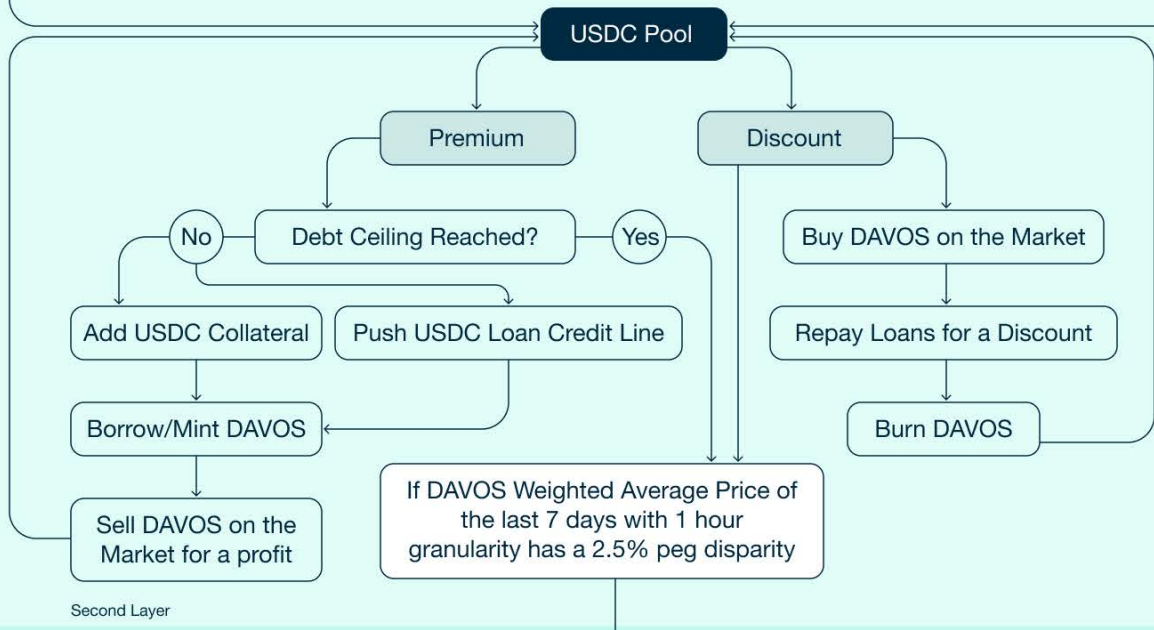
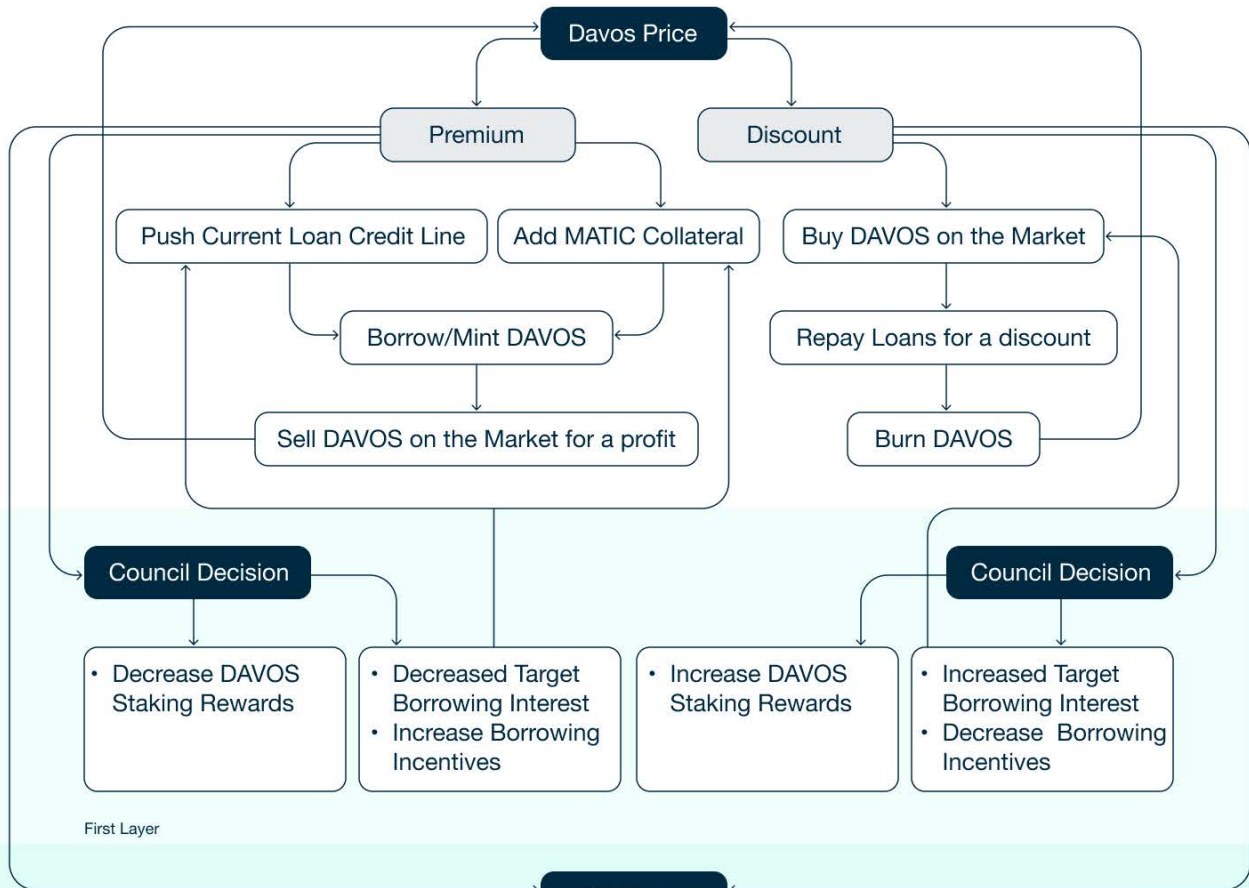
### **Why did we not import the Peg Swap functionality of MakerDAO?**

Due to this feature on MakerDao, currently 50% of DAI is generated by collateral that is made up of USDC.

Davos Protocol believes that having this function may result in many issues such as regulatory risk and centralization; increased exposure to the same asset; and low yield opportunities for our users, as sustainable stable asset yield opportunities are much lower than the staking rewards of Liquid Staking.

Imagine that 50% of DAVOS in circulation has been collateralized by USDC. This will not only result in a reduction in rewards but in a situation where users are not satisfying their debt obligation, it will lead to a further decrease in the yield. This is why the Peg Swap Function will only be added when required and with a debt ceiling.





# Black Swan Events Mitigation

## Liquidation Cascade

Davos Protocol, allows users to borrow up to 66% of their collateral's value. This will result in an over-collateralization of every DAVOS in circulation (150% collateralization ratio).

This means that a given position can be liquidated if the value of its collateral falls below the required minimum level. This can happen, for instance, in an extreme event where the collateral used drops heavily in value.

All the positions that can be liquidated or that are close to liquidation can be monitored by any user on the Liquidation Dashboard. On this Dashboard, users can also Liquidate existing positions when they fall under the minimum required collateralization ratio.

During the Liquidation Process, enough collateral is sold to cover the debt along with a Liquidation Penalty, leaving the remaining collateral available for withdrawal. The Liquidation Penalty reflects a percentage fee applied to the user's debt in a Dutch action during the liquidation process. Fixed by Davos governance, its current value is 13% of the total amount of debt. The user that initiates the liquidation process will also receive a fee, creating an incentive for users to keep track of all the positions within Davos Protocol.

A high volatility period in the market resulting in a high number of liquidations doesn't necessarily translate to a price impact on the price stability of DAVOS but might result in a bank run of the collateralized asset in the DAVOS treasury, which might result in temporary liquidity issues.

## Bank Run

In the Davos Treasury, 80% of the assets are staked to generate a yield while the other 20% is not. The reason behind this is that it is necessary to have a more liquid asset to be able to fulfil users' withdrawal needs, or in other words, when a user wants to convert DAVOS back to crypto.

If users decide to un stake more than 20%, this will result in a liquidity crisis where the treasury will not have enough liquid assets for users to withdraw. However, the treasury still has Liquid Staking assets that can be withdrawn instead of the assets themselves. In theory, this should not represent a major issue as these tokens can also be traded in the market and can be converted back to the original asset after the unbonding

period of that given Layer 1. The momentary selling pressure of the reward-bearing token might result in temporary discounts, but since the reward-bearing token is fairly liquid compared to other assets (like ankrETH, where we don't know when we will be able to redeem our ETH), the higher the discount the higher the demand for these tokens.

This process doesn't necessarily affect the dollar parity of DAVOS but might result in short-term stress on the credibility of the protocol.

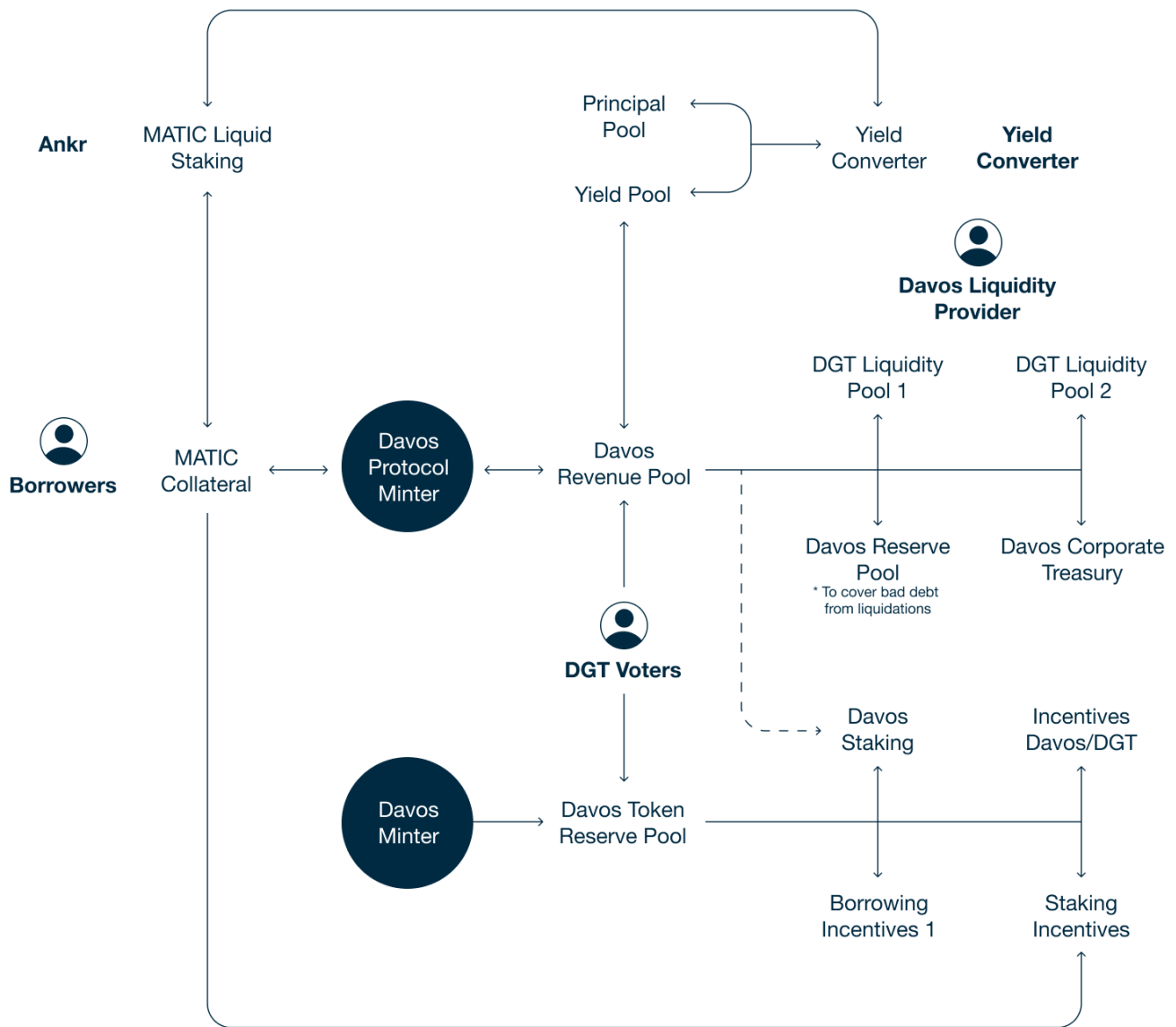
Nonetheless, in order to mitigate this possibility, this ratio will be automatically rebalanced in order to meet users' capital requirements with MATIC, thus maintaining the 20/80 ratio. The fact that MATIC only has a 3-4 day unstaking period, makes it easier to perform the rebalance and not have the same illiquidity premiums and risks as other Liquid Staked Tokens have (like ETH). The size and depth of the liquidity also do not represent an issue, as the elasticity of the supply is very high.

# Smart Contract and Features

Davos functions as a set of smart contracts that interact with other blockchains and contracts.

The main components that make up Davos are:

- **MakerDAO set** — the Maker Protocol, also known as the Multi-Collateral DAI (MCD) system that allows users to generate DAVOS by leveraging collateralized assets.
  - VAT
  - SPOT
  - Davos
  - DavosJoin
  - ankrMATIC
  - JUG
  - VOW
  - FLOP
  - FLAP
- **DavosRewards** — rewards distribution in the Davos rewards token.
- **DavosToken** — ERC-20 compatible rewards token given to the user for borrowing Davos.
- **DavosOracle** — oracle for the Davos rewards token.
- **Yield converter router** — finds the best way to obtain ankrMATIC, which is an intermediate token used during the process of collateralizing a user's assets.
- **CeToken** — ceankrMATIC, which is the underlying collateral token inside Davos.
- **CeVault** — stores obtained ankrMATIC, which is an intermediate token used during the process of collateralizing a user's assets.
- **DavosProvider** — wraps MATIC into ceankrMATIC via the yield converter router.
- **Interaction** — proxy for the MakerDAO contracts. Provides deposit, withdrawal, borrow, payback, and liquidation functions to the end users.
- **AuctionProxy** — entry point for Dutch auction methods, which is part of the liquidation process of user's assets. Allow users to start and participate in auctions.
- **ankrMATIC** — liquid yield-bearing token used during the process of collateralizing a user's assets.
- **hMATIC** — token minted for the user as a deposit receipt for their collateralized assets, borrow Davos, repay Davos, withdraw collateralized assets, liquidate collateralized assets, the collateralized assets, in Davos.



In addition to these contracts, Davos interacts with smart contracts to extract the yield from the reward-bearing tokens it uses an Automated Market Maker (AMM) for the exchange of tokens with low fees and low slippage.

# Liquidity Pools (LPs)

The Davos Stable Asset and DGT tokens can be staked, swapped, bought, sold, and put into farming pools on external DEXs. It will be up to the DEXs to determine the terms of participation in liquidity pools as well as the amount of the rewards for liquidity providers and the trading fees for contributing. The LPs will be incentivized with DAVOS or DGT tokens as farming rewards. The inclusion of DAVOS and DGT tokens into external DEXs will contribute to improving the overall trading experience of Davos's native cryptocurrencies with seamless swaps, dramatically reduced trading fees, and more advanced trading mechanisms.

Larger liquidity pools create less slippage and result in a better trading experience. Thus, Davos and DGT liquidity providers will be rewarded with extra tokens for supplying liquidity to certain pools on external DEXs.

Liquid Staking tokens are automatically issued when users successfully stake assets such as DAVOS or DGT tokens.

For example,

1. Davos Liquid Staking tokens — hDavos and MATIC pairs can be used to provide liquidity to hDavos/MATIC liquidity pools on DEXs. As more people trade, users can earn a share of transaction fees (Liquidity Mining), on top of their Davos staking rewards from hDavos.
2. By providing liquidity, they also have the possibility of receiving farming rewards on top of Liquidity Pool tokens, representing their share of a liquidity pool on a DEX.
3. Users can harvest the farmed tokens and stake those tokens as well to earn more yield, or simply sell them to buy more DAVOS and DGT to generate more yield. Repeating this operation periodically will add a compounding effect on their yield.

When staking DAVOS and receiving Liquid Staking tokens (hDavos) the main benefit is the liquidity, as it is not possible to unstake Davos for the moment.

Davos will continue to increase protocol adoption by partnering with DeFi protocols on MATIC and using the native token of various DeFi protocols to influence reward emissions. The team will actively incentivise with DAVOS tokens, Davos liquidity pools across DEXs to maintain the price stability of the DAVOS Stable Asset.

DeFi composability would enable DAVOS liquidity providers, and at a later stage, DAVOS stakers as well, to further boost yield in a sustainable manner thanks to integrations on other lending platforms.

DAVOS and DGT hodlers can combine these strategies while using the Davos Protocol to maximize their returns even further.

# Interacting with Davos Protocol

The description below is fairly concise while still covering important technical details. For more information on the interaction, refer to the [Davos documentation](#).

## Step 1

### **Collateralize your Assets**

Using MATIC as an example, in order to collateralize their assets, the user sends a set amount of MATIC via the Davos Provider::provide() smart contract. The assets will be locked inside Davos Protocol via the VAT::frob() smart contract effectively collateralizing them. Intermediate ankrMATIC and ceankrMATIC tokens are applied in the internal Davos logic in the process.

## Step 2

### **Borrow DAVOS against the collateralized MATIC**

To borrow DAVOS against the collateralized assets, the user sends a transaction to Interaction::borrow() smart contract in order to generate a specific amount of DAVOS in exchange for keeping their collateral locked in the ceVault. Davos calculates the current DAVOS value inside Davos Protocol. The calculation takes into consideration the borrowing limit, which is the price of the total assets collateralized by the user \* collateral ratio (fixed amount set by Davos).

The collateral ratio is the percentage of the user's collateral value that determines the maximum borrowing limit for the user. The current value is 66% of the collateral value. The collateral ratio is used in triggering the liquidation process when the borrowed Davos value becomes higher than the 66% of the current worth of users' collateral with a safety margin.

Davos indebts the user via VAT::frob() for the borrowed Davos amount. Then sends the borrowed Davos to the user via Join::exit().

## Step 3

### **Claim Rewards for Borrowed Davos**

Users who borrowed Davos are minted rewards in DAVOS Stable Asset and can claim them anytime.

To claim the Davos stable assets to their wallet, they send a transaction to the `DavosRewards::claim()` smart contract. `DavosRewards` updates the rewards pool size and rewards rate, and transfers the pending user rewards to the user's wallet via `DavosToken::transfer()`.

#### Step 4

### Pay Down the Debt and the Accumulated Interest

To repay the borrowed Davos along with the accumulated interest, the user send Davos to the `Interaction::payback()` smart contract, which in turn transfers Davos to the Davos Vault via `DavosJoin::join()` and subtracts the repaid Davos amount from the user's debt via `VAT::frob()`.

#### Step 5

### Withdraw Collateral

With the amount of borrowed Davos returned and the interest paid, the user can withdraw all or some of their MATIC collateral back to their wallet. Once all Davos is completely repaid, the user can send a transaction to `DavosProvider::release()` initiating the withdrawal process. `DavosProvider` gets ankrMATIC via `Interaction::withdraw()`, which unlocks the assets via `VAT::frob()` and transfers the assets from the CDP engine to the Davos Vault (like in MakerDAO) vault via `VAT::flux()`. Then `DavosProvider` exchanges ceankrMATIC to ankrMATIC and unstakes the ankrMATIC to release MATIC to the user.

#### Step 6

### Liquidate

When the current worth of collateral with safety margin  $<$  borrowed amount of Davos, the liquidation process can be triggered by anybody via `Interaction::startAuction()`. The liquidator who triggers the Dutch auction, aka the liquidation process, gets a reward (*tip* + *chip*) for doing it. *tip* and *chip* are set by Davos governance and are currently \$300 and %0.1 of amount of debt in the auction respectively.

Davos sets the starting auction price for the liquidated collateral to be equal (*current\_collateral\_unit\_price* \* *buf*), where *buf* is a param similar to the liquidation penalty, is set by Davos governance, and is currently 2% of the collateral value.

Davos then lets the liquidator come and buy via `buyFromAuction()` to buy any amount  $>$  than dust (currently 1 USD). If the liquidator's proposed price is  $\geq$  *current\_auction\_collateral\_unit\_price*, Davos sells the requested amount of the user's collateral to the liquidator, exchanging ceankrMATIC for ankrMATIC and sending ankrMATIC to the liquidator's wallet. Effectively, the liquidator buys ankrMATIC that they can later exchange for MATIC or hold to accumulate more MATIC as ankrMATIC grows in value when compared to MATIC with time.



Davos incrementally lowers the auction price while letting anybody buy still. The reason for decreasing from a higher price is because of bots and change of collateral price from oracle to avoid any sudden loss. The auction lasts a fixed amount of time set by Davos's governance. The price is recalculated every second of the auction.

When the auction time limit is reached or the price decrease has reached a certain threshold (the limits are set by Davos governance; currently 40%), Davos pauses the auction and waits for a liquidator to come and restart the auction. The liquidator who restarts the auction gets a reward (*tip + chip*) for it.

Finally, Davos covers the user's debt and keeps profit (borrowed amount + (borrow interest + liquidation penalty)). Then it calculates the remainder (price paid – debt – profit) and sends it to the user's wallet.

# How can Davos Improve the DeFi Ecosystem?

Davos Protocol is confident that decentralized finance is ahead of centralized financial ecosystems and Liquid Staking is one of the biggest milestones in recent years. However, at the same time, there are also some inherent shortcomings in the DeFi space. These shortcomings are deeply rooted into the algorithms that are used to drive this economy of smart contracts.

Davos will continue to develop and upgrade the protocol to solve the capital inefficiencies of DEXs as well as open more streams of income for users. As a next step in the development of the Davos Protocol, the protocol plans to host the yield converter and facilitate integrations to enable a 90%/10% stake ratio. In addition to earning rewards on 90% of their staked assets, users will also profit from the interest and fees from Davos lending the remaining 10% of staked assets to users who want to borrow them.

Davos will continue to generate staking rewards derived from the collateral but will boost users' earnings by adding a DeFi composability layer based on more pools (e.g. Aave). The yield converter router will be critical in achieving this, as it will function by means of choosing between 2 options — checking the price on a DEX and then

based on the value either issuing a command for staking or trading the collateralized assets, depending on what would generate a better yield. Therefore, the Liquid Staking assets will be sent directly to the principal pool while the collateralized assets into a small trading aggregator. Any spread will go into the Davos Revenue Pool to be distributed equally among DAVOS stakers on a regular basis.

By putting the collateralized assets to work via a lending functionality, Davos will provide users with fast and convenient access to loans and DAVOS hodlers — with an additional opportunity to generate returns on their holdings/stakes. Since the platform is based on smart contracts, the entire process of borrowing and lending remains automated and uncompromised.

This level of composability will allow Davos to leverage cross-chain liquidity to offer more holistic and inclusive borrowing, lending, staking, and yield generation services. It will also facilitate the exchange of value across multiple protocols to improve scalability and unlock tokenized assets. Davos Protocol views composability as a byproduct, determined by the quality of Davos's partnerships and integrations with DEXs, platforms, and other protocols. By building on top of Davos's Liquid Staking capacity to enable lending and borrowing against the staked assets, there will be an

increased DeFi composability, which in turn creates more options available for users to earn an additional yield on their assets.

To further enhance cross-chain liquidity, Davos will allow users to import their yield from another protocol trusting the yield converter router infrastructure with certain pieces of the product. Beyond an improved cross-chain staking experience this will enable stakers to compound their yield through other related DeFi activities. The introduction of such value-adding features will allow us to effectively balance the needs of the network with the needs of participants. This will have the greatest success in attracting users to this exciting and innovative Davos Protocol as a new standard in decentralized finance.

# Conclusion

Davos Protocol functions as the new open-source liquidity protocol for earning yield on collateralized Liquid Staking and borrowing Davos — a new cross-chain over-collateralized Stable Asset with real yield. The protocol is built by DeFi and smart contract experts with the aim to position the world-class revolutionary Davos Stable Asset as the most widely used decentralized Stable Asset protocol, by leveraging Proof-of-Stake (PoS) rewards, liquid staking and yield-bearing assets.

Inspired by the MakerDAO, Davos will offer a decentralized Stable Asset (DAVOS) backed by different Liquid Staking options. Achieving an alternative product-market fit that allows anyone to earn a consistent and sustainable return on Davos.

# Annex

## Example (Liquidation Process)

Price of 1 unit of collateral <b>\$2</b>	Liquidation ratio <b>66%</b>	Collateral price based on liquidation ratio <b>\$1.32</b>
Assume User deposit 10 units collateral $10 \times 2 = \$20$	Borrow limit $\text{user\_deposit} \times \text{liquidation\_ratio} = 20 \times 0.66 = 13.2$	Assume users borrow \$13 of DAVOS <b>13 DAVOS</b>
Assume Price of 1 unit of collateral decreases to <b>\$1.8</b>	Collateral unit price with safety margin $\text{current\_collateral\_unit\_price} \times \text{liquidation\_ratio} = 1.8 \times 0.66 = 1.188$	Current worth of collateral with safety margin $\text{price\_of\_collateral} \times \text{amount\_of\_collateral} = 1.188 \times 10 = \$11.88$
Positive diff puts user under liquidation line $\text{borrowed\_amount} - \text{current\_total\_collateral} - \text{borrow\_limit} = 13.2 - 11.88 = \$1.12$	Amount of collateral that goes to Dutch auction <b>10</b>	Liquidation penalty (fixed by Davos governance) <b>13% of Debt</b>

<p>Debt to cover in the auction          borrowed amount *          liquidation penalty = 13*1.13          = \$14.69</p>	<p>Buf (percentage similar to          liquidation penalty, fixed by          Davos governance)  <b>2%</b></p>	<p>Starting auction price (top)          current_collaterral_unit_          price * buf = 1.8 * 1.02 =          \$1.836</p>
<p>Somebody triggers auction          and gets tip + chip as          a reward for doing it</p>	<p>Auction starts and the          price gradually decreases.          Liquidator can participate          to buy customized amount          of liquidated collateral</p>	<p>Tau (time until price is 0;          fixed by Davos governance))  <b>e.g. 3600</b></p>
<p>Dur (fixed by Davos          governance)          time in seconds elapsed          since the auction start,          e.g. 600</p>	<p>Linear decrease of price          (subject to be disrupted at          the below event)  <math>top * ((tau - dur) / tau) =</math>  <math>1.836 * ((3600 - 600) / 3600)</math>          = \$1.53</p>	<p>Pause auction because of          one of two conditions:</p> <ul style="list-style-type: none"> <li>— tail (specific amount              of time elapsed; fixed by              Davos governance)</li> </ul> <p>OR</p> <ul style="list-style-type: none"> <li>— cusp (% of price drop;              40% start auction price;              fixed by Davos governance)</li> </ul> <p><b>Either requirement is met,              the auction will be restarted</b></p>
<p>Wait till someone restarts          auction</p>	<p>Tip (flat fee; fixed by Davos          governance))  <b>\$300</b></p>	
<p>Chip (dynamic fee; fixed by          Davos governance))          0.1% of amount of debt in          the auction</p>	<p>Restarter gets tip + chip as          a reward</p>	

## Example (Different Collateralization Ratios and Impact on Rewards)

Collateral	\$100,000
Av. Borrow / Total Collateral	30.00%
Total Borrow	\$30,000
Target Borrowing Rate	1.00%
Av. Staking Rewards from Collateral	5.00%
<b>Annual Revenue</b>	<b>\$5,300</b>
Corporate Treasury	5%
Reserve Pool	5%
Stable Asset Staking rewards	60%
Stable Asset Liquidity Mining rewards	30%
<b>Total Revenue Allocation</b>	<b>100%</b>
Percentage Stable Asset staked	80%
Percentage Stable Asset in liquidity pools	20%
<b>Stable Asset staking rewards</b>	<b>13.25%</b>
<b>Stable Asset liquidity mining</b>	<b>13.25%</b>
Av. Trading Fee APY Liquidity Pools	0%
Farming rewards Liquidity Pools	0%

Collateral	\$100,000
<b>Av. Borrow / Total Collateral</b>	<b>50.00%</b>
Total Borrow	\$50,000
Target Borrowing Rate	1.00%
Av. Staking Rewards from Collateral	5.00%
<b>Annual Revenue</b>	<b>\$5,500</b>
Corporate Treasury	5%
Reserve Pool	5%
Stable Asset Staking rewards	60%
Stable Asset Liquidity Mining rewards	30%
<b>Total Revenue Allocation</b>	<b>100%</b>
Percentage Stable Asset staked	80%
Percentage Stable Asset in liquidity pools	20%
<b>Stable Asset staking rewards</b>	<b>8.25%</b>
<b>Stable Asset liquidity mining</b>	<b>8.25%</b>
Av. Trading Fee APY Liquidity Pools	0%
Farming rewards Liquidity Pools	0%





DAVOS