Many thanks to @SebVentures, @balloonist, @Aes, equanimiti, @adcv

Following the template of the successful MakerDAO Open Market Committee, we propose to introduce the MakerDAO Asset-Liability Committee (ALCO) PPG which will follow the now deprecated MIP46. It doesn't hold any formal governance power on MakerDAO, doesn't participate in any governance structures set up by Atlas and only provides recommendations and guidance that MakerDAO governance can follow or not.

In the future, this (Digital) ALCO could adopt a formal governance role, such as becoming a Stability Scope Advisor, for example, depending on community feedback and suitability to the requirements of the role.

An Asset-Liability Committee (ALCO) is a term borrowed from traditional finance. There, it represents the main executive committee which oversees a financial institution's balance sheet risk management and asset-liability management (ALM) policy. It is responsible for setting and implementing ALM parameters.

When the scope of MakerDAO governance can be limited to parameter tuning rather than full-blown allocation decisions, by working to limit the scope of MakerDAO governance to AI-automated parameter tuning, if any, we can eventually disband the ALCO PPG

Objective

1. Learn from and iterate on traditional financial practices to demonstrate the areas where transparent financial policy setting can represent an improvement to stability and safety versus the status quo
2. Invite external opinions on the coherence of MakerDAO's core and AllocatorDAO allocation strategy with sound asset-liability management principles
3. Develop rules and requirements for automating and minimizing Stability Scope governance through simple parameters and AI-friendly rules

Scope

The Committee scope will revolve around developing Asset-Liability Management frameworks for MakerDAO, including recommendations on:

- Recommending the kinds of assets to onboard/offboard for MakerDAO and/or various relevant subDAOs;

- Classifying the structure of circulating Dai
- Recommending policies for managing the liability side including the need for capital or the structuring of maturity of the liabilities (termDAI, noticeDAI, …);
- Developing rules to automate allocation between assets
- Developing a framework to define the amount of capital needed (junior capital at the AllocatorDAO level)
- Developing a framework to define the liquidity profile of assets and liabilities
- Developing a framework for how much surplus liquidity the protocol may need to address sudden outflows (liquidations of investments)

Identity

PPG-ALCO-1

MakerDAO ALCO

also referred simply as the Committee in the produced work

Members and conflict of interest

- @adcv, Chairman of the meetings, has independent business relationships as a@steakhouse co-founder
- Moorad Choudhry, independent advisor, currently a Non-Executive Director at two UK FIs
- @SebVentures, has independent business relationships as a@steakhouse co-founder
- @balloonist, has independent business relationships through Balloonist ApS

Introduction to Prof. Choudhry

Moorad Choudhry is an Honorary Professor at University of Kent Business School and a non-executive director at two UK financial institutions. He was latterly Treasurer, Corporate Banking Division at The Royal Bank of Scotland. He began his career at the London Stock Exchange in 1989.

Moorad is a Fellow of the Chartered Institute for Securities & Investment, a Fellow of the London Institute of Banking and Finance, a Fellow of the Global Association of Risk Professionals, a Fellow of the Institute of Directors and a Freeman of The Worshipful Company of International Bankers.

Many others have engaged with his extensive bibliography, including such bangers like “The Handbook of European Fixed Income Securities”, “Analysing and Interpreting the Yield Curve” or “Bank Asset and Liability Management”. A great primer is “The Moorad Choudhry Anthology” (Amazon). A second edition of his landmark title, “The Principles of Banking” Amazon), has been available since last year and is highly recommended for all stablecoin nerds.

Steakhouse Chefs have been basing their research and ALM proposals on his work for some time, in particular and among others:

- ALM framework for MakerDAO
- Towards taking asset risks
- MakerDAO ALM forecast
- Build your own ALM model

On the back of this work, we are thinking about how to advance this framework that has worked so well so far, to a stage where we can minimize and remove human intervention, and automate as much as possible or leave it to AI:

- Algorithmic ALCO Policies
- (from @hexonaut): Endgame Asset & Liabilities Management

We reached out to Prof. Moorad to see if he would be willing to participate in an experiment in crafting decentralized ALM policy for a stablecoin. He has kindly agreed and we are setting the stage for an ongoing engagement with the MakerDAO community to provide unbiased perspectives into the balance sheet development of our protocol. Prof. Moorad is acting in

the capacity of independent advisor and has no stakeholder position in the protocol.

Together with Prof. Moorad, the Committee reviewed the capital model and decided to keep it as it is, as representative of the capital need for the MakerDAO balance sheet.

→ ALM Model 2023-08-23

Background

What is the objective of a stablecoin?

→ Maximize net P&L

By expressing things as 'maximize profits in the absolute', ALCO policy can step outside of the political game of deciding what to do with those profits. It's also something everyone can agree on. MakerDAO is embarking on an Endgame restructuring precisely because of governance paralysis.

Rather, for a decentralized stablecoin, we recognized there could be myriad other primary goals, even if not defined explicitly (such as incentivizing the creation of clean money or offering a stable transaction currency in a volatile fiat currency market).

Therefore, we realized that the best course of action for ALM policy for a decentralized stablecoin would be to not try and interfere with the objective setting, if any, and instead focus on producing policy that enables the objectives of token holders to be met, whatever they may be.

What is the fundamental equation to solve in ALM?

→ Maximize net P&L under the constraints of solvency and liquidity

The definition we suggested in February 2022 still holds:

"We define Asset-Liability Management (ALM) as the tools and processes for optimizing the balance sheet to maximize token holders' profits while being constrained by a defined risk appetite divided as solvency and liquidity."

The main driver for balance sheet revenues are stability fees. Now that the MakerDAO protocol has a way to invest in US treasuries, the benchmark should be the effective equivalent rate, namely SOFR or the 3mo term. SOFR, for instance, is overnight, so very short-term, and resembles a lot of the characteristics of MakerDAO's crypto vaults, including collateralization. This is what the benchmark for all crypto-vault collateral should be, as the base value is USD.

What factors should governance consider when managing liquidity?

→ Consider mitigating liquidity risk with term-lockups

At a maximum, MakerDAO governance could assume that 100% of its liquidity needs to be available for redemption to mitigate this risk. However, this would slow the accumulation of net P&L and expose the protocol to overwhelming counterparty and undercollateralization risks.

An orthodox methodology for determining a balance sheet's liquidity exposure is to look at a backtested maximum drawdown in liquidity over historical worst-case scenarios in the past. Our current framework is to look at the varying categories of maximum drawdown in 1 block, 1 day and so on. The methodology is explained here. Live charts of circulating Dai by category can be seen in the following Dune query.

You can use this categorization of liabilities to allocate asset durations on the other side of the balance sheet. Namely, if you have $2.7bn Dai at 1-year behavioral tenor, you could conclude that you could invest up to $2.7bn in assets that have maturity longer than 1-year.

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A better approach to setting the liquidity profile in stone would be to change the capital structure with term deposit accounts. For instance, you could offer a time-locked ERC-4626 st-sDAI vault with a lockup period and a bonus DSR rate on top of the instantly liquid DSR rate. It's a good way to mitigate the risk and incentivize Dai users with a lower time preference. In practical terms, if 20% of circulating Dai were locked in 9mo st-sDAI vaults, MakerDAO could significantly reduce the size of the PSM and thereby offer a higher DSR.

What factors should governance consider when managing solvency?

→ MakerDAO has a current capital gap of ~72m DAI

Banks hold surplus buffers of capital to withstand, in a probabilistic sense, potential losses to the balance sheet from solvency risks materializing. Basel I is a simple framework that applies a cutoff of 8% of expected credit losses based on a lognormal distribution of outcomes. Banks also reserve some amount of capital for operational risk but the heuristics are largely finger in the air. Crypto doesn't have the same 1:1 operational risks but still has some, for e.g. bad decision making, smart contract risk, fraud, malpractice, etc.

The framework could basically apply a single number to capture all of these risks in a linear combination. To date, we have called it Capital at Risk, or CaR. This framework is more general than just MakerDAO. For example, tokenized MMFs could apply this framework to show some small amount of operational risk even if their credit risk is 0 or near 0.

From the perspective of total credit and counterparty risk, MakerDAO faces solvency risk exposure almost everywhere. Even USDC, a regulated and presumably collateralized fiat stablecoin, has had episodes of market price discounts from uncertainty over the robustness of Circle's balance sheet.

Using this method and the linked orthodox ALM methodology, MakerDAO should be reserving 124m DAI. However, its current surplus buffer is 52m DAI.

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The committee therefore recommends lifting the line for MKR burns to the value of the capital at risk and consider only burning when the surplus buffer is above 124m DAI.

Ongoing work objectives

- How should MakerDAO set the DSR rate?
- How should MakerDAO define term-lockups?
- Develop ALM Policy scorecards
- Design requirements for automations for ALM policy outcomes

Community calls

- To be planned and announced