

Hey everyone, I'm Nicole Maffeo the cofounder of SIZE Markets which is an on-chain OTC protocol.

One of our core devs (@mevcheb) has a proposal to enhance the AAVE Safety Module by incorporating SIZE's on-chain sealed-bid auction mechanism to facilitate the efficient liquidation of staked AAVE tokens in the event of a Shortfall. While an auction module has been outlined in the Aavenomics model, it currently remains undeveloped. SIZE offers a ready-made solution.

## Introduction

The AAVE Safety Module has been a fundamental component of the Aavenomics model since its inception in V1. It is essentially a permissionless insurance product that underwrites against bad debt held by the protocol in exchange for a yield on staked AAVE tokens. In fact, just recently, the protocol incurred a \$1.4mm loss due to an attack that generated 2.7mm of bad CRV debt. [CoinTelegraph](#). In the case of such a Shortfall Event, up to 30% of the stkAAVE (AAVE tokens staked in the Safety Module) can be sold off to fill the bad debt gap. If more stkAAVE is needed, AAVE tokens will be issued by governance and auctioned off until the market is solvent.

## Motivation

While the auction module has been outlined in the Aavenomics model, it currently remains undeveloped leaving questions around how the liquidation auction of staked AAVE will take place. Complicating matters, as of 18 Feb 23 there are approximately 3.2mm AAVE tokens worth upwards of \$290mm USD tokens staked [in the Safety Module contract](#), with only a fraction of that amount available in on-chain liquidity. 1inch aggregator's quotes -14% of slippage for trades of only 100k AAVE. Attempting to sell significant amounts of the Safety Module stkAAVE would likely result in a poor execution price. Clearly there is a pressing need for an auction module that can efficiently liquidate AAVE on-chain.

Another challenge is 10 day withdrawal time constraint for staked assets. As the entire governance and auction process needs to be completed within this timeframe, users may withdraw their stkAAVE before it can be utilized as insurance collateral. This could potentially disrupt the proposed auction process, and lead to inadequate insurance coverage for the protocol.

Our proposal aims to enhance the AAVE Safety Module by incorporating an on-chain sealed-bid auction mechanism that would facilitate the efficient liquidation of staked AAVE tokens in the event of a Shortfall. To achieve this objective, we have developed a specialized protocol at SIZE Markets that we believe could be ideally suited for this purpose.

## Alternatives

In exploring alternative methods for liquidating stkAAVE, we have identified several options worth considering. We firmly believe sealed-bid auctions are the most efficient and effective route but wanted to give an overview on other options to explain why.

1. Off-chain OTC directly to a market maker
2. AAVE could coordinate with an established market maker to liquidate AAVE tokens at an agreed OTC price. This process is relatively straightforward, and could include a vesting agreement to mitigate additional selling pressure of AAVE.
3. Challenges:

The nature of public governance boards would likely make the trade vulnerable to front-running by speculators, and concerns around centralization and transparency could also arise. This process could also take longer than the 10 day withdrawal period.

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1. TWAP selling on the open market
2. Another option for liquidating stkAAVE involves selling the tokens on the open market using time-weighted average price (TWAP) algorithms through decentralized exchanges such as Uniswap and Sushiswap or aggregators like CoWSwap or 1inch.
3. Challenges:

While this is a well-established approach, it could take days or even weeks to execute due to the lack of on-chain liquidity. Additionally, this prolonged selling process would leave the trades vulnerable to front-running by speculators, leading to a further drop in token price and a decrease in execution quality. Given that the price of AAVE is likely to be already depressed in a Shortfall Event, this method could result in the need for selling more staked AAVE.

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1. A traditional English auction
2. Also known as an open-outcry ascending auction, this is the model used in the older v1 MakerDAO auctions. In this type of auction, each bid must be greater than the previous bid until the auction ends, with the bidders with the highest price trading AAVE for a stable asset like USDC or DAI. One of the key advantages of these auctions is that they can be conducted on-chain with permissionless involvement, which incentivizes all AAVE stakeholders including token holders and investors to participate in the auction and prevent further price depression, while providing deep liquidity for liquidation. Additionally, traders and market makers may also bid on the auction in an attempt to capture AAVE at a discounted price.
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1. A sealed-bid auction
2. Sealed-bid auctions, also known as blind auctions, improve upon open-outcry auctions by hiding the prices of the bids until the auction is completed. After the auction, the bids are revealed and the bidders with the highest bid prices trade their stable asset for stkAAVE. This method allows for an efficient price-discovery process while preventing extractive

MEV, as sophisticated traders cannot watch for bids from a known actor on-chain and front run their bid with a marginal price. Since the tokens are not sold on open market DEXs, more control over the auction process is available. Specific bidders can be whitelisted if a deal is made with known market makers, and custom vesting schedules over the auctioned stkAAVE are also possible.

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## Conclusion

The Safety Module is a critical part of AAVE infrastructure and economics that insures against the many risks the protocol is exposed to. We propose integrating SIZE's sealed-bid auction to the Safety Module for the efficient and flexible liquidation of staked AAVE in a Shortfall Event. This clarity will significantly strengthen the AAVE ecosystem by improving its risk management capabilities and ensuring the stability of the protocol.