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New Asset Listing: wstETH/USDe on GMX v2 Arbitrum

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Summary

Chaos Labs has conducted an analysis at the request of GMX to explore the listing of a wstETH-USDe market on GMX v2 Arbitrum. The recommendation to introduce an ETH-USD market based on wstETH-USDe is anticipated to leverage the popularity of these tokens, potentially driving significant growth for the protocol. Below we outline the potential risks and our parameter recommendations for the launch of this new market.

wstETH

Lido protocols enhance network security by enabling more users to stake ETH. When users stake ETH through the Lido Protocol, they receive stETH tokens, which are fungible and liquid. The total balance of stETH in existence is determined by the total amount of ETH staked via Lido protocols, plus staking rewards minus any slashing applied to validators. stETH rebases daily, meaning a user's stETH balance changes daily as staking rewards are received.

Since some DeFi protocols require a constant balance mechanism for tokens, Lido protocols offer wstETH, a wrapped version of stETH. wstETH maintains a fixed token balance for users, utilizing an underlying share system to reflect received staking rewards. Currently, there are 3.35 million wstETH tokens worth $11.8 billion.

USDe

USDe is an asset minted using BTC, ETH, ETH LSTs, and USDT as collateral. This collateral is hedged on centralized exchanges, generating yield when funding rates are positive. However, this yield accrues to sUSDe, not directly to USDe, similar to the mechanism of wstETH. Unstaking sUSDe involves a 7-day cooldown, while redeeming USDe has no cooldown, though a multi-sig controlled by Ethena can set maximum redemptions per block. Therefore, USDe functions similarly to overcollateralized stablecoins, albeit with additional complexities and risks.

Currently, USDe tokens worth $3.6 billion have been issued.

Concerns

Significant LST Depeg

- Permanent LST Depeg:

A permanent LST depeg could occur due to extreme validator slashing, hacks, or other unforeseen events, leading to USDe becoming under-collateralized.

- Liquidation of Ethena Hedges:

In the event of a significant depeg (which is highly improbable given the current split between LSTs, ETH, and USDT), Ethena's perpetual short positions on CEXes could be liquidated.

- Mass Redemptions for USDe:

If Ethena faces mass redemptions for USDe, it could result in crystallizing losses if the protocol is required to sell an LST when it is under the peg. The primary market activity should ideally use USDT, with ETH as backup, and LST only utilized when a large proportion of USDe is redeemed within a short timeframe.

LSTs only represent 10% of USDe currently, which decreases the effect of those scenarios.

Persistent Negative Funding Rates

- Insufficient Market Size:

The perpetual market might be too small to absorb Ethena's open interest, especially during periods of persistent negative funding rates.

- Drain on the Insurance Fund:

A prolonged period of negative funding rates could drain Ethena's insurance fund.

- Natural Movement to Negative Funding Rates:

Ethena's short open interest could cause funding rates to move into negative territory.

Looking at the peg of USDe, we can see that it did not have a depeg of more than 2% over the last 6 months.

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USDe Daily Price Change (%)

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wstETH Arbitrum Liquidity

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wstETH has vast liquidity on Arbitrum. However, there is currently no other liquidity source for USDe on Arbitrum. Therefore, more conservative parameters will be used for swapping USDe on GMX than other assets.

For the wstETH-wETH swap pool, parameters could be set so that with a $1M pool and under 10% imbalance, the price impact would be 13 basis points (bps).

For the wstETH-USDe and USDe-USDC pools, we recommend setting parameters such that a 1% imbalance in a $1M pool would result in approximately 21 bps, while a 10% imbalance would lead to 75 bps.

In an extreme scenario where the price of ETH drops significantly and there is large utilization for short positions, resulting in high profits for short traders, a depeg in the USDe price could lead to the pool lacking sufficient funds to cover PnL. However, given GMX v2's track record of maintaining low open interest (OI) imbalance in highly utilized markets, as demonstrated in the ETH-USD market below, and the unlikelihood of a depeg beyond $0.90, we recommend setting an initial open interest reserve factor of 0.9, which could increase in the future as the open interest on this market proves to maintain low imbalance as well.

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Histogram of long-short open interest skew on WETH-USD market on GMX v2 Arbitrum.

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Due to the aforementioned factors, we recommend implementing values that minimize potential risk to the protocol in the scenarios described, similar to the parameters suggested for other synthetic markets, with adjustments due to the high correlation between the pool assets. Particular attention should be given to setting caps for the pool value, as significant exposure to these tokens relative to their market supply could expose the protocol to risks. Additionally, we provide recommendations for supporting swap markets, specifically wstETH-ETH and USDe-USDC.

Recommendations

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Recommendations

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