Revised Risk Assessment of gOHM FiRM Market (July '23)

Summary

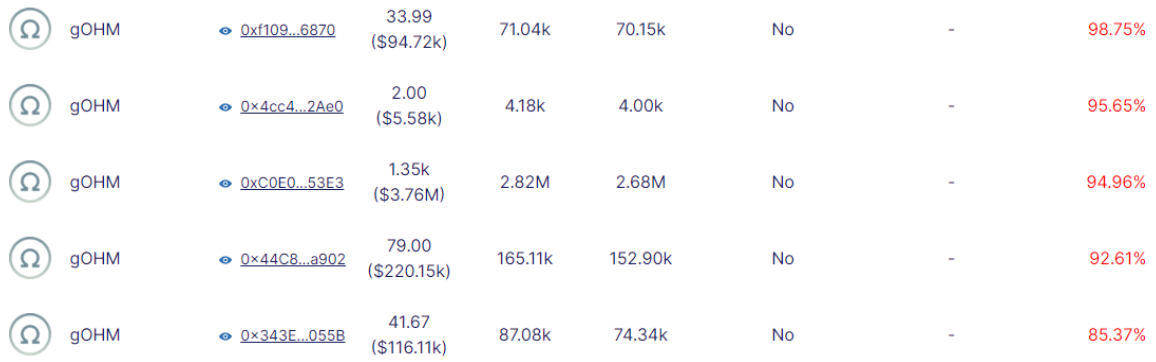
Market	Total Asset Score	Collateral Factor	Liquidation Factor	Supply Ceiling	Daily Borrow Limit
gOHM	7.26	80%	75%	7,000,000	500,000

Useful Links:

- RBS Explainer - https://docs.olympusdao.finance/main/overview/range-bound/
- RBS Dashboard - https://dune.com/spoysp/olympus-rbs-dashboard
- OHM LP Metrics - https://dune.com/spoysp/ohm-lp-metrics
- RFC: Change RBS minimumPriceTarget logic to accommodate Cooler Loans - https://forum.olympusdao.finance/d/3594-rfc-change-rbs-minimumpricetarget-logic-to-accommodate-cooler-loans
- TAP-28: Cooler Round 2 - https://snapshot.org/#/olympusdao.eth/proposal/0x71aed677469164eb5137ddd755f9ae6928bdede59eeaf9ccba30f7d315808d8e

Background

The gOHM market is FiRM's 3rd most utilized market, with $6.88M in deposits and $4.05M in borrows, and the market with the most unique open positions, 17. gOHM FiRM users also have, on average, the highest borrow limit %, at 86.56% (see screenshot below), signaling confidence in the asset and appetite to borrow. Since its inception, the gOHM market has undergone one parameter adjustment via governance proposal #108. This approach allows the Risk Working Group to propose periodic parameter adjustments to existing markets based on a variety of factors including utilization of the market, changes in risk profile of the underlying asset, etc. Proposed changes might include adjustments in collateral factors, daily borrow limits, liquidation factors, and market supply ceilings and are made to attract new users whilst still maintaining stability and security of the platform.



Methodologies

Asset Scoring Model

The Analytics Working Group, in close collaboration with the Risk Working Group, has devised a comprehensive, in-house asset scoring model. This framework evaluates the relative "risk" of any asset, using wETH as a benchmark, by considering six essential factors:

- market capitalization,
- trading volume,
- price volatility,
- token distribution,
- project fundamentals; and
- token utility.

We derive the Total Asset Score (TAS) by using the following formula :

$$TAS = 0.2 * (MCS + PFS + TUS) + 0.15 * (TVS + PVS + TDS) + 0.1 * PFS$$

Where:

- MCS : Market Capitalization Score

$$MCS = min(10, (Token\ Supply * Token\ Price * 200) / (wETH\ Supply * wETH\ price) * 10)$$

- TVS : Trading Volume Score

$$TVS = min(10, (30\ Day\ Avg\ Token\ Trading\ Volume / 30\ Day\ Avg\ wETH\ Trading\ Volume) * 10)$$

- PVS : Price Volatility Score

$$PVS = min(10, 10 - (Token\ Log\ Price\ Volatility / wETH\ Log\ Price\ Volatility) * 9)$$

- TDS : Token Distribution Score

$$TDS = min((1 - Token\ Gini\ Index) * 10 / (1 - wETH\ Gini\ Index); 10)$$

- PFS : Project Fundamentals Score

Subjective evaluation (1-10) based on team experience, technology, and roadmap

- TUS : Token Utility Score

Subjective evaluation (1-10) based on token use cases and functionality

The weights were determined based on the relative importance of each factor in evaluating token risk. As we build out a registry of TAS for a variety of collateral options and match them with findings from other risk profiling frameworks and methodologies, the RWG will be able to rely more and more on the Asset Scoring Model.

RWG Risk Assessments

Risk Assessments conducted by the Risk Working Group (RWG) serve to identify, evaluate, and prioritize risks associated with a specific entity, protocol, collateral, or initiative. The purpose of these assessments is to provide a comprehensive and objective analysis of potential risks and their potential impact on Inverse Finance. This information can then be used to inform risk management strategies and decision-making processes, helping to mitigate or minimize the identified risks. Past assessments include:

- Risk Assessment gOHM Collateral on FiRM
- Risk Assessment of Active FiRM Markets (Apr '23)

Parameter Recommendations

Parameter recommendations for new markets and changes to existing markets on FiRM are the end result of RWG Risk Assessments and include suggested values for various risk parameters such as the supply ceiling, the collateral factor, daily borrow limit, the liquidation factor, etc. These recommendations serve as a starting point for an informed conversation amongst core contributors and community members alike of Inverse Finance DAO. By providing clear parameter recommendations, the RWG helps to ensure that new markets added to the FiRM protocol are appropriately risk-managed and able to operate in a safe and sustainable manner. This helps to protect the protocol and its users from potential losses and enables the protocol to continue to provide innovative and valuable fixed-rate lending services to the DeFi community.

gOHM Market

Asset Scoring Model

July 25th, 2023: The RWG evaluated gOHM making use of our in-house comprehensive asset scoring model. This framework evaluates the relative “risk” of gOHM as an asset, using wETH as a benchmark, by considering six essential factors: market capitalization, trading volume, price volatility, token distribution, project fundamentals, and token utility. A breakdown of the Total Asset Score (TAS) follows:

Component	Link/Rationale	Score
Market Capitalization	MCS=min(10, (gOHM Supply * gOHM Price * 200) /(wETH Supply * wETH price)	5.08
DEX Trading Volume	TVS =min(10, (30 Day Avg Token Trading Volume * 200 / 30 Day Avg wETH Trading Volume)	0.58
Price Volatility	PVS =min(10, 10 - (Token Log Price Volatility / wETH Log Price Volatility) * 9)	9.91
Token Distribution	Token Distribution Score = min((1- Token Gini Index) * 10 / (1 - wETH Gini Index);10)	10.00

Project Fundamentals	Risk Assessment gOHM Collateral on FiRM - See Protocol Analysis, and Audits & Bug Bounties Sections	8.36
Token Utility	Risk Assessment gOHM Collateral on FiRM - See Collateral Analysis Section	10

Total Asset Score

$$TAS = 5.08 * 0.2 + 0.58 * 0.15 + 9.91 * 0.15 + 10 * 0.1 + 8.36 * 0.2 + 10 * 0.2$$

$$TAS = 7.26/10$$

gOHM scores exceptionally in all categories except *DEX Trading Volume* and *Market Capitalization.* From this we can draw the following conclusions:

1. Price Volatility: A high score in price volatility suggests that gOHM price experiences minimal fluctuations or instability compared to the benchmark (wETH). This volatility indicates a lesser level of risk associated with gOHM's price movements.
2. Token Distribution: A high score in token distribution indicates that gOHM tokens are well distributed amongst numerous holders or addresses, potentially resulting in an even distribution of ownership. This distribution speaks to the asset's decentralization, market stability, and deep liquidity.
3. Market Capitalization: A medium score in market capitalization suggests that gOHM has a small overall market value relative to wETH. A lesser market capitalization indicates that gOHM has yet to attain a considerable level of adoption or popularity.
4. Trading Volume: A low score in trading volume indicates that gOHM experiences minimal levels of trading activity compared to wETH. Lower trading volume generally implies poor liquidity and market interest, making it harder for investors to buy or sell gOHM without significant price impact or slippage. This is also important in the context of liquidations. gOHM's Trading Volume score is close to zero, this will be further explored in the *Slippage/Price Impact Sims* section below.
5. Project Fundamentals: A high score in project fundamentals suggests that gOHM's underlying project has strong attributes, such as an experienced team, solid technology, and a promising roadmap. This positive evaluation indicates that the project has a strong foundation and potential for success.
6. Token Utility: A high score in token utility implies that gOHM's tokens have diverse use cases and functionality within the associated ecosystem. The higher the score, the more versatile and valuable the tokens are perceived to be. Token utility is essential as it reflects the demand and practical applications of gOHM within its ecosystem.

Slippage/Price Impact Sims

Liquidators will be required to use the OHM staking contract to unwrap gOHM. Liquidity is available for liquidators on Balancer in the form of two pools; OHM/WETH ($6.3M TVL) and OHM/DAI ($13.7M).

TVL in the two deepest LPs has been declining rapidly since May 2023. Cumulatively, TVL is down 67% since when the RWG conducted its revised risk assessment on gOHM in April 2023. This decline has resulted in a significant change in slippage and price impact simulations, as shown below.

Trade	OHM	DAI	DOLA	Slippage	Price Impact (%)
$100,000	9398	99580	99801	0.2%	1.97%
$250,000	23496	249459	249991	0%	4.81%
$500,000	46992	494236	495236	0.95%	9.28%
$1,000,000	93984	951998	953733	4.63%	17.32%
$2,000,000	187969	1724051	1726641	13.67%	30.51%
$4,000,000	375939	2530175	2533175	36.67%	48.93%
$6,000,000	563909	2556853	2559859	57.34%	60.90%
$8,000,000	751879	2808403	2811434	64.86%	69.11%

When studying slippage and price impact of large OHM trades, it's important to remember RBS, Olympus' flagship range bound system designed to keep OHM price within a specific band defined by treasury holdings. This system consequently may address upward and downward price manipulation (see: *RBS Explainer*). We have been assured by Olympus team member Relwyn that RBS is still operational, albeit dormant due to OHM price having been in range for several months now (see: *RBS Dashboard*).

Relwyn also commented on our liquidity concerns, justifying the treasury's actions to retract liquidity in the Balancer LPs in response to OHM trading volume shrinking (see: *OHM LP Metrics*). They have stated willingness to increase PoL if trading volume increases, however this would be a reactive measure and not one that would prevent any spike in activity or malicious attempt (e.g. price manipulation). The case where a flashloan attack would supersede the RBS system is addressed by our usage of Chainlink oracle, as a single block flashloan won't manipulate the price feed.A malicious actor could still fulfill the daily borrow limit on the gOHM market on FiRM if it's economically feasible for them to do so (multi-block). So long as the daily borrow limit remains "low" in relation to the liquidity depth in the Balancer LPs, and the "ammo" Olympus have set aside for the floor of the RBS is deep, this malicious attempt won't be economically feasible.

In response to our line of questioning, team member fbiup brought up Olympus' intent to establish a metric they'll call minimum value liquidity or "MVL". This will be established in a post-Cooler Loans ecosystem and will help the RWG with future decision making regarding FiRM's gOHM market.

Parameter Recommendations

Based on the risk analysis conducted, it is concluded that any increase in market parameters should be carefully evaluated. The present day liquidity picture is sufficient to justify an increase

in the market ceiling to 7,000,000 DOLA and the collateral factor to 80%. The analysis of slippage and price impact figures indicates that after this market ceiling increase, no further adjustments will be made to support higher borrowing limits until deeper liquidity is present. The analysis on price stability and market depth encourage us to recommend a higher collateral factor (from 75% to 80%) but also suggest this to be the limit for the gOHM market for the time being. The strong total utility score, and very high borrow limit % on FiRM, for gOHM further validates the market's confidence and demand for borrowing gOHM. Daily borrow limit will remain unchanged at $500k. We see this parameter as our “first line of defense”, and will recommend a reduction in it if OHM’s liquidity picture further dampens. In that case, the Fed Chair can intervene and remove liquidity to the gOHM market while the parameter change goes through our 5-day governance process.

Regular monitoring of market dynamics, liquidity, and price stability is essential to identify any emerging risks or potential disruptions. Ongoing surveillance and analysis will allow prompt actions to address any issues that may arise. Periodic stress testing of the market under different scenarios should be conducted to assess the resilience of the system and evaluate the impact of increased borrowing activities. Stress testing helps identify vulnerabilities and potential risks that may not be evident in normal market conditions.

Please note that this document serves as a risk assessment and does not constitute final decisions or policy changes. The recommendations should be reviewed and approved by the appropriate stakeholders before implementation.