# RWG - Risk Assessment Methodologies



Risk Governance is tasked with devising assessment methodologies in order to assess/evaluate the risk assumed when implementing new and existing strategies. As the various moving parts at Inverse work towards building up DOLA circulating supply through such facets as: adding new assets to Anchor, injecting DOLA to Rari Fuse Pools, building a system for DOLA fixed-rate lending to other DAOs, and innovating through new products like Inverse Guard, the Risk Working Group (RWG) would like to present one of it's marquee products, the Inverse Risk Model (IRM); a framework designed to analyze, quantify, and standardize risk in the multitude of DeFi activities the DAO takes part in.

In its first iteration, IRM will score assets, money markets, and protocols according to the Safety Score (SS), a metric born from the best practices from peer DAOs and Protocols, mainly Yearn Finance, Beefy Finance, and Rari Capital. RWG will partner with the Analytics Working Group (AWG) to build proprietary tools to improve due diligence and risk management efficiency, accuracy, and reporting, automating where appropriate.

Assets, protocols and Money Markets are analyzed with specific variables using unique parameters orchestrated to account for specific areas of risk. Safer assets, protocols, and markets earn higher scores while more risky or volatile counterparts score lower. Safety Scores are scored out of a total of 1.

| ***Grade*** | ***Score*** | ***Comments*** |
|---|---|---|
| Good | 0.70-1.00 | Healthy |
| Fair | 0.50-0.70 | Requires Monitoring |
| Poor | <0.50 | Failing |

## Scoring Assets

Assets' SS can be used in a multitude of ways. To name a few; It can expedite the assessing of partners, and complement proposals to add new assets to Anchor money market. Its use can justify injections of $DOLA liquidity to various Rari Fuse Pools. Below is the equation used to calculate SS.

$$SS = 0.3M + 0.3L + 0.25V + 0.12S + 0.03T$$

| Metric | Equation | Weight |
|---|---|---|
| Market Cap Ratio (M) | $M = \frac{FDV*1000}{DLI}$, DLI is DefiLlamaIndex. If FDV < $1M, M=0 | 30% |
| Liquidity Ratio (L) | $L = \frac{DEX*10{,}000}{DEFI\ LLAMA\ INDEX}$, DEX is highest liquidity pair | 30% |
| Volatility Ratio (V) | $V = 1 - \sqrt{\frac{Price\ Variance_{30\ days}}{Price}}$ | 25% |
| Swap Ratio (S) | $S = 1$ if 10,000 swaps, else 0 | 12% |
| Transfer Ratio (T) | $T = 1$ if 10,000 transfers, else 0 | 3% |

Market Cap Ratio: If assets hold a market cap of less than $1 million, they are instantly given a 0%. Otherwise, they are compared relative to the DeFiLlamaIndex, which lists assets according to their market caps in DeFi. This is intended to scale with the growth of DeFi.

Liquidity Ratio: a score that aggregates the asset liquidity from the deepest DEX (e.g. Sushiswap, Uniswap). Assets with less liquidity are often more volatile and are more difficult to exchange, thus increasing the risk of the asset.

Volatility Ratio: assets are gauged using variance across a 30-day price range. Assets with more price variance and deviation from the 30-day mean are more volatile, and while they may potentially see the highest jumps in price, these assets are nonetheless more risky to hold than stable assets.

Swap Ratio: a strict variable that measures the number of swaps an asset has seen. If the number of swaps is below 10k, the asset automatically scores a 0% for this variable. This is designed to counter fraudulent assets or newly made assets with little interaction.

Transfer Ratio: Similar to Swap Ratio but with Transfers.

In collaboration with AWG, a query titled "Asset Safety Scores", part of a broader "Inverse Risk Management" dashboard, will be created with the scope of monitoring the 'health' of current and prospective assets to be listed on Anchor, amongst other things. Note: The "Defi Llama index" data is

updated regularly and would thus require a periodic and manual entry into Dune if we decide to use this metric.

## Scoring Protocols

Below is a list of the various components that compose the SS for Protocols, split between Risk-centric and Protocol-centric components. The SS here is simply the sum of all the individual components.

| ***Risk Component*** | ***Details*** | **Scoring** |
|---|---|---|
| Operational Risk | Does protocol suffer from key-person dependency. (e.g., Daniele Sestagalli, Andre Cronje, etc.)? | Yes: 0<br>No: 5 |
| Competition | Does protocol operate in a space where there is healthy competition? Is it not a “one-of-a-kind”? | Yes: 5<br>No: 0 |
| Market risks | Has protocol addressed market risks inherent to operating their product? (is well set up to survive a prolonged bear market?) | Yes: 5<br>No: 0 |
| Regulatory Risks | Is protocol currently at risk of being shut down by regulators? | Yes: -5<br>No: 5 |
| Governance | Does protocol have a healthy governance process? | Yes: 5<br>No: 0 |
| Token risks | Is a sizeable amount of tokens being held by a less-than-reputable centralized entity or exchange? (at risk of getting hacked, sifugate, etc) | Yes: -5<br>No: 5 |
| Scaling | Does protocol have a healthy public roadmap with a loyal userbase? | Yes: 5<br>No: 0 |
| Monetization | Is protocol generating revenue? | Yes: 5<br>No: 0 |
| Reputational | Does protocol have a positive (or neutral) reputation in the crypto space? | Yes: 5<br>No: -5 |

Note: The total sum of the risk-centric components make up 45% of the SS Protocol.

| **Protocol Components** | ***Details*** | **Scoring** |
|---|---|---|
| Treasury | Defined as the net worth of protocols' treasury assets | >$100M: 8<br>>$10M: 5<br>>1M: 1<br>Else: 0 |
| TVL | Defined by the value locked in protocol (as a MM, YA, etc.) | >$100M: 8<br>>$10M: 5<br>>1M: 3<br>Else: 0 |
| Launch Date | When was protocol launched? | 2+ Years: 6<br>1 + Years: 4<br>6+ Months: 2<br>Else: 0 |
| Native Blockchain | What is the protocol's native blockchain? | Ethereum: 8<br>AVAX, FTM: 5<br>Else: 0 |
| Liquidity | Defined by the deepest stablecoin trading pair on protocols native chain | > $10M: 8<br>> $3M: 3<br>>1M: 1<br>Else: 0 |
| Oracle | Blockchain oracles integrated with protocol's smart contracts | Chainlink: 8<br>TWAP: 3<br>Else: 0 |
| Auditors | Has protocol addressed the potential for smart contract exploits by having their code audited by reputable third-party services? Who was the auditor? | Tier 1: 8<br>Tier 2: 4<br>Tier 3: 2<br>Else: 0 |
| Twitter | How many followers does the protocol have on Twitter? | > 10k: 1<br>Else: 0 |

Note: the total sum of the protocol-centric components make up 55% of the SS Protocol.

The auditor tier list follows:

Tier 1: OpenZeppelin, TrailofBits, Callisto, …

Tier 2: Certik, CryptoManiacs, …

Tier 3: Code4Rena, …

In collaboration with AWG, a Dune query titled “Protocol Safety Scores”, part of a wider “Inverse Risk Management” dashboard, will be created with the scope of monitoring the ‘health’ of current and prospective protocol partners, amongst other things. While this calculation may require manual input for some components, we believe this process can still benefit from streamlining via a Dune query.

## Scoring Money Markets

Lastly, we built out the Safety Score for individual money markets, a scoring tool that will provide an informative metric for evaluating risk in individual markets such as lending on Aave, Compound, Cream, Rari Fuse Pools. This will also allow Inverse to measure risk for its own money markets on Anchor.

$$SS = 0.25(L + SS_{Asset} + SS_{Protocol}) + 0.1(CF + U) + 0.05RF$$

| Metric | Equation | Scoring |
|---|---|---|
| Liquidity (L) | Scored within a range | < 100k = 0%<br><1M = 33%<br><2M = 66%<br>>2M = 100% |
| Safety Score (Asset) | Scored within a range (0-1) | N/A |
| Safety Score (Protocol) | Scored within a range (0-1) | N/A |
| Collateral Factor (CF) | Scored within a range | <0.5 = 100%<br><0.7 = 66%<br><0.9 = 33%<br>>0.9 = 0% |
| Reserve Factor (RF) | Scored within a range | <0.05 = 0%<br><0.1 = 33%<br><0.2 = 66%<br>>0.2 = 100% |
| Utilization (U) | Binary | If Utilization % > 75%, U = 0%, else U = 100% |

## Final Thoughts

The IRM is a work in progress and, as such, will undergo revisions and testing. The RWG is open to all feedback comments. Ultimately, the IRM opens up a variety of new opportunities for the Inverse ecosystem and the RWG is excited to showcase this to our community, and the DeFi space as a whole.