## Chapter 1: Executive Summary

The Rumi Protocol represents the next generation of decentralized finance (DeFi) applications, designed to create a stable, scalable, and transparent foundation for users seeking financial freedom within the blockchain ecosystem. Built on the Internet Computer Protocol (ICP), Rumi Protocol introduces **iUSD**, a decentralized, collateral-backed stablecoin, and **RUMI**, a governance token that empowers participants to shape the protocol's future. By combining innovative stability mechanisms, dynamic collateral management, and a robust governance structure, Rumi Protocol aims to redefine the standards of decentralized financial systems.

### The Need for a Decentralized Stablecoin

Stablecoins are a cornerstone of DeFi, enabling users to interact with blockchain-based applications while mitigating the volatility of traditional cryptocurrencies. However, existing stablecoin solutions often face challenges related to centralization, transparency, and maintaining a reliable peg. iUSD addresses these challenges by employing an over-collateralized model built on the scalability, security, and efficiency of the ICP blockchain.

### iUSD: The Core of Financial Stability

iUSD is a decentralized stablecoin backed by collateral in the form of ICP, ckBTC, and ckETH. To ensure the solvency and resilience of the system, each iUSD is backed by collateral that meets or exceeds a **150% Liquidation Ratio (LR)**. By maintaining a substantial buffer of collateral, the protocol can withstand significant market downturns without jeopardizing the iUSD peg to the US dollar.

Stability is further reinforced through mechanisms like dynamic Liquidation Ratios and Redemption Margin Ratios (RMR). These parameters automatically adjust to market conditions, ensuring that the system remains balanced and responsive, and that iUSD remains a reliable medium of exchange and store of value.

### RUMI: Empowering Governance and Growth

RUMI, the governance token of Rumi Protocol, places the community at the center of decision-making. Token holders can propose and vote on critical protocol parameters, oversee treasury allocations, and guide the strategic direction of the ecosystem. RUMI staking offers participants benefits such as reduced fees, enhanced collateralization options, and governance privileges, incentivizing active involvement in shaping the protocol's evolution.

### Key Features and Innovations

1. **Collateralized Stability:** Every iUSD is backed by robust, over-collateralized positions, ensuring solvency and mitigating the impact of market volatility.
2. **Dynamic Risk Management:** Real-time adjustments to system parameters help maintain stability and protect users' interests.

3. **Comprehensive Governance:** RUMI token holders drive protocol updates, parameters, and financial decisions, fostering a decentralized and community-driven ecosystem.
4. **Scalable Infrastructure:** Built on ICP, the protocol benefits from low transaction costs, high throughput, and seamless integration with both web2 and web3 environments.

### Treasury and Incentive Allocation

The protocol's revenue and tokenomics are designed for long-term sustainability and growth. RUMI's distribution supports a wide range of stakeholders:

- **Core Team:** 15%
- **Angel Investors:** 2%
- **Seed Investors:** 10%
- **Potential Future Hires:** 5%
- **Crowd Sale:** 35%
- **Treasury:** 33% (for staking rewards, liquidity incentives, and ecosystem development)

Revenue from protocol fees—including minting, redemption, and liquidation fees—is reinvested through fee-buyback and burn mechanisms, reducing RUMI's circulating supply and supporting staking rewards. This holistic approach ensures that active participants, governance voters, and liquidity providers are all aligned with the protocol's success.

### Vision for the Future

Rumi Protocol seeks to accelerate the global adoption of decentralized finance by providing a secure, transparent, and user-centric stablecoin. Leveraging the unique capabilities of ICP, the protocol aims to expand iUSD's role as a cornerstone asset in DeFi, enabling seamless integration across platforms, encouraging broader use cases, and empowering communities worldwide.

With its focus on dynamic risk management, community governance, and strategic incentive structures, Rumi Protocol is well-positioned to lead the evolution of decentralized finance, fostering a more accessible, resilient, and inclusive financial ecosystem for all.

## Chapter 2: Introduction

### The Stablecoin Landscape

Stablecoins have become a critical component of the decentralized finance (DeFi) ecosystem, providing a bridge between the stability of fiat currencies and the innovation of blockchain technology. While widely adopted, many stablecoins suffer from significant limitations:

1. **Centralization Risks**: Fiat-backed stablecoins rely on centralized custodians, creating points of failure and potential regulatory scrutiny.
2. **Algorithmic Vulnerabilities**: Algorithmic stablecoins, while decentralized, often lack the robustness to maintain their peg during periods of extreme market volatility.

3. **Scalability Challenges**: Existing systems can struggle to handle rapid growth in demand or integration with emerging blockchain platforms.

These limitations underscore the need for a more resilient, decentralized, and user-centric stablecoin protocol. Enter **iUSD**, the stablecoin at the heart of the Rumi Protocol.

**The Rumi Protocol Solution**

Rumi Protocol combines the most successful elements of existing stablecoin models, while addressing their shortcomings through innovation and the power of the Internet Computer Protocol (ICP). By leveraging an over-collateralized design, automated risk management systems, and a decentralized governance structure, Rumi Protocol creates a stablecoin that is secure, transparent, and scalable.

Key pillars of the Rumi Protocol's approach include:

1. **Over-Collateralization**: Users must lock ICP, ckBTC, or ckETH as collateral to mint iUSD, ensuring the system maintains solvency even during market downturns.
2. **Dynamic Risk Management**: Advanced mechanisms such as Liquidation Ratios (LR) and Redemption Margin Ratios (RMR) adjust in real-time to market conditions, minimizing risk and maintaining the iUSD peg.
3. **Decentralized Governance**: RUMI token holders play an active role in protocol decision-making, fostering a community-driven ecosystem.

**Why the Internet Computer (ICP)?**

The Internet Computer (ICP) offers a revolutionary blockchain environment, providing several unique advantages that make it the ideal platform for Rumi Protocol:

1. **Scalability**: ICP's architecture supports high transaction throughput and low latency, ensuring seamless performance even as the protocol scales.
2. **Low Transaction Costs**: Minimal fees enable cost-effective transactions, benefiting users and incentivizing broader adoption.
3. **HTTPS Outcalls**: ICP's integration with web2 services allows Rumi Protocol to access real-time market data for automated risk management and dynamic adjustments.
4. **Security and Decentralization**: As a decentralized, secure blockchain, ICP ensures trust and transparency across the protocol.

**The Role of iUSD in DeFi**

As a decentralized stablecoin, iUSD aims to serve a variety of use cases within the DeFi ecosystem, including:

- **Lending and Borrowing**: iUSD enables collateralized lending and borrowing, unlocking liquidity for users without requiring the sale of their assets.

- **Yield Farming and Liquidity Provision**: Users can earn rewards by participating in iUSD-based liquidity pools.
- **Store of Value**: iUSD offers a reliable means of preserving value during periods of cryptocurrency market volatility.
- **Payment Solutions**: Its stable value makes iUSD an ideal medium for peer-to-peer payments and cross-border transactions.

### The Need for Governance

Decentralized governance ensures that Rumi Protocol remains adaptive, transparent, and aligned with the interests of its community. Through RUMI token governance, participants can:

- Propose and vote on changes to protocol parameters.
- Allocate treasury funds to development, incentives, and ecosystem growth.
- Guide the evolution of the protocol based on user needs and market trends.

### The Rumi Protocol Advantage

By combining the stability of over-collateralization, the innovation of dynamic risk management, and the scalability of ICP, Rumi Protocol provides a compelling alternative to existing stablecoin models. Its user-centric design and robust governance structure position iUSD as a stablecoin solution that is not only reliable but also future-proof.

### Bridging the Gap

Rumi Protocol aims to bridge the gap between stability and innovation in the DeFi ecosystem, creating a foundation that supports decentralized applications, enables seamless financial interactions, and promotes long-term adoption. Through iUSD and RUMI, the protocol sets a new standard for decentralized stablecoins, offering users a trusted and versatile tool for navigating the financial future.

## Chapter 3: Governance

### The Role of Governance in Rumi Protocol

Governance lies at the core of Rumi Protocol, enabling decentralized decision-making and ensuring the long-term stability, security, and adaptability of the system. The governance framework is powered by the **RUMI** token, which grants holders the ability to propose, discuss, and vote on critical protocol parameters and developments. This decentralized governance structure aligns the interests of the community with the protocol's success, ensuring that Rumi Protocol remains flexible and evolves in response to the dynamic DeFi landscape.

### RUMI Token Overview

RUMI is the governance token of Rumi Protocol, designed to foster community participation and incentivize meaningful engagement. RUMI tokens empower their holders by offering both monetary and non-monetary benefits:

1. **Voting Power**: RUMI holders can vote on protocol upgrades, changes to collateralization thresholds, treasury allocations, and more.
2. **Proposal Creation**: Token holders with a sufficient stake can propose new initiatives or modifications to the protocol.
3. **Protocol Access**: RUMI stakers enjoy reduced protocol fees, enhanced collateralization limits, and early access to new features.

**Governance Structure**

The Rumi Protocol employs a multi-layered governance system to ensure efficiency, transparency, and inclusivity:

1. **Proposal Submission**: Community members can submit proposals for protocol upgrades, parameter adjustments, or treasury allocations. Proposals require a minimum RUMI token stake to ensure they represent significant community interest.
2. **Deliberation Phase**: Submitted proposals undergo a deliberation period, during which community members can discuss and provide feedback.
3. **Voting**: RUMI token holders vote on proposals through a transparent, decentralized mechanism. Each RUMI token represents one vote.
4. **Implementation**: Approved proposals are implemented through automated smart contracts, minimizing delays and manual intervention.

**Staking and Governance Neurons**

To participate in governance, RUMI token holders can lock their tokens to create **RUMI Neurons**, a staking mechanism that aligns incentives and rewards active participants. Key features of the neuron system include:

1. **Staking Rewards**: RUMI Neurons earn rewards based on the staked amount and their level of participation in governance activities.
2. **Lock-Up Periods**: Participants can choose lock-up periods for their RUMI tokens, with longer durations earning higher rewards.
3. **Non-Monetary Incentives**: Neuron holders gain access to premium governance features, such as exclusive proposal rights and elevated voting power.

**Governance Transparency and Security**

The Rumi Protocol governance system emphasizes transparency and security:

1. **On-Chain Voting**: All voting and proposal activities occur on-chain, ensuring immutable records and tamper-proof results.

2. **Public Participation**: Governance discussions are open to all community members, fostering inclusivity and diverse perspectives.
3. **Override Mechanism**: The governance system includes safeguards, allowing the community to address emergencies or unforeseen issues swiftly.

**Community and Ecosystem Growth**

Governance plays a pivotal role in fostering a vibrant and engaged community:

1. **Treasury Allocations**: RUMI token holders decide how to allocate funds for ecosystem development, partnerships, and grants.
2. **Feedback Loops**: Governance mechanisms ensure that community feedback is incorporated into protocol upgrades and new features.
3. **Decentralized Leadership**: The protocol's direction is guided collectively by its participants, reducing reliance on centralized decision-makers.

**Incentivizing Participation**

To ensure active engagement in governance, Rumi Protocol incorporates several incentive mechanisms:

1. **Staking Rewards**: A portion of protocol revenue is allocated to reward RUMI stakers for their participation in governance.
2. **Fee Discounts**: RUMI stakers benefit from reduced fees for protocol services, encouraging long-term participation.
3. **Governance Privileges**: Active participants gain enhanced voting power, proposal rights, and early access to new features.

**The Long-Term Vision for Governance**

The Rumi Protocol governance model is designed to evolve as the protocol grows. Initial decisions and parameters will be guided by the founding team, transitioning to a fully decentralized governance structure as the community matures. This phased approach ensures a balance between stability and innovation, allowing the protocol to adapt to new challenges and opportunities.

By empowering its community through RUMI token governance, Rumi Protocol creates a foundation of trust, transparency, and collective ownership, positioning itself as a leader in decentralized financial systems.

Yes, "protocol's" was meant to be "protocol's." Thank you for catching that! Here's Chapter 4.

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## Chapter 4: Tokenomics

**Token Allocation**

The RUMI tokenomics model is meticulously designed to balance the needs of ecosystem growth, governance participation, and long-term sustainability. The allocation of RUMI tokens is as follows:

1. **Core Team (15%)**: Reserved for the founding team and key contributors, aligning incentives for long-term protocol success.
2. **Angel Investors (2%)**: Early supporters who provided initial funding and strategic guidance.
3. **Seed Investors (10%)**: Investors from the seed round who enabled early development and deployment.
4. **Potential Future Hires (5%)**: Allocated for attracting top-tier talent as the protocol scales.
5. **Crowd Sale (35%)**: Distributed through public sales to ensure broad ownership and decentralization.
6. **Treasury (33%)**: Dedicated to staking rewards, liquidity incentives, ecosystem development, and partnerships.

This distribution ensures the Rumi Protocol's financial sustainability and incentivizes long-term participation.

**Revenue Models**

Rumi Protocol generates revenue through a variety of mechanisms, all designed to create value for the ecosystem and incentivize active participation:

1. **Minting Fees**: A small percentage fee is charged when users mint iUSD, contributing to protocol revenue.
2. **Redemption Fees**: Fees collected when users redeem iUSD for collateral assets help sustain protocol operations.
3. **Liquidation Fees**: When under-collateralized positions are liquidated, a portion of the collateral is collected as a fee.
4. **Stability Pool Fees**: Users participating in the stability pool earn rewards funded by protocol revenue.

Revenue is strategically reinvested to enhance the protocol's ecosystem, fund governance activities, and incentivize user participation.

**Fee-Buyback and Burn**

A key component of the RUMI tokenomics model is the **fee-buyback and burn mechanism**. Protocol revenue is used to purchase RUMI tokens on the open market, which are then burned to reduce the circulating supply. This mechanism benefits RUMI holders by:

- Creating upward price pressure on the token.

- Increasing the scarcity of RUMI over time.
- Aligning protocol growth with token value appreciation.

**Staking Rewards and Incentives**

To encourage active participation, Rumi Protocol allocates a significant portion of its treasury to staking rewards. These rewards are distributed to RUMI stakers who contribute to the protocol's governance and stability. Additionally, stakers enjoy:

- **Fee Discounts**: Reduced fees on protocol transactions.
- **Enhanced Collateralization**: Access to higher Loan-to-Value (LTV) ratios.
- **Priority Governance Rights**: Early access to voting and proposal mechanisms.

**Sustainability and Long-Term Goals**

The tokenomics model prioritizes sustainability by balancing incentives with fiscal responsibility. Treasury funds are managed transparently, with allocations reviewed and adjusted by governance to ensure alignment with the protocol's goals. Key objectives include:

- Supporting liquidity provision during the bootstrapping phase.
- Funding ecosystem growth through partnerships and grants.
- Ensuring sufficient reserves for unforeseen events.

**Treasury Allocation for Revenue**

Revenue collected through fees is allocated as follows:

1. **Stability Mechanisms (50%)**:
    - Liquidations: 30%
    - Bonds: 10%
    - Redemptions: 10%
2. **Incentive Programs (25%)**:
    - Stability Pool Rewards: 15%
    - Liquidity Provision: 10%
3. **Governance & Operations (15%)**:
    - RUMI Neuron Rewards: 10%
    - Protocol Operations: 5%
4. **Reserve Fund (10%)**:
    - Maintained as a buffer for emergencies and systemic risk.
5. **Ecosystem Growth (5%)**:
    - Grants, integrations, and strategic partnerships.

**Summary**

The RUMI tokenomics model reflects a carefully crafted balance between growth, stability, and community empowerment. By aligning incentives for all stakeholders, the model ensures that Rumi Protocol remains adaptable and robust in an ever-evolving DeFi landscape.

## Chapter 5: Protocol Mechanics

### Collateralization and Minting

The Rumi Protocol enables users to mint **iUSD** by locking eligible collateral assets in the system. To ensure stability and protect the protocol from market volatility, a **150% Liquidation Ratio (LR)** is enforced, requiring users to maintain a sufficient buffer of collateral at all times.

1. **Eligible Collateral**:
    - **ICP**: The Internet Computer's native token, leveraging its scalability and security.
    - **ckBTC**: Tokenized Bitcoin on ICP, offering cross-chain compatibility.
    - **ckETH**: Tokenized Ethereum on ICP, providing diversity and interoperability.
2. **Minting Process**:
    - Users deposit eligible collateral into the protocol.
    - iUSD is minted up to **66.67% of the collateral's value**, aligning with the **150% collateralization ratio**.
    - Minting incurs a small fee, which is allocated to the protocol treasury.

This system ensures that every iUSD is over-collateralized, maintaining user trust and the stability of the stablecoin.

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### Liquidation Mechanism

Liquidation serves as a safeguard to maintain the solvency of the system and protect iUSD's peg to the US dollar. Positions that fall below the **150% LR** are flagged for liquidation.

1. **Liquidation Triggers**:
    - If the collateral-to-debt ratio (CDR) of a position drops below 150% due to market volatility or excessive borrowing, the position is liquidated.
    - Example: A user with $1,500 worth of collateral who has minted $1,000 in iUSD would be liquidated if the collateral value drops below $1,500.
2. **Liquidation Process**:
    - The protocol seizes the collateral, repays the outstanding iUSD debt, and deducts a liquidation fee.
    - Any remaining collateral is returned to the user.
3. **Stability Pool**:
    - iUSD from liquidated positions is absorbed by the Stability Pool.
    - Stability Pool participants, who deposit iUSD into the pool, earn RUMI tokens and other rewards for providing this essential system stability.

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**Dynamic Risk Management**

The protocol incorporates automated systems to adjust risk parameters dynamically, ensuring stability even during periods of extreme market volatility.

1. **Collateral Price Monitoring**:
    - Real-time price feeds are sourced via HTTPS outcalls to track collateral asset values.
2. **Automated Adjustments**:
    - Liquidation Ratios (LR) can be dynamically adjusted upwards during market stress to maintain solvency and reduce systemic risk.
3. **Governance Oversight**:
    - While automated systems handle most adjustments, governance retains the ability to intervene in exceptional circumstances.

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**Stability Mechanisms**

Rumi Protocol employs multiple layers of stability mechanisms to maintain the peg of iUSD and safeguard user assets.

1. **Over-Collateralization**:
   Every iUSD minted is backed by collateral worth at least 150% of its value, ensuring stability and solvency.
2. **Redemption Margin Ratios (RMR)**:
    - RMR incentivizes redemptions in both over-collateralized and under-collateralized states to stabilize the system.
    - Overcollateralized state (>250%): RMR increases to **101%-102%** to encourage redemptions.
    - Undercollateralized state (<150%): RMR decreases to **95%-99%**, distributing risk while maintaining user trust.
    - Minimum RMR Cap: Set at **90%** to ensure systemic integrity.
3. **Stability Pool**:
    - Participants in the Stability Pool earn rewards in RUMI for absorbing liquidated iUSD debt, helping to maintain the protocol's solvency.

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**Borrower Obligations**

To maintain the integrity of the system, borrowers are responsible for monitoring and managing their collateralized debt positions (CDPs):

1. **Monitoring Tools**:
    - The protocol provides real-time data on collateral ratios and alerts users when their positions approach the **150% LR**.
2. **Maintenance Ratio (MR)**:
    - Borrowers are encouraged to maintain their positions well above the LR to avoid liquidation.
    - Suggested buffer: A collateralization ratio of **200% or more** offers greater protection against liquidation.
3. **Top-Up Features**:
    - Borrowers can easily add more collateral to their positions to prevent liquidation during periods of high market volatility.

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**Summary**

The mechanics of the Rumi Protocol are designed to ensure stability, transparency, and user empowerment. By enforcing a **150% Liquidation Ratio**, dynamically adjusting risk parameters, and incentivizing participation through Stability Pools and rewards, the protocol provides a robust framework for iUSD's stability and scalability. Borrowers, liquidity providers, and governance participants work together to maintain a resilient and user-friendly system.

## Chapter 6: Stability Mechanisms

**The Importance of Stability**

The stability of iUSD is the cornerstone of the Rumi Protocol. By maintaining a reliable peg to the US dollar, iUSD enables users to confidently interact with the DeFi ecosystem without being exposed to the volatility of cryptocurrencies. Stability is achieved through a combination of over-collateralization, dynamic adjustments, incentivized participation, and robust liquidation processes.

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**Multi-Layered Stability Framework**

Rumi Protocol employs several layers of stability mechanisms designed to adapt to changing market conditions and safeguard iUSD’s peg:

1. **Over-Collateralization**
    - All iUSD is backed by collateral assets with a minimum collateralization ratio of **150%**.
    - This ensures that even in the event of significant market downturns, the protocol remains solvent and iUSD retains its value.
2. **Redemption Margin Ratios (RMR)**
    - RMR incentivizes redemptions to maintain system balance:

        - **Overcollateralized State (>250%)**: RMR increases to **101%-102%**, rewarding users for redeeming iUSD when collateral is plentiful.
        - **Undercollateralized State (<150%)**: RMR decreases to **95%-99%**, redistributing the impact of under-collateralization and encouraging faster system recovery.
    - A minimum RMR cap of **90%** is enforced to protect user trust and prevent exploitation.
3. **Dynamic Liquidation Ratios (LR)**
    - The base LR is set at **150%** but can adjust dynamically during periods of market volatility.
    - Example: During a market-wide crash, the protocol may temporarily raise the LR to **160%** to prevent cascading liquidations and stabilize the system.
4. **Fee Structures**
    - **Minting Fees**: Small fees on newly minted iUSD disincentivize over-leverage.
    - **Redemption Fees**: Discourages opportunistic behavior while contributing to protocol reserves.
    - **Liquidation Fees**: Ensures systemic costs are covered during the liquidation process.

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**Real-Time Adjustments with Automation**

Rumi Protocol leverages **HTTPS outcalls** to fetch real-time market data and dynamically adjust stability parameters:

1. **Market Data Integration**
    - The protocol continuously monitors asset prices, collateralization ratios, and market conditions.
    - Data feeds ensure the system responds instantly to changes in market dynamics.
2. **Automated Responses**
    - Adjustments to LR, RMR, and fee structures are automated based on predefined thresholds.
    - This reduces human error and ensures a swift, unbiased response to market events.
3. **Governance Oversight**
    - While automation handles day-to-day adjustments, governance retains the ability to override parameters in exceptional cases.

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**Incentivizing Stability Pool Participation**

The **Stability Pool** is a critical component of Rumi Protocol's stability mechanisms, providing a buffer against liquidation events and ensuring iUSD remains solvent:

1. **Role of the Stability Pool**
    - When a position is liquidated, the outstanding iUSD debt is absorbed by the Stability Pool.
    - Collateral from the liquidated position is distributed to Stability Pool participants.
2. **Participant Incentives**
    - Stability Pool contributors earn rewards in **RUMI tokens** and potentially other assets.
    - These rewards incentivize participation and ensure sufficient liquidity to handle liquidation events.
3. **Risk Mitigation**
    - By distributing risk across many participants, the Stability Pool minimizes the impact of individual liquidation events on the broader system.

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**Safeguards Against Systemic Risk**

Rumi Protocol incorporates several safeguards to protect the system during extreme market events:

1. **Reserve Fund**
    - A portion of protocol revenue is allocated to a **Reserve Fund** to cover unforeseen shortfalls and maintain system solvency.
    - The fund acts as an emergency buffer, preventing systemic failures.
2. **Trigger Mechanisms**
    - Predefined thresholds for collateralization ratios, market volatility, and user behavior activate stability measures such as fee adjustments or temporary parameter changes.
3. **Emergency Governance Actions**
    - In rare cases, governance can implement emergency measures to stabilize the protocol, such as temporarily halting new minting or liquidations.

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**Long-Term Stability Vision**

The Rumi Protocol stability mechanisms are designed not only to maintain the iUSD peg but also to adapt and evolve as the DeFi ecosystem grows. Future enhancements may include:

- Diversification of collateral types to reduce dependency on a single asset class.
- Enhanced algorithmic models for predicting market volatility and adjusting parameters preemptively.
- Partnerships with other protocols to create cross-stablecoin stability solutions.

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### Summary

The stability of iUSD is upheld by a meticulously crafted framework combining over-collateralization, dynamic adjustments, incentivized participation, and robust safeguards. Through real-time automation and active community governance, Rumi Protocol ensures that iUSD remains a trusted and reliable stablecoin for the DeFi ecosystem.

## Chapter 7: Treasury Allocation

### The Role of the Treasury

The treasury is the financial backbone of the Rumi Protocol, ensuring that the system remains solvent, incentivized, and capable of long-term growth. By strategically allocating revenue and reserves, the treasury supports key areas such as protocol stability, user rewards, ecosystem development, and governance operations.

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### Treasury Breakdown

The treasury is divided into five primary categories, each with a clear purpose and allocation percentage:

1. **Stability Mechanisms (50%)**
   Ensures the system remains solvent and stable during normal operations and adverse market conditions.
   - **Liquidations (30%)**: Covers the costs associated with collateral liquidation events, ensuring seamless debt resolution.
   - **Bonds (10%)**: Allocates funds to strengthen protocol solvency during extreme market volatility or systemic risk events.
   - **Redemptions (10%)**: Provides liquidity for redemptions and maintains the peg of iUSD to the US dollar.
2. **Incentive Programs (25%)**
   Encourages user participation in the protocol through rewards and liquidity incentives.
   - **Stability Pool Rewards (15%)**: Rewards Stability Pool participants for absorbing liquidated debt, ensuring the system's solvency.
   - **Liquidity Provision (10%)**: Incentivizes users to provide liquidity for RUMI/iUSD pairs, bolstering trading volume and stability.
3. **Governance & Operations (15%)**
   Supports the protocol's decentralized governance and operational expenses.
   - **RUMI Neuron Rewards (10%)**: Encourages active governance participation by rewarding RUMI stakers.
   - **Protocol Operations (5%)**: Covers essential operational costs, including development, maintenance, and audits.

4. **Reserve Fund (10%)**
   Acts as a financial buffer for unforeseen events or systemic risks.
   - Ensures the protocol can respond effectively to emergencies without disrupting normal operations.
5. **Ecosystem Growth (5%)**
   Fosters innovation and adoption by funding strategic partnerships, integrations, and grants.
   - Provides resources to projects that integrate with Rumi Protocol, expanding its utility and reach.

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**Revenue Streams**

The treasury is funded through various revenue streams, all designed to align protocol sustainability with user participation:

1. **Minting Fees**: A small percentage fee charged for minting iUSD contributes to the treasury's growth.
2. **Redemption Fees**: Fees collected when users redeem iUSD for collateral assets.
3. **Liquidation Fees**: A portion of the seized collateral from liquidations is allocated to the treasury.
4. **Protocol Revenue**: Includes income from partnerships, integrations, and any external investments.

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**Fee-Buyback and Burn**

To support the value of the RUMI token, a portion of treasury revenue is used for **fee-buyback and burn** initiatives:

1. **Market Purchases**: Revenue is used to purchase RUMI tokens on the open market.
2. **Token Burn**: Purchased RUMI tokens are permanently removed from circulation, reducing supply and creating upward price pressure.

This mechanism aligns protocol success with token holder benefits, fostering a healthy token economy.

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**Reserve Fund for Systemic Risk**

The **Reserve Fund** is a dedicated allocation within the treasury designed to handle unexpected events:

1. **Emergency Deployments**: Funds can be deployed quickly to stabilize the system during extreme market volatility or unforeseen crises.
2. **Governance Oversight**: Reserve Fund allocations require community approval to ensure transparency and alignment with the protocol's goals.

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**Ecosystem Growth Initiatives**

A thriving ecosystem is essential for long-term success. The treasury dedicates 5% of its funds to initiatives that drive adoption and innovation:

1. **Grants**: Funding for developers building tools and applications that integrate with Rumi Protocol.
2. **Partnerships**: Resources for collaborations that expand iUSD's use cases and improve liquidity.
3. **Integrations**: Support for integrating iUSD into other DeFi protocols, enhancing its utility and accessibility.

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**Governance and Treasury Management**

RUMI token holders play an active role in treasury management through governance:

1. **Proposal System**: Community members can submit proposals for reallocation of treasury funds, new initiatives, or changes to existing programs.
2. **Voting**: All treasury-related decisions are subject to decentralized voting by RUMI holders.
3. **Transparency**: Treasury balances and allocations are publicly visible on-chain, ensuring accountability.

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**Long-Term Financial Sustainability**

The treasury model is designed for long-term growth and sustainability:

1. **Adaptive Allocations**: Governance can adjust allocation percentages over time to adapt to new challenges and opportunities.
2. **Balanced Spending**: Ensures that funds are used efficiently, prioritizing stability, growth, and user incentives.
3. **Reinvestment**: Revenue generated by the protocol is reinvested into the treasury, creating a self-sustaining cycle of growth and innovation.

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### Summary

The Rumi Protocol treasury is a carefully balanced system that underpins the protocol's stability, incentivizes participation, and drives ecosystem growth. By allocating resources strategically and empowering the community through governance, the treasury ensures the long-term viability and adaptability of the protocol.

## Chapter 8: Incentives and Revenue Models

### Incentivizing User Participation

Incentives are at the heart of Rumi Protocol’s design, fostering active participation, liquidity provisioning, and governance involvement. The incentive mechanisms align user contributions with protocol sustainability, ensuring a vibrant and engaged ecosystem.

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### Stability Pool Rewards

The **Stability Pool** plays a critical role in maintaining the protocol’s solvency during liquidation events. To encourage user participation in the pool, the protocol offers attractive rewards:

1. **RUMI Token Rewards**:
    - Stability Pool participants earn RUMI tokens proportional to their contributions.
    - This creates a direct incentive for users to support the system’s stability.
2. **Collateral Rewards**:
    - When liquidations occur, the collateral seized is distributed to Stability Pool participants, providing additional rewards beyond RUMI tokens.
3. **Dynamic Allocation**:
    - The protocol periodically adjusts Stability Pool rewards to ensure they remain competitive and aligned with market conditions.

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### Liquidity Provision Incentives

To bootstrap liquidity and enhance trading efficiency, the protocol incentivizes the creation of liquidity pools for iUSD and RUMI on decentralized exchanges.

1. **Liquidity Mining Programs**:
    - Users providing liquidity to RUMI/iUSD and other trading pairs earn rewards in RUMI tokens.
    - Early participants in liquidity mining programs may receive higher rewards to encourage initial adoption.
2. **Fee Discounts for Liquidity Providers**:

    - Liquidity providers enjoy reduced transaction fees within the protocol, enhancing their net returns.
3. **Protocol Revenue Sharing**:
    - A portion of the protocol's revenue is redirected to liquidity providers to sustain long-term engagement.

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**Governance Incentives**

Governance participation is a cornerstone of Rumi Protocol, and incentives are designed to encourage meaningful involvement:

1. **RUMI Neuron Rewards**:
    - RUMI holders who stake their tokens to create **RUMI Neurons** earn governance rewards.
    - Rewards are proportional to the staked amount and the duration of the lock-up period.
2. **Priority Voting Rights**:
    - Active governance participants gain enhanced voting power and access to exclusive governance proposals.
3. **Non-Monetary Benefits**:
    - Governance stakers receive benefits such as reduced fees, higher collateralization limits, and early access to new features.

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**Revenue Models**

Rumi Protocol generates sustainable revenue through several key mechanisms, ensuring a self-sufficient and growth-oriented ecosystem.

1. **Minting Fees**:
    - A small percentage fee is charged when users mint iUSD.
    - This fee provides consistent revenue for the treasury while disincentivizing excessive leverage.
2. **Redemption Fees**:
    - Fees are collected when users redeem iUSD for their collateral, contributing to protocol revenue.
    - Redemption fees are dynamic and may decrease during under-collateralized states to incentivize system recovery.
3. **Liquidation Fees**:
    - When a user's position is liquidated, a portion of the collateral is allocated as a fee to the treasury.
    - Liquidation fees ensure the protocol remains solvent and incentivizes users to maintain healthy collateralization levels.

4. **Stability Pool Fees**:
    - Users participating in the Stability Pool pay small fees, which are directed to the treasury to sustain operations.

---

**Fee-Buyback and Burn Mechanism**

The **fee-buyback and burn mechanism** is a central feature of RUMI's tokenomics, aligning protocol growth with token holder benefits:

1. **Market Purchases**:
    - A portion of protocol revenue is used to buy RUMI tokens on the open market.
2. **Token Burn**:
    - Purchased tokens are permanently removed from circulation, reducing the total supply of RUMI.
3. **Benefits**:
    - Creates upward price pressure on RUMI.
    - Rewards token holders indirectly through value appreciation.
    - Ensures a deflationary model that benefits long-term stakeholders.

---

**Discount and Access Model**

RUMI token holders and stakers enjoy unique benefits that go beyond direct rewards:

1. **Fee Discounts**:
    - Reduced minting, redemption, and transaction fees for RUMI stakers.
2. **Enhanced Collateralization**:
    - Stakers gain access to higher Loan-to-Value (LTV) ratios, improving capital efficiency.
3. **Early Feature Access**:
    - Governance participants can test and use new protocol features before they are rolled out to the broader community.

---

**Balancing Incentives and Sustainability**

The protocol is designed to balance short-term rewards with long-term sustainability:

1. **Dynamic Adjustments**:
    - Incentive levels are periodically reviewed and adjusted based on governance decisions and market conditions.
    - Ensures that rewards remain competitive without depleting the treasury.

2. **Revenue Reinvestment**:
    - Revenue generated by fees and operations is reinvested into the treasury to fund incentives, development, and stability mechanisms.
3. **Treasury Oversight**:
    - Governance actively monitors treasury allocations to ensure funds are used efficiently and align with the protocol's goals.

---

**Summary**

Rumi Protocol's incentive and revenue models are intricately designed to foster user participation, maintain system stability, and ensure long-term sustainability. By aligning user interests with the protocol's success, Rumi Protocol creates a thriving ecosystem that rewards active contributors and supports its broader vision for decentralized finance.

## Chapter 9: Use Cases and Vision

**Use Cases for iUSD and RUMI**

Rumi Protocol is designed to serve a diverse range of use cases within the decentralized finance (DeFi) ecosystem, providing value to users across various financial activities.

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**iUSD Use Cases**

**iUSD**, as a decentralized, collateral-backed stablecoin, addresses critical needs for stability and utility in DeFi:

1. **Lending and Borrowing**:
    - iUSD enables users to lock assets and access liquidity without selling their holdings.
    - Borrowers can manage debt positions efficiently while lenders benefit from stable interest payments.
2. **Yield Farming and Liquidity Provision**:
    - iUSD can be deposited into liquidity pools, generating yield through trading fees and rewards.
    - As a stable asset, it mitigates exposure to market volatility, making it an attractive option for yield farming.
3. **Store of Value**:
    - iUSD provides a stable haven during periods of cryptocurrency volatility.
    - Users can hold iUSD to preserve value or hedge against downturns in the broader market.
4. **Payment Solutions**:

    - With its stability and decentralized nature, iUSD is well-suited for peer-to-peer payments and cross-border transactions.
    - Businesses can use iUSD to settle transactions without exposure to fiat or crypto volatility.
5. **Collateral in Other Protocols**:
    - iUSD can be integrated into other DeFi platforms as a trusted stablecoin, enabling advanced financial instruments like synthetic assets and derivative trading.

---

**RUMI Use Cases**

**RUMI**, as the governance token of the protocol, empowers users to participate in decision-making and benefits them through unique utility:

1. **Governance Participation**:
    - RUMI holders can propose and vote on protocol changes, treasury allocations, and ecosystem initiatives.
    - Active governance creates a decentralized and transparent system.
2. **Incentives and Rewards**:
    - Staking RUMI in governance neurons yields rewards, both in the form of RUMI tokens and non-monetary benefits.
    - Stakers also gain fee discounts and enhanced collateralization options.
3. **Liquidity Provision**:
    - RUMI incentivizes users to provide liquidity to trading pairs like RUMI/iUSD, bolstering market efficiency and trading volume.
4. **Fee Discounts and Premium Access**:
    - RUMI stakers enjoy reduced fees across the protocol and early access to new features and integrations.

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**Vision for Rumi Protocol**

Rumi Protocol is built with a long-term vision of becoming a foundational layer for decentralized financial systems. Its key objectives include:

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**1. Widespread Adoption of iUSD**

- **ICP Ecosystem Integration**: As a stablecoin designed for the Internet Computer Protocol, iUSD aims to be the go-to stablecoin for dApps and DeFi platforms within the ICP ecosystem.

- **Cross-Chain Compatibility**: Future upgrades will enable seamless use of iUSD across other blockchains, expanding its utility and user base.
- **Real-World Use Cases**: Partnerships with traditional businesses and payment platforms will drive adoption of iUSD for everyday transactions.

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**2. Expanding the Governance Ecosystem**

- **Decentralized Leadership**: Governance will gradually transition to a fully decentralized model, empowering the community to shape the protocol's future.
- **Collaborative Growth**: Treasury funds will support partnerships, grants, and integrations that align with the protocol's goals.

---

**3. Building a Sustainable Token Economy**

- **RUMI Value Growth**: The fee-buyback and burn mechanism, combined with active governance participation, ensures a sustainable and appreciating token economy.
- **Incentive Alignment**: The tokenomics model incentivizes both short-term and long-term participation, creating a balanced and thriving ecosystem.

---

**4. Enhancing Stability and Risk Management**

- **Dynamic Risk Adjustments**: Continued refinement of stability mechanisms like Liquidation Ratios (LR) and Redemption Margin Ratios (RMR) will enhance resilience to market volatility.
- **Broader Collateral Options**: Diversifying collateral types will reduce reliance on individual assets and improve system robustness.

---

**5. Driving DeFi Innovation**

- **New Financial Instruments**: iUSD will serve as the foundation for advanced DeFi tools, such as synthetic assets, options, and insurance products.
- **Ecosystem Partnerships**: Collaborations with other DeFi protocols will expand the use cases for iUSD and RUMI, enhancing their value proposition.

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**Bridging Decentralized and Traditional Finance**

Rumi Protocol envisions a future where decentralized finance (DeFi) and traditional finance (TradFi) coexist seamlessly. By leveraging the unique capabilities of the Internet Computer Protocol and maintaining a user-focused approach, Rumi Protocol aims to become a trusted bridge between these two worlds.

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**Summary**

Rumi Protocol's use cases and vision position it as a transformative force in the DeFi ecosystem. By offering iUSD as a stable, versatile asset and empowering users through RUMI governance, the protocol paves the way for widespread adoption and long-term sustainability. Through innovation, collaboration, and a commitment to stability, Rumi Protocol is set to redefine the future of decentralized finance.

## Chapter 10: Conclusion and Roadmap

**Conclusion**

The Rumi Protocol represents a transformative step in decentralized finance, offering a stable and transparent foundation for the DeFi ecosystem. Through **iUSD**, a robust, collateral-backed stablecoin, and **RUMI**, a dynamic governance token, the protocol combines innovative stability mechanisms with decentralized decision-making to address the core challenges facing stablecoins today.

By leveraging the scalability and security of the Internet Computer Protocol (ICP), Rumi Protocol ensures low-cost, high-performance operations, setting new standards for stablecoin reliability and utility. The protocol's commitment to over-collateralization, dynamic risk management, and transparent governance establishes a sustainable framework for growth and adoption.

Through active community participation, incentivized engagement, and partnerships within and beyond the ICP ecosystem, Rumi Protocol is positioned to drive DeFi innovation and adoption globally. Its emphasis on trust, decentralization, and adaptability lays the foundation for a thriving and inclusive financial future.

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**Roadmap**

To achieve its ambitious vision, Rumi Protocol has outlined a phased roadmap that balances foundational development with strategic growth initiatives:

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## Phase 1: Foundation and Launch

- **Collateral and Minting Mechanism**: Launch iUSD with support for ICP, ckBTC, and ckETH as collateral assets.
- **Stability Mechanisms**: Implement initial liquidation and redemption mechanisms, including baseline Liquidation Ratios (LR) and Redemption Margin Ratios (RMR).
- **Stability Pool**: Deploy the Stability Pool with incentivized participation through RUMI rewards.
- **Governance Framework**: Roll out the initial governance model, enabling RUMI holders to participate in protocol decision-making.

**Timeline**: Q1–Q2, 2025

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## Phase 2: Ecosystem Integration

- **Ecosystem Partnerships**: Establish integrations with dApps and DeFi platforms within the ICP ecosystem.
- **Liquidity Incentives**: Launch liquidity mining programs for RUMI/iUSD and other trading pairs on decentralized exchanges.
- **Dynamic Risk Management**: Introduce automated adjustments to LR and RMR based on real-time market data via HTTPS outcalls.
- **User Tools**: Develop dashboards for real-time monitoring of collateral positions, Stability Pool participation, and governance activities.

**Timeline**: Q3–Q4, 2025

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## Phase 3: Cross-Chain Expansion

- **Interoperability**: Enable iUSD and RUMI to function seamlessly on major blockchains beyond ICP, including Ethereum and Binance Smart Chain.
- **Broader Collateral Support**: Expand collateral options to include additional assets such as tokenized real-world assets (RWAs) and other stablecoins.
- **Global Adoption**: Launch targeted initiatives to promote iUSD as a cross-border payment solution, bridging DeFi and traditional finance.

**Timeline**: 2026

---

## Phase 4: Advanced Financial Instruments

- **Synthetic Assets**: Build iUSD-backed synthetic assets, enabling exposure to traditional assets, commodities, and indices.

- **Options and Derivatives**: Introduce iUSD-based derivatives markets, expanding use cases and trading opportunities.
- **Insurance Protocols**: Develop insurance products for iUSD holders and liquidity providers, mitigating risks associated with extreme market conditions.

**Timeline**: 2027

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## Phase 5: Full Decentralization

- **Governance Evolution**: Transition governance to a fully decentralized model, with RUMI holders taking full control of protocol operations.
- **Self-Sustaining Ecosystem**: Optimize treasury management to ensure the protocol's financial sustainability and ability to fund future initiatives.
- **End-to-End User Experience**: Enhance the protocol with tools and resources that simplify onboarding, participation, and management for users of all experience levels.

**Timeline**: 2028 and Beyond

---

**The Future of Rumi Protocol**

Rumi Protocol's long-term goal is to become a trusted, indispensable infrastructure layer for decentralized finance. By addressing the challenges of stablecoin reliability, scalability, and governance, the protocol aims to empower users across the globe and create a sustainable financial ecosystem that bridges the gap between blockchain and traditional finance.

Through innovation, collaboration, and a relentless focus on user-centric solutions, Rumi Protocol is poised to lead the next era of decentralized finance, transforming how people interact with money and technology.

Below is an appendix consolidating key mathematical relationships and parameters referenced or implied throughout the Rumi Whitepaper. These formulas help clarify how core metrics (such as collateral requirements, Liquidation Ratios, and Redemption Margin Ratios) are calculated and interact within the protocol.

Below is the Appendix with each formula written in a simple inline LaTeX format (using single dollar signs: `$...$`) instead of display math blocks. This should make it easier for you to manually convert them into your desired format in Google Docs or another tool.

---

**Appendix: Relevant Formulas**

**1. Loan-to-Value (LTV) and Liquidation Ratio (LR)**

*Loan-to-Value (LTV):*
LTV represents the ratio of a user's debt (in iUSD) to the USD value of their collateral.

```
LTV = (Debt (in iUSD) / Collateral Value (in USD)) * 100%
```

In LaTeX:
```
$ \text{LTV} = \frac{\text{Debt (in iUSD)}}{\text{Collateral Value (in USD)}} \times 100\% $
```

$$\text{LTV} = \frac{\text{Debt (in iUSD)}}{\text{Collateral Value (in USD)}} \times 100\%$$

*Liquidation Ratio (LR):*
LR is the inverse measure of how much collateral (in USD) must back a given amount of iUSD debt. The baseline LR for Rumi Protocol is 150%.

```
LR = (Collateral Value (in USD) / Debt (in iUSD)) * 100%
```

In LaTeX:
```
$ \text{LR} = \frac{\text{Collateral Value (in USD)}}{\text{Debt (in iUSD)}} \times 100\% $
```

$$\text{LR} = \frac{\text{Collateral Value (in USD)}}{\text{Debt (in iUSD)}} \times 100\%$$

*Relationship Between LTV and LR:*

```
LTV = 100% / LR
```

In LaTeX:
```
$ \text{LTV} = \frac{100\%}{\text{LR}} $
```

$$\text{LTV} = \frac{100\%}{\text{LR}}$$

For LR = 150%, LTV ≈ 66.67%.

---

**2. Maximum iUSD Minting Given Collateral**

Given LR = 150%, the maximum iUSD ($D$) you can mint from collateral ($C$) is:

```
D = C / (LR/100%) = C / 1.5
```

In LaTeX:

```
$ D = \frac{C}{\text{LR}/100\%} = \frac{C}{1.5} $
```

$$D = \frac{C}{\text{LR}/100\%} = \frac{C}{1.5}$$

---

**3. Redemption Margin Ratio (RMR)**

RMR determines how much collateral you receive per iUSD redeemed.

If `RMR = R%`, then redeeming 1 iUSD yields collateral worth `R% of 1 USD`.

In LaTeX:

```
$ \text{Collateral Received per iUSD Redeemed} = \text{RMR} \times 1\text{ USD} $
```

$$\text{Collateral Received per iUSD Redeemed} = \text{RMR} \times 1\ \text{USD}$$

---

**4. Collateral Requirements for Borrowers**

To maintain at least 150% LR, the required collateral $C$ for a given debt $D$ is:

```
C >= D * 1.5
```

In LaTeX:

```
$ C \geq D \times 1.5 $
```

$$C \geq D \times 1.5$$

---

**5. Fee-Buyback and Burn Mechanism**

If $p$ is the fraction of fees ($F$) allocated to buybacks and $P_{\text{RUMI}}$ is the RUMI price in USD:

```
RUMI Purchased = (p * F) / P_RUMI
```

In LaTeX:

```
$ \text{RUMI Purchased} = \frac{p \times F}{P_{\text{RUMI}}} $
```

$$\text{RUMI Purchased} = \frac{p \times F}{P_{\text{RUMI}}}$$

---

**6. Dynamic Adjustments**

LR and RMR are functions of market conditions $M(t)$:

```
LR(t) = f(M(t)), RMR(t) = g(M(t))
```

In LaTeX:

```
$ \text{LR}(t) = f(M(t)), \quad \text{RMR}(t) = g(M(t)) $
```

$$\text{LR}(t) = f(M(t)), \quad \text{RMR}(t) = g(M(t))$$

---

**Notes:**

- Variables like RMR and fee allocations are determined by governance and can change over time.
- These formulas serve as a base reference for the Rumi Protocol's economic and risk management framework.