

# Cap: A Credit Marketplace Backed by Onchain Financial Guarantees

Cap Labs

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## Abstract

DeFi remains a small fraction of the broader financial market, constrained less by demand than by how capital is allocated. In both traditional finance and decentralized finance, those who decide where capital is deployed are rarely the ones who bear the consequences, producing a persistent misalignment between allocators and the liquidity providers. This paper introduces Cap, an onchain credit platform in which every loan is backed by verifiable financial guarantees. By enforcing allocation via smart contracts rather than discretionary judgment, Cap allows depositors to access institutional credit yield while protecting their principal by escrowed, overcollateralized guarantees.

## 1. Background

Credit is among the oldest and most essential functions of finance. Yet its history is marked by a problem that recurs in every era: the **principal-agent problem**. The parties who decide where capital is deployed are seldom the same parties who bear the loss when it is not repaid. The same problem continues to appear under different guises even today. Decentralized finance, for all its innovation, has largely inherited this flaw rather than fixing it.

### *1.1 Misaligned incentives in capital allocation*

Three structural failures follow from the principal agent problem. First, originators who do not hold the loans they make have little direct incentive to underwrite carefully; growth in assets under management is rewarded more readily than credit quality. Second, underwriting scalability is bottlenecked on a small set of decision-makers, who inevitably overallocate to existing borrowers or originate more than they can rigorously assess. Third, the allocation process is opaque: portfolios are often priced by the same managers who originated them, leaving collateral tracked through self-reporting and misreporting visible only after losses occur.

### *1.2 Three approaches to enforcement*

The defining feature of capital allocation is its method for enforcing yield: who decides who runs which strategies, and what recourse holders have if those strategies fail. Three approaches can be distinguished. **Type I (authoritarian)** designs let a single team select and run strategies; they are simple to operate but offer little recourse and are prone to strategy obsolescence. **Type II (committee-based)** designs delegate allocation to a DAO or committee, improving robustness through diversification but introducing governance latency and the risk that decision-makers can be corrupted. **Type III (self-enforcing)** designs replace discretionary human judgment with rules enforced autonomously by smart contracts. Recourse is verifiable in code, and capital can reallocate without governance delay.

## 2. What Cap Is

Cap is a Type III credit platform in which every loan is backed by onchain financial guarantees. Each loan has a dedicated Underwriter who puts their own capital behind the decision, making honest underwriting the dominant strategy. Allocation distributes across independent specialists rather than a single team, hence rigor scales with the network.

The design follows two principles.

**Verification over trust:** Every guarantee is enforceable by smart contract. Collateral is escrowed onchain so that any Lender can verify their protection in real time.

**Market driven:** Well-designed rewards and penalties minimize reliance on human judgement. Underwriters compete to back the best Borrowers. Borrowers compete for the lowest-cost credit lines. The market sets the price; the code enforces the rules.

A financial guarantee, in this context, is a binding arrangement in which the underwriter guarantees repayment to the lender and the borrower in turn guarantees repayment to both. If the borrower defaults, the underwriter absorbs the loss and retains a right of recovery against the borrower. Onchain, the underwriter escrows collateral that is liquidated automatically upon default to make the lender whole; offchain, a legal agreement preserves the underwriter's recourse against the borrower.

As a result, the mechanism turns otherwise idle alternative assets such as BTC, ETH, and tokenized real-world assets into productive underwriting capital, allowing their holders to capture the yield differential between the dollar and their own asset class without selling the underlying.

### 3. Mechanism

Cap is a marketplace of four participants whose incentives are aligned by construction. Their roles and motivations are summarized in Table 1.

**Table 1. Participants and their incentives.**

Participant	Role	Incentive
<b>Lender</b>	Deposits dollar-denominated assets to mint cUSD; stakes for stcUSD to earn yield.	Earns secured yield at any size, with principal protected by underwriter collateral.
<b>Borrower</b>	Draws reserve assets against underwriter collateral to execute a yield strategy.	Sources on-demand capital and retains surplus yield above the hurdle rate.
<b>Underwriter</b>	Escrows collateral to back a specific borrower and sets the premium per loan.	Earns an underwriting premium on otherwise idle assets.
<b>Liquidator</b>	Liquidates underwriter collateral when a borrower's health factor falls below threshold.	Earns a liquidation bonus up to a predetermined cap.

#### 3.1 How it works

The platform proceeds in five steps. Lenders first **deposit** whitelisted reserve assets into the Cap reserve, minting cUSD that can be staked as stcUSD to accrue yield. Underwriters then **delegate**, escrowing collateral to underwrite a specific borrower in exchange for a premium they set themselves. Borrowers **borrow** against that delegation, drawing reserve liquidity to execute a yield strategy. On **repayment**, the borrower pays the hurdle rate — an aggregate of the underwriting premium and the borrow rate — after which the underwriter earns its premium, the lender earns yield, and the borrower keeps any surplus. Should a borrower act maliciously or its collateral fall sharply in value, the underwriter's collateral is **liquidated** through a permissionless auction and redistributed to the reserve, so that cUSD remains fully backed at all times.

#### 3.2 Why the incentives hold

Because the underwriter's own collateral is the first-loss buffer, it is liquidated before any lender absorbs a loss, and the underwriter therefore prices each guarantee according to risk it personally bears rather than risk diffused across a pool. Each underwriter-borrower pair is isolated and collateral escrowed, so a default in one position cannot cascade to others. Allocation is governed not by a committee but by the market: borrowers self-select in and out depending on whether they can deliver yield above the prevailing benchmark, and capital reallocates without the latency of governance. Safety, in other words, is not promised by the good faith of a team but enforced by code and underwritten by participants who remain fully exposed to their own decisions.