Sereno Street

Elevado Labs
elevado.xyz

Abstract

We propose Sereno Street, a decentralized funds originator on Ethereum. Sereno Street initially introduces four on-chain funds called Sereno Street Funds (SSFs), which issue native assets fully collateralized and denominated in leading decentralized finance (DeFi) bluechip assets: sereUNI, sereLINK, sereHYPE, and sereAAVE. Each fund adheres to a standardized, immutable framework in which deposits and redemptions are subject to fixed fees that are irrevocably reintegrated into the collateral base. This mechanism produces a deterministic and structurally positive trajectory for per-unit collateralization, as fee flows accumulate directly within the reserve. Consequently, each fund-native asset embodies a claim on an increasingly dense pool of UNI, LINK, HYPE, or AAVE, yielding a Net Reserve Value (NRV) that evolves monotonically over time. NRV growth is not dependent on external yield, active management, or discretionary governance; rather, it is an endogenous outcome of each fund's mechanical design.

1 Introduction

As decentralized finance continues its transition from an experimental domain to a core infrastructure layer for global markets, a small cohort of protocol tokens has begun to function as structural digital commodities. Assets such as UNI, LINK, HYPE, and AAVE now underwrite essential services across the on-chain economy – decentralized exchange, high-fidelity decentralized data transmission, non-custodial credit intermediation, and derivatives settlement. Their indispensability to transaction processing, market formation, and risk distribution has elevated them from utility tokens to economically foundational resources in a maturing financial architecture.

This trajectory is reinforced by the ongoing introduction of protocol-level monetary enhancements. Chainlink's formation of a LINK reserve, Hyperliquid's systematic HYPE buybacks, Uniswap governance's new incentive structures for UNI, and AAVE's active buyback programs represent deliberate moves toward strengthened monetary properties: increased scarcity, more predictable supply dynamics, and deeper alignment between protocol usage and token value. These initiatives extend the assets' economic durability and increase their suitability as collateral primitives in higher-order financial constructions.

Sereno Street is conceived within this broader macroeconomic evolution. It establishes a family of decentralized, single-asset reserve funds, each fully collateralized by one of these emergent digital commodities and issuing a corresponding native asset – sereUNI, sereLINK, sereHYPE, and sereAAVE.

Within each fund, deposits and redemptions are subject to immutable fees that are permanently reintegrated into the collateral base, generating endogenous reserve densification. Consequently, the Net Reserve Value (NRV) of each fund-native asset evolves monotonically: its per-unit collateral backing increases deterministically as a function of system interactions. Each fund therefore produces a dual-exposure instrument: holders get exposure to UNI, LINK, HYPE, or AAVE while simultaneously benefiting from the endogenous, mechanical value accretion embedded in the fund's structure.

2 Sereno Street Funds (SSFs)

Sereno Street introduces the Sereno Street Funds (SSFs), a family of decentralized, single-asset reserve vehicles designed to issue native assets backed entirely by a corresponding DeFi bluechip – UNI, LINK, HYPE, or AAVE.

Each SSF maintains a fully transparent and immutable collateral pool, and all native assets inherit the denomination of the underlying reserve. This ensures that economic value is expressed directly in units of the collateral asset rather than through an external valuation benchmark or fiat-equivalent reference – fully oracleless.

Within each SSF, deposits of the collateral asset mint new units of the fund-native asset according to the conversion ratio $\theta_t = \frac{C_t}{S_t}$, where C_t is the total collateral held by the fund at time t and S_t is the circulating supply of the native asset. The same ratio is used for redemptions: native units are burned, and collateral is released at θ_t, minus the fund's fixed redemption fee. Deposit fees operate in the same way. Because all fees remain in the reserve, the Net Reserve Value (NRV) of each native asset can only increase or stay constant over time.

This architecture yields a reserve system that strengthens itself mechanically over time. Fee flows accumulate as additional collateral, while supply dynamics adjust in response to deposits and redemptions, jointly generating endogenous reserve densification. The system's anti-dilutive structure ensures that every interaction increases per-unit collateral backing.

Fund Name	Collateral	Native Issued Asset	Unit of Account
SSF1	UNI	sereUNI	UNI
SSF2	LINK	sereLINK	LINK
SSF3	WHYPE	sereHYPE	HYPE
SSF4	AAVE	sereAAVE	AAVE

Table 1: Overview of the four initial Sereno Street funds, including collateral assets, issued native assets, and denomination structure.

All SSFs adhere to a single framework:

Initial Ratio	Deposit Fee	Redemption Fee
1:1	1%	2.5%

Table 2: Initial ratio and fee parameters applied uniformly across all SSFs.

3 Fund Architecture

Each Sereno Street fund consists of a reserve of a single collateral token and an outstanding supply of native assets.

Let R_t denote the reserve at time t, and let S_t denote the supply. The monetary state of each fund is captured by the Net Reserve Value (NRV), defined by

$$\mathrm{NRV}_t = \frac{R_t}{S_t}$$

Where R_t is the total collateral held by the fund at time t, and S_t is the supply of the native asset at the same point in time.

The NRV increases whenever reserves grow faster than supply or when supply contracts faster than reserves. This relationship becomes central to the mathematical evolution of each fund.

Minting occurs when a user deposits D units of collateral. A fixed deposit fee f_d, equal to 0.01, applies. The depositor receives newly issued quantity:

$$\Delta S = \frac{D(1 - f_d)}{\mathrm{NRV}_t}$$

Where D is the user's deposit, f_d is the deposit fee, and $\mathrm{NRV}t$ is the pre-minting reserve value per unit.

The full deposit D increases the reserve, so the reserve updates according to:

$$Rt + 1 = R_t + D$$

Redemption operates symmetrically. A redeemer submits X units of the native asset, receiving a gross entitlement of $X \cdot \mathrm{NRV}t$ collateral. A redemption fee f_r, equal to 0.025, applies.

The net collateral transferred is:

$$C\mathrm{net} = X \cdot \mathrm{NRV}t(1 - f_r)$$

Where X is the redeemed quantity, f_r is the redemption fee, and $\mathrm{NRV}t$ is the prevailing reserve-per-unit value.

The reserve evolves as:

$$Rt + 1 = R_t - C\mathrm{net}$$

And the supply decreases according to:

$$S_{t+1} = S_t - X$$

Because the reserve decreases by less than the proportional supply removed, the NRV increases mechanically after every redemption event.

4 Fund Framework

The framework governing all funds consists of fixed-fee minting and redemption, full integration of fees into collateral reserves, immutable contract logic, and complete absence of governance or external oracles.

Minting and redemption occur at endogenous NRV-defined exchange rates derived strictly from on-chain state variables. The structure ensures that the collateral ratio remains at or above unity at all times. Because no leverage, recursive collateralization, or discretionary parameterization is introduced, the system behaves as a deterministic reserve engine, with its evolution driven entirely by user activity and mechanical fee retention.

The evolution of NRV can be restated by considering the total reserve R_t as the sum of user deposits, minus net redemptions, plus accumulated fees.

Let the cumulative net user deposits be denoted U_t. Then:

$$R_t = U_t + F_t$$

Where F_t is the cumulative fee pool. Substituting this expression into the NRV definition produces:

$$\text{NRV}_t = \frac{U_t + F_t}{S_t}$$

Because redemptions decrease S_t while leaving F_t untouched, and because minting increases F_t while increasing R_t proportionally more than S_t, the denominator evolves more slowly than the numerator in every state transition. This dynamic structurally prevents dilution.

4.1 Monotonicity of the Net Reserve Value

The asymmetry created by fee retention produces a fundamental monotonicity property.

After any minting or redemption event, the NRV satisfies:

$$\text{NRV}_{t+1} \geq \text{NRV}_t$$

Where the inequality captures that each state transition either increases or preserves the reserve-per-unit value.

Under the initial bootstrap condition of:

$$\frac{R_0}{S_0} = 1$$

The NRV can be decomposed into its fee-accumulation component as:

$$\text{NRV}_T = 1 + \frac{F_T}{S_T}$$

Where F_T represents the cumulative retained fees from deposits and redemptions, and S_T is the total supply at time T. The expression formalizes the dense relationship between fee accumulation and long-term reserve expansion.

5 Economic Dynamics

From an economic perspective, each Sereno Street Fund establishes a native asset whose value accrues endogenously, independent of external yield sources, trading strategies, or discretionary governance interventions. This accretion is structural: all fees generated through deposits and redemptions are reintegrated into the collateral pool, producing surplus value that compounds directly within the system.

Consequently, the native assets function as reserve-backed claims, with their net reserve value (NRV) evolving deterministically in proportion to system interactions.

Formally, let NRV_t denote the net reserve value per unit of native asset at time t, F_d the deposit fee rate, F_r the redemption fee rate, and ΔS_t the net change in native asset supply over the period. Then:

$$NRV_{t+1} = NRV_t \cdot \left(1 + F_d \cdot \frac{\Delta S_t^{deposit}}{S_t} + F_r \cdot \frac{\Delta S_t^{redeem}}{S_t}\right)$$

Where S_t is the total supply of the native asset at time t, $\Delta S_t^{deposit}$ is the newly minted units from deposits, and ΔS_t^{redeem} is the supply reduced via redemptions.

The long-term equilibrium of each fund is characterized by monotonically non-decreasing NRV. If system activity diminishes, NRV remains constant or grows modestly due to supply contraction effects. If activity increases, NRV rises proportionally through fee-driven densification of the reserve. Critically, there exists no scenario in which NRV can decline under normal protocol conditions, as all collateral is non-extractable by governance or external actors, ensuring structural integrity and resilience.

As a result, this dynamic establishes a predictable, mathematically grounded framework in which participation in the fund compounds exposure to both the underlying asset and the endogenous value generated by the protocol, aligning incentives for long-term holders with systemic growth.

6 On DeFi Assets as Collateral

The selection of UNI, LINK, HYPE, and AAVE as primary collateral reflects their emergence as structurally indispensable assets within a developing on-chain financial system. These tokens are distinguished not only by high liquidity, deep and diversified holder bases, and transparent governance mechanisms, but also by persistent protocol-level economic activity. UNI governs key parameters of the largest decentralized exchange ecosystem, while LINK functions as the settlement token of the preeminent decentralized oracle network. HYPE underpins high-throughput derivatives infrastructure as a settlement-layer commodity, and AAVE operates as both a governance and coordination asset in a long-lived, non-custodial credit market.

Each of these collateral assets is actively evolving its economic fundamentals. Chainlink's LINK reserve introduces a stabilizing mechanism for token utility, Hyperliquid's HYPE buybacks enhance scarcity and long-term value, Uniswap's governance reforms propose new incentive structures for UNI holders, and AAVE's buyback programs create upward pressure on protocol-controlled liquidity. These mechanisms imbue the underlying assets with asymmetric upside potential, further justifying their suitability as collateral.

7 Remarks

SFFs will be made available through Elevado Markets (`markets.elevado.xyz`).

8 Conclusion

This initial draft of the Sereno Street whitepaper is meant to establish a conceptual understanding of the high-level design and architecture of the proposed protocol. It should not be considered complete or final. The version 1.0 of this paper will be published for public review and community input on https://github.com/elevadoxyz.

A Reserve accounting identity

The reserve of a Sereno Street fund evolves according to the fundamental balance-sheet identity:

$$R_t = R_0 + \sum_{i=1}^{t} D_i - \sum_{i=1}^{t} C_{i,\text{net}}$$

Where D_i denotes the i-th deposit, and $C_{i,\text{net}}$ denotes the net redemption outflow.

Where R_t is the reserve at time t, R_0 is the initial reserve, D_i is each deposit, and $C_{i,\text{net}}$ is the redemption after fees.

Because deposits enter at full value and redemptions exit at discounted value, R_t is structurally biased upward.

B Supply dynamics under minting and redemption

Supply evolves via the deterministic rule

$$S_{t+1} = S_t + \frac{D_t(1 - f_d)}{\text{NRV}_t} - X_t$$

Where X_t is the number of native tokens redeemed at time t.

Where S_t is supply, D_t is the deposit, f_d is the deposit fee, and NRV_t is the per-unit reserve value.

This combines issuance from minting and contraction from redemptions.

C Net Reserve Value (NRV) as a sufficient statistic

The NRV at any time satisfies:

$$\text{NRV}_t = \frac{R_t}{S_t}$$

Where R_t is the collateral reserve and S_t the circulating supply.

This single ratio summarizes the monetary state of each Sereno Street fund.

D NRV transition under deposit events

Following a deposit D_t, the NRV transitions according to:

$$\mathrm{NRV}_{t+1} = \frac{R_t + D_t}{S_t + \frac{D_t(1-f_d)}{\mathrm{NRV}_t}}$$

Where f_d is the fixed deposit fee.

NRV rises because the numerator increases by D_t while the denominator increases by less than $\frac{D_t}{\mathrm{NRV}_t}$.

E NRV transition under redemption events

After redemption of X_t units, the NRV becomes

$$\mathrm{NRV}_{t+1} = \frac{R_t - X_t \mathrm{NRV}_t (1 - f_r)}{S_t - X_t}$$

Where f_r is the redemption fee.

Because reserves fall by less than proportional supply destruction, NRV increases.

F Monotonicity Proof Sketch

To show $\mathrm{NRV}_{t+1} \geq \mathrm{NRV}_t$, analyze:

$$\frac{R_{t+1}}{S_{t+1}} - \frac{R_t}{S_t} = \frac{R_{t+1}S_t - R_t S_{t+1}}{S_t S_{t+1}}$$

Substituting deposit or redemption rules yields a non-negative numerator due solely to fee retention.

Where the numerator is a measure of collateral accretion.

Thus NRV never declines.

G Collateral densification as fee-weighted growth

Define cumulative fees:

$$F_t = \sum_{i=1}^{t} \left(f_d D_i + f_r X_i \mathrm{NRV}_i \right)$$

NRV can be expressed as

$$\mathrm{NRV}_t = 1 + \frac{F_t}{S_t}$$

Where F_t is accumulated fees and S_t is supply.

This exhibits explicit fee-driven reserve densification.

H Reserve elasticity with respect to activity

Define reserve elasticity as:

$$\varepsilon_R = \frac{\partial R_t}{\partial A_t} \cdot \frac{A_t}{R_t}$$

Where A_t denotes transactional volume.

This elasticity is strictly positive: higher activity increases reserves relative to existing volume, reinforcing anti-dilution.

I Marginal effect of a single mint event

The marginal effect of a small incremental deposit dD on NRV is:

$$\frac{\partial \mathrm{NRV}_t}{\partial D} = \frac{S_t f_d}{\left(S_t + \frac{D(1-f_d)}{\mathrm{NRV}_t}\right)^2}$$

Where the numerator captures fee-induced densification.

More supply reduces marginal impact; more fees increase it.

J Marginal effect of a single redemption event

The marginal effect of a redemption dX is:

$$\frac{\partial \mathrm{NRV}_t}{\partial X} = \frac{\mathrm{NRV}_t f_r}{S_t - X}$$

Where the redemption fee f_r amplifies reserve-per-unit gains.

As supply shrinks, marginal accretion intensifies.

K Long-run reserve behavior under zero activity

With no deposits or redemptions after time T, NRV satisfies

$$\mathrm{NRV}t = \mathrm{NRV}T \quad \forall t > T$$

Where all variables are frozen.

The NRV remains constant but never declines, showing ‘non-ergodic’ stability.

L Long-run behavior under persistent redemptions

If redemptions dominate deposits, supply shrinks over time:

$$\lim_{t \to \infty} S_t = S_\infty > 0$$

And reserves satisfy:

$$\lim_{t \to \infty} R_t = R_\infty > 0$$

Thus:

$$\lim_{t \to \infty} \text{NRV}_t > \text{NRV}_0$$

Where reserve-per-unit strictly rises in small-supply regimes.

M Long-run behavior under persistent deposits

If deposits far exceed redemptions:

$$R_t \approx \sum D_t$$
$$S_t \approx \sum \frac{D_t(1 - f_d)}{\text{NRV}_t}$$

Thus:

$$\lim_{t \to \infty} \text{NRV}_t = \infty$$

Because fixed fees accumulate indefinitely.

Where infinite minting activity induces unbounded collateral density.

N Continuous-time approximation

Let deposits $D(t)$ and redemptions $X(t)$ be continuous flows. Then:

$$\frac{dR}{dt} = D(t) - X(t)\mathrm{NRV}(t)(1 - f_r)$$
$$\frac{dS}{dt} = \frac{D(t)(1 - f_d)}{\mathrm{NRV}(t)} - X(t)$$

Where differential equations describe smooth collateral and supply evolution.

O NRV growth rate in continuous time

Differentiating NRV:

$$\frac{d}{dt}\mathrm{NRV} = \frac{S(t)\frac{dR}{dt} - R(t)\frac{dS}{dt}}{S(t)^2}$$

Substituting Appendix N yields a strictly non-negative numerator due to fee retention.

Where growth never falls below zero.

P Collateral-to-supply ratio sensitivity

Define sensitivity:

$$\Gamma = \frac{\partial \mathrm{NRV}_t}{\partial f}$$

For either fee parameter $f \in f_d, f_r$.

Both partial derivatives are strictly positive, indicating higher fees induce stronger collateral densification.

Q Simulation-equilibrium condition for NRV stability

A dynamic equilibrium exists when the inflow and outflow of collateral satisfy:

$$D_t f_d = X_t \mathrm{NRV}_t f_r$$

Where fee-weighted inflows equal fee-weighted outflows.

This produces a near-stationary NRV path.

R Effective collateral accretion multiplier

Define the collateral multiplier M_t:

$$M_t = \frac{R_t - \sum D_i + \sum C_{i,\mathrm{net}}}{F_t}$$

Where the multiplier measures reserve amplification relative to fees.

A value $M_t > 1$ indicates that fee-driven densification interacts with supply contractions to increase reserves more than fees alone imply.