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Continuous Yield Streaming in Tokenized RWA Vaults.

A market-structure framework for par-stable, yield-bearing instruments - principal as a fixed-peg claim on attested reserves, yield as a continuous stream of newly minted units.

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This paper describes a market-structure design pattern in the abstract. It does not reference any specific instrument, token, currency, counterparty, or licensee. Numerical examples are illustrative; market-size figures are approximate and drawn from public on-chain trackers and published rating-agency commentary.

ABSTRACT

Tokenized real-world asset (RWA) products and yield-bearing stablecoins have, until now, evolved as two separate categories. The first wraps a fund-like claim in a token whose price floats with net asset value. The second delivers yield on a stable unit either by rebasing balances or by accruing value into a share price. This paper describes a third structure that combines the two: a **par-stable, yield-bearing instrument issued from an RWA vault, where yield is streamed continuously to holders as newly minted units rather than expressed through a floating price.**

We argue that this structure resolves a tension that has constrained institutional adoption of on-chain yield products - the conflict between *being a stable unit of account* and *paying a continuous return*. By separating principal (a fixed-peg claim backed by attested reserves) from yield (a continuous stream of additional units), the design preserves the token's usability as collateral, settlement medium, and accounting unit while delivering the economic return of the underlying RWA. We set out the roles, flows, settlement mechanics, solvency invariants, and risk allocation of this market structure, and contrast it with the share-vault and asynchronous-redemption archetypes that dominate the current on-chain landscape.

We frame the design deliberately in the language of market structure - roles, flows, settlement finality, risk allocation, and ratability - because, in our view, how tokenized RWA vehicles integrate with regulated capital markets is now a market-structure question, not merely a technical one. The structure we describe is purpose-built to be disclosed, controlled, and rated to the standards institutional mandates require, and to invert - rather than inherit - the barriers that currently keep on-chain vaults at the periphery of regulated finance.

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SECTION / 00

Market context

On-chain vaults - programmable vehicles that pool deposits, deploy them according to a defined mandate, and issue each depositor a token representing a proportional claim - have become one of the more consequential primitives in digital finance. Deposits across such vehicles have grown from roughly USD 24 billion in early 2023 to well above USD 130 billion by early 2026 (approximate figures, drawn from public on-chain total-value-locked trackers and rating-agency market commentary, and intended as orders of magnitude rather than precise measures), and a growing body of market and rating-agency commentary now frames them as a candidate substrate for functions long performed by money-market funds, private-credit vehicles, and other regulated intermediaries - leveraging automation, composability, and secondary-market liquidity to compress the layers of a traditional fund into a single programmable contract.

In our view this trajectory is directionally correct but, today, incomplete. The overwhelming majority of vault activity remains crypto-native - staking, crypto-collateralized lending, and yield aggregation - and the migration of the vault form into tokenized real-world assets (RWAs) and regulated capital markets has only begun. The barriers to that migration are by now reasonably well understood, and they are structural rather than incidental:

- **Leverage and looping** amplify returns but transmit stress, turning idiosyncratic losses into cascading deleveraging.
- **Disclosure is uneven.** The underlying ledger is transparent but difficult to interpret without structured reporting on mandate, allocation limits, leverage, and governance.
- **Control is frequently concentrated** in a small number of discretionary curators, creating a dependency that institutional risk frameworks are not built to underwrite.
- **Regulatory status is often undefined** - whether the vault token is a security, a deposit, electronic money, or something else is left open, which is itself a constraint on institutional participation.

Each of these is a reason an allocator operating under a regulated mandate cannot hold a typical on-chain vault position: the exposure is unrated, unevenly disclosed, and operationally uncontrolled by the standards such mandates require.

This paper takes the vault seriously as a unit of tomorrow's market structure, and asks a narrower question than the general case: *what should a vault look like when its specific purpose is to hold high-quality, off-chain-yielding real-world assets and to issue a regulated, par-stable instrument against them?* We argue the answer is materially different from the crypto-native vault the current data describes - different enough to deserve its own market-structure treatment - and that, designed deliberately, such a vault

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inverts each of the barriers above rather than inheriting them. The sections that follow build that structure from its core economic decomposition outward to its risk allocation, its ratability, and its place in the capital markets the vault form is beginning to reshape.

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SECTION / 01

The problem: stability and yield are usually mutually exclusive on-chain

A unit of account must be stable to be useful. A yield-bearing instrument must change in value to deliver return. On-chain, these two requirements have historically forced a choice between three imperfect mechanics:

1. **Rebasing.** Holder balances increase over time to reflect accrued yield. The token nominally stays at par, but the changing balance breaks composability with contracts that assume fixed balances, complicates accounting and tax treatment, and is poorly tolerated by custodians and exchange infrastructure.
2. **Share-price appreciation (the share-vault model).** The token represents a share whose value is `total assets ÷ shares outstanding`, which rises as yield accrues. This is the model standardized by the tokenized-vault standard widely used in decentralized finance. It is elegant for autonomous on-chain strategies, but the token is *not* a stable unit - its price floats, it requires a reliable net-asset-value (NAV) input, and it cannot serve as a par-denominated settlement or collateral instrument without a conversion layer.
3. **Periodic distribution.** Yield is paid out in discrete events. This preserves a stable unit but introduces timing friction, reintroduces a paying-agent in the critical path, and produces a “saw-tooth” holder experience rather than continuous accrual.

Each mechanic sacrifices one of the two properties institutions actually want from a tokenized cash-like instrument: **a stable face value that is simultaneously earning.** The structure described here is an attempt to deliver both.

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SECTION / 02

The core idea: separate the principal claim from the yield stream

The design rests on a single decomposition:

> **Principal** is a fixed-peg claim on attested reserves. **Yield** is a continuous stream of newly minted units delivered to holders in proportion to balance held over time.

The instrument - the **vault token** - is itself a yield-bearing stablecoin pegged to a denomination currency. It is issued from a vault that holds the underlying real-world asset (for example, short-duration sovereign or institutional debt). The vault token does not float. One unit is always worth one unit of the denomination currency at the protocol peg. The return earned by the underlying asset is delivered *not* by letting the token's price rise, but by **streaming additional units to each holder continuously**, computed from the time each unit is held.

This is the inversion of the share-vault model. Instead of value accruing into a fixed number of shares, the *value per unit is fixed* and the *number of units grows*. The economic result for the holder is identical - total value rises with yield - but the holder retains a par-stable token throughout.

2.1 Why "streaming"

Yield accrual is continuous in principle and settled periodically in practice. Because every transfer of the token emits an immutable on-chain event, the exact time-weighted balance of every holder is reconstructable from the public ledger with per-second granularity. Distributable yield is computed off-chain from that immutable record and settled by minting the owed units to each holder at a configured cadence. From the holder's perspective the position accrues continuously ("per-second-held"); from the protocol's perspective settlement is a periodic batch mint backed by attested reserve growth. Unsold inventory held in the vault wallet is excluded from this accrual: yield is attributed only to circulating balances, so the Issuer does not earn a return on stock it has not sold, and no yield is minted without a corresponding holder to whom it is owed.

Critically, **no yield logic sits in the transfer path.** The token transfers like any standard fungible unit. This keeps the instrument legible to custodians, exchanges, and compliance tooling, and keeps gas costs and attack surface minimal.

This is the decisive difference from rebasing, and it answers the balance-mutation objection raised against rebasing in Section 1. A rebasing token rewrites every holder's balance through a global index, so `balanceOf` drifts on every read and breaks contracts that assume fixed balances. Here `balanceOf` returns real held units that change only at discrete, infrequent settlement mints and are static between them. Custodians,

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exchanges, and downstream contracts see an ordinary fungible token whose balance is stable except at known mint events, not a value that moves continuously underneath them.

2.2 Variable-rate accrual at arbitrary granularity

A consequence of computing yield off-chain from a per-second balance record is that the **rate applied can vary continuously** - including intra-day - without any change to on-chain state or settlement frequency. This is a freedom of *apportionment*, not of magnitude: the total distributable in a window is fixed by the attested reserve growth for that window (Section 5), and `r(t)` governs only how that fixed total is attributed across holders and time, never how much exists to distribute. At the moment an intra-day rate is applied it is therefore a provisional apportionment, reconciled against the attested total at settlement. Within that bound, the amount owed to a holder over a settlement window is an integral:

```
owed(holder) = ∫ balance(holder, t) · r(t) dt        over the window
```

where `r(t)` is the instantaneous accrual rate. Because `r(t)` is a parameter of an off-chain calculation rather than a value written to the chain, it can step or move at any granularity the reserve's economics require - a single daily fixing, several intra-day fixings, or a continuous reference curve - and the on-chain footprint is identical in every case: one batch settlement. This property distinguishes the structure sharply from the two dominant yield mechanics:

1. **The rate is decoupled from on-chain state.** A rebasing token must write a new global index at each rate change; a share-price vault must write a new NAV. Both pay gas at the cadence of rate changes and, in practice, can only afford a coarse, piecewise-flat rate. Here, nothing is written on-chain until settlement, so the rate schedule can be arbitrarily fine at zero marginal cost.
2. **Per-second time-weighting prices partial holding across rate boundaries exactly.** The holder's balance timeline already breaks at every transfer; rate-change boundaries are simply additional breakpoints in the same sum. A holder who enters midway through a rate step is credited the correct blended amount. Snapshot- or epoch-based models misprice any holder who moves between snapshots.
3. **No price oracle sits in the value path, so intra-day rate moves cannot be gamed.** Because the unit is fixed at par and yield is computed *retrospectively over actual holding time*, there is no discrete on-chain NAV revision to trade around. In a share-price model, an intra-day NAV markup is a front-runnable event - subscribe immediately before, redeem immediately after. This structure presents no such surface.
4. **Backing cadence and rate cadence are independent.** The attestation that proves reserve adequacy (Section 5) establishes *how much* yield exists to distribute; the rate curve `r(t)` governs *how that amount is attributed across holders and time*. The first can be periodic while the second is arbitrarily fine.

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This is bounded by one discipline: the integral of `r(t)` across the window must reconcile to the distributable yield actually earned and attested - `r(t)` shapes the *distribution* of earned yield, it does not create yield. Within that constraint, the structure can express a continuously varying intra-day rate that neither the rebasing nor the share-price model can represent without incurring on-chain cost and a timing-arbitrage surface at every rate change.

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SECTION / 03

Market structure: the roles

The vault formalizes, on-chain, the same division of labor that exists in a traditional fund - but reassigns each function to a verifiable on-chain or attested role.

TRADITIONAL CAPITAL-MARKETS FUNCTION	ON-CHAIN ANALOG IN THIS STRUCTURE
Registrar / transfer agent	The token contract is the register; an embedded compliance pipeline gates every transfer against an identity registry
Fund accountant / NAV calculation	An independent **Calculating Agent** marks the reserve to market on a periodic (e.g., daily) cadence and submits a signed attestation on-chain; this cadence governs *backing*, and is independent of the accrual-rate cadence (Section 2.2)
Custodian (of the underlying)	Off-chain regulated custody of the real-world asset; on-chain a **vault wallet** holds unsold inventory and a redemption-liquidity buffer
Investment manager	The **Investment Manager** rebalances the reserve off-chain against attested holdings and authorizes inventory expansion
Distributor	An authorized distributor role; subscriptions are otherwise self-service against a standing allowance
Paying agent (income)	A periodic, attestation-gated batch mint settles streamed yield to holders
Issuer	A regulated **Issuer** owns the vault instance and bears the reserve-adequacy obligation

Two design choices in this table carry most of the market-structure weight:

(a) The Issuer is removed from the critical path of subscription and redemption. Because the instrument uses an *inventory* model (Section 4), an investor subscribing or redeeming does not require the Issuer to mint or burn anything in real time. Flows settle against a standing inventory and a standing redemption buffer. The Issuer's involvement is confined to infrequent, pre-funded inventory expansion. This makes the instrument continuously available without an operational counterparty in the settlement loop.

(b) Valuation authority and issuance authority are split. The party that attests NAV (Calculating Agent) is structurally distinct from the party that can expand supply (Investment Manager / distributor), and neither can move an investor's funds. The

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Investment Manager is, by design, the more capable role: it both manages the reserve off-chain and authorizes supply changes. The structure's integrity therefore rests on the Calculating Agent's independence, because the party that values the reserve cannot also issue against its own mark, the Investment Manager cannot manufacture backing headroom to mint into. That single separation, between valuing and issuing, is the structural check that substitutes for the absent curator, and it is the on-chain answer to the curator-concentration and discretionary-control concerns that market observers have raised about pooled on-chain vehicles.

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SECTION / 04

The inventory model: constant supply through subscription and redemption

The defining mechanical feature of this structure is that **principal subscription and redemption do not change the token's total supply.**

In the dominant on-chain models - and in most tokenized money-market products - the token is minted when an investor subscribes and burned when they redeem. Total supply tracks assets under management and moves continuously.

This structure instead pre-issues inventory to a vault wallet (backed in full by attested reserves at the moment of issuance) and then **transfers** that inventory to investors on subscription and **transfers it back** on redemption:

```
Subscription:   investor → settlement stablecoin → vault wallet
                vault wallet → vault-token inventory → investor
                (total supply unchanged)

Redemption:     investor → vault token → vault wallet
                vault wallet → settlement stablecoin → investor
                (total supply unchanged)
```

Total supply changes only in three explicit, attested events: **inventory expansion** (the Investment Manager mints additional inventory after the Calculating Agent attests a larger reserve), **inventory contraction** (the Investment Manager burns unsold inventory from the vault wallet when an attested mark falls, restoring the solvency invariant against circulating holders), and **yield settlement** (the periodic streamed-yield mint). All three are gated by a solvency check.

This produces several market-structure properties:

- **The on-chain register always reconciles to reserves.** The solvency invariant (Section 5) applies to the entire supply, including unsold inventory. There is no "circulating vs. total" gap that can hide unbacked issuance.
- **Available inventory is publicly computable** as `total supply - circulating supply`, with no oracle or off-chain query.
- **Subscriptions and redemptions are atomic and continuous**, settling against the standing allowance the vault wallet has granted the contract, without the Issuer in the loop.
- **The vault wallet's inventory functions as structural subordination.** The unsold inventory, held by the Issuer and backed fully by reserves, absorbs mark-to-market fluctuation by mechanism, not merely by convention: when an attested mark falls, the solvency invariant (Section 5) is restored by burning inventory units from the vault

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wallet, reducing total supply so that circulating holders remain fully backed at par, before any senior holder is touched. The inventory thus performs the economic role that a junior tranche plays in a structured pool, without a second token or waterfall logic. The depth of this cushion is a function of inventory size relative to circulating supply: the Issuer holds unsold inventory sized to absorb the mark-to-market range of a short-duration reserve, and the available cushion - `total supply - circulating supply` - is itself directly computable from the chain at any moment. A cushion thinned by heavy net subscription is therefore visible on-chain rather than hidden, and signals the Issuer to expand inventory.

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SECTION / 05

Solvency: one invariant, enforced pre-settlement

The instrument is backed by attested reserves, and the backing relationship is expressed as a single invariant enforced at every supply-affecting event:

```
attested_reserve_value × coverage_ratio  ≥  total_supply × peg_rate
```

Because the check operates on *total* supply, every unit that exists - circulating or held as inventory - must be backed. The vault wallet's allowance is not a mint authority; it can only move *already-issued, already-backed* inventory. Supply can grow only when prior reserve growth has been attested by the independent Calculating Agent and validated by the protocol's solvency engine.

The reserve is marked to market on a periodic cadence (for example, daily). The attestation is a signed payload recorded on-chain with a timestamp, producing a permanent, independently verifiable audit trail of the backing through time. This attestation cadence establishes *how much* distributable yield exists; it is deliberately independent of the accrual-rate cadence, which can be arbitrarily fine (Section 2.2). Yield is, by construction, the attested growth of the reserve above the par backing requirement - it cannot be minted without first being earned and attested.

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SECTION / 06

Redemption and liquidity

The structure targets **instant (T+0) redemption** from a standing buffer of the settlement stablecoin held in the vault wallet, with a deterministic fallback:

- The vault wallet maintains a settlement-stablecoin buffer sized to expected redemption demand. Incoming subscription proceeds replenish and grow this buffer automatically.
- A redemption settles immediately if the buffer covers it. If the buffer is insufficient the on-chain redemption reverts rather than settling against inadequate backing. This is a solvency guarantee, not a liquidity one: a reverted redemption is itself the liquidity-stress event that the T+1 fallback exists to resolve, and the structure's liquidity claim rests on the buffer being sized and replenished so that reverts are rare, not on the revert being a substitute for available liquidity.
- When the buffer is drawn down, the Investment Manager replenishes it from the underlying asset (the **T+1 fallback**), after which redemption is re-attempted.

There is **no redemption fee and no lock-up**. The instrument deliberately avoids the asynchronous epoch-queue pattern used for illiquid underlyings, because it targets the liquid end of the RWA spectrum where a standing buffer makes continuous redemption feasible. The reserve-management obligation - keep the buffer at least equal to circulating value at the peg - is enforced on-chain at the point of redemption and backstopped between redemptions by regulatory, legal, and operational layers rather than by a continuously-enforced on-chain ratio.

This is a deliberate market-structure position: **capital efficiency for the Issuer is preserved** (subscription proceeds are not locked inside a contract the Issuer cannot touch - they are deployed against the underlying asset), while **investor exit is protected** by the standing buffer plus a layered enforcement stack.

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SECTION / 07

Why not the share-vault standard?

The widely used tokenized-vault standard encodes yield as share-price appreciation and is the correct abstraction when yield is generated *inside* the contract by autonomous on-chain activity. Three properties make it a poor fit for a regulated, par-stable RWA instrument:

1. **The token is not a stable unit.** A floating share price cannot serve as a par-denominated settlement or collateral instrument without a conversion layer, defeating the purpose of a stablecoin-class instrument.
2. **Yield is generated off-chain.** The return on a real-world reserve accrues in a custody account, not inside the contract. Expressing that as share-price appreciation requires an authoritative off-chain NAV input regardless - at which point the share-price wrapper adds complexity without removing the off-chain dependency.
3. **No native compliance hook.** A regulated instrument must gate transfers against an identity and compliance registry. The share-vault standard has no permissioning surface; bolting one on departs from the standard anyway.

The structure here keeps the compliance gate at the instrument layer, keeps the token a par-stable fungible unit, and expresses yield as a stream of units rather than a price. The trade-off is explicit and, for this asset class, favorable.

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SECTION / 08

Comparative market structure

DIMENSION	SHARE-VAULT ARCHETYPE	ASYNC / EPOCH-QUEUE	THIS STRUCTURE
Unit of account	Floating share price	Floating / NAV-based	**Par-stable**
Yield expression	Share-price appreciation	Accrued in NAV	**Continuous unit stream**
Subscribe / redeem	Mint / burn, share math	Request → epoch → claim	**Inventory transfer, constant supply**
Redemption latency	Instant (from liquidity)	Days to weeks	**T+0 buffer / T+1 fallback**
Issuer in settlement path	Curator / contract	Issuer per epoch	**No (self-service vs. inventory)**
Permissioning	Typically none	Per-pool	**Embedded compliance pipeline**
Where yield is earned	On-chain strategy	On/off-chain	**Off-chain RWA, periodically attested**
Supply ↔ reserve reconciliation	Share price × shares	Pool NAV	**Total supply × peg ≤ attested reserve**
Leverage in the structure	Common	Varies	**None**

The right-hand column is not strictly superior on every axis - it sacrifices the autonomous, trustless on-chain yield generation that the share-vault model provides. It is the correct structure specifically for **off-chain-yielding, regulated, par-denominated RWA**, where stability of the unit and verifiability of backing matter more than on-chain strategy autonomy.

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SECTION / 09

Risk allocation

A market structure is ultimately a statement about who bears which risk. This one allocates as follows:

- **Principal risk** is borne by the reserve and bounded by the solvency invariant: no unit exists without attested backing, enforced pre-settlement.
- **First-loss / mark-to-market fluctuation** is absorbed structurally by the Issuer's unsold inventory: a downward reserve mark is met by burning inventory units to restore the solvency invariant (Section 4), so the loss falls on the Issuer's residual holding before any circulating holder, who holds a fixed-peg claim, is affected. The strength of this protection scales with the size of the inventory cushion, which is publicly computable from the chain.
- **Redemption-liquidity risk** is borne by the Issuer's obligation to maintain the buffer, with an on-chain floor (redemption reverts rather than settling unbacked) and an off-chain replenishment path.
- **Valuation risk** is independently checked: the Calculating Agent that marks the reserve is separate from the party that can expand supply.
- **Smart-contract risk** is minimized by keeping yield and pricing logic *out* of the transfer path, using a fixed peg rather than a manipulable price oracle in the value path, and confining upgrades to a timelocked governance process.
- **Disclosure** is addressed at the structural level: mandate, accepted assets, peg, valuation authority, and issuance authority are first-class on-chain configuration; backing is an attested, timestamped, public series; available inventory and circulating supply are directly computable from the chain.

The notable, deliberate trade is that **reserve adequacy between redemptions and the source of yield are verified by attestation and regulatory obligation rather than by continuous on-chain enforcement.** For a regulated issuer of a par-stable instrument backed by off-chain assets, a layered regulatory–legal–operational enforcement stack is, we argue, stronger investor protection than purely on-chain enforcement could provide - and it avoids the capital inefficiency of locking proceeds the issuer is entitled to deploy.

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SECTION / 10

Ratability: instrument and vault ratings from established agencies

A central design objective of this structure is that it should be **independently ratable** - by the same agencies that institutional allocators already rely on for fixed income, fund, and counterparty risk (Moody's, S&P Global Ratings, Fitch, and comparable bodies). Ratability is not an afterthought bolted onto a crypto-native product; the structural features described in this paper were chosen so that the instrument and the vehicle present the clean, verifiable risk surface a rating methodology requires. We argue that ratings should attach at **two distinct levels**, and that both the instruments issued from a vault *and the vault itself* should be rated.

10.1 Two levels of rating

(a) Instrument-level rating - the vault token. The par-stable, yield-bearing instrument is, in risk terms, analogous to a money-market fund share or a short-term note. It is therefore amenable to more than one established rating lens:

- a **principal-stability / fund-style rating**, analogous to the dedicated money-market-fund and principal-stability fund rating scales the major agencies already maintain, assessing the instrument's ability to maintain par value and meet redemptions on demand;
- a **credit rating** on the conventional short- or long-term scale where the instrument is characterized as a debt claim, reflecting the credit quality of the underlying reserve; and
- a **stablecoin / tokenized-instrument stability assessment**, of the kind several agencies now publish specifically for par-stable digital instruments, addressing peg robustness, reserve quality, redeemability, and governance.

(b) Vehicle-level rating - the vault. The vault itself - the operational, governance, and counterparty wrapper around the instrument - is amenable to **operational and governance assessment**, analogous to asset-manager, servicer, and fund-operations ratings. This evaluates the quality and track record of the Investment Manager, the independence and rigor of the Calculating Agent, custody arrangements for the underlying, key-management and upgrade governance, and the smart-contract control environment.

Rating at both levels matters because the two risks are separable and an allocator needs both: a high-quality reserve (strong instrument credit) held inside a poorly-controlled vehicle (weak operations) is not investment-grade in aggregate, and a well-run vehicle cannot improve a weak reserve. Splitting the assessment gives allocators the same two-dimensional view they already use for rated funds - *what is it backed by*, and *who and what operates it*.

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10.2 What the agencies assess - and how the structure answers

RATING DIMENSION	WHAT IS ASSESSED · HOW THIS STRUCTURE PRESENTS IT
Credit quality of reserve	*Default and credit risk of the underlying assets.* Short-duration, high-quality reserve; composition attested and marked to market; a publicly verifiable backing series rather than a periodic snapshot.
Market risk	*Sensitivity to interest rates, spreads, and mark-to-market moves.* Short duration limits rate sensitivity; the fixed peg isolates holders from mark-to-market fluctuation, which is absorbed by the issuer's inventory buffer - burned first to restore backing, in the manner of a junior tranche (structural subordination).
Liquidity / redemption risk	*Ability to meet redemptions under normal and stressed conditions.* Standing par-buffer for T+0 redemption, deterministic T+1 replenishment fallback, on-chain hard floor; no leverage to unwind under stress.
Structural / legal	*Bankruptcy remoteness, enforceability of the claim, collateral status.* Defined legal and collateral framework; segregated reserves; layered regulatory–legal–operational enforcement.
Counterparty / operational	*Manager quality, custody integrity, valuation independence.* Valuation authority (Calculating Agent) and issuance authority (Investment Manager) are split and distinct; regulated custody of the underlying; independent periodic attestation.
Technology / smart-contract	*Code-execution risk, key management, upgrade control.* Minimal logic in the transfer path; no price oracle in the value path; timelocked, governed upgrades; audited contracts.
Governance / transparency	*Disclosure quality and concentration of control.* Machine-readable mandate; attested, timestamped backing series; directly computable circulating and inventory supply.

10.3 Why this structure is unusually ratable

Most crypto-native vehicles are difficult to rate because their risk surface is opaque, leveraged, and discretionary - precisely the barriers independent market commentary has identified as constraining institutional participation. This structure inverts each of those properties:

- **No leverage** in the structure to model through a stress scenario.
- **A fixed peg with no price oracle in the value path** removes a primary market-risk and manipulation vector and makes principal-stability analysis tractable.

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- **An attested, timestamped reserve series** gives a rating analyst a continuous, independent record of backing rather than a quarterly attestation.
- **The constant-supply inventory model** means the on-chain register reconciles to reserves at every moment - the solvency surface a methodology must verify is trivially and publicly checkable.
- **Split authorities operated by regulated entities** give a clean operational and governance assessment in place of anonymous-curator concentration.

The result is a vehicle whose risk can be expressed in the vocabulary institutional allocators already use. That translation - from a crypto-native product into a rated instrument with a defined market-risk, credit, and operational profile - is ultimately what makes a tokenized instrument eligible as collateral, as a treasury holding, and as a line in a regulated portfolio.

10.4 Ratings as continuous surveillance, not a point-in-time stamp

A rating is an opinion subject to ongoing surveillance. The structure’s continuous on-chain disclosure - attested backing, computable supply, an immutable transfer record - is well-suited to that surveillance: an agency can monitor the rated instrument and vehicle against its criteria continuously rather than at reporting intervals, compressing the information lag between a change in risk and a rating action. The same machinery that makes the instrument transparent to investors makes it efficient to keep rated.

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SECTION / 11

Why this matters for capital markets

Independent market commentary has identified tokenized vaults as a potential foundation for tomorrow's capital-markets infrastructure, while flagging leverage mechanics, opaque disclosure, and curator concentration as the principal barriers to institutional adoption. The structure described here is a direct response to the RWA end of that thesis: it carries no leverage, makes mandate, backing, and supply continuously verifiable, replaces the anonymous curator with a regulated issuer whose valuation and issuance authorities are split on-chain, situates the instrument inside an explicit licensing and legal-collateral framework, and is built to be rated. Each of these properties has been developed in Sections 2 through 10; rather than restate them, this section addresses how they line up against the specific guardrails the market has said it requires.

11.1 Meeting the market's stated guardrails

Recent rating-agency and market commentary has been specific about what broader institutional adoption of vaults will require: clearer regulatory guidance, more standardized disclosure, and independent operational controls spanning custody, audited smart contracts, resilient oracles, and third-party risk engines. We did not treat these as compliance overhead to be added later; the structure was designed so that it satisfies each guardrail by construction.

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GUARDRAIL THE MARKET HAS ASKED FOR	HOW THIS STRUCTURE PROVIDES IT
Standardized disclosure	Mandate, accepted assets, peg, and the identities of the valuation and issuance authorities are first-class on-chain configuration; backing is published as an attested, timestamped series; circulating and inventory supply are directly computable.
Independent custody	The underlying asset is held in regulated off-chain custody; the on-chain vault wallet holds only inventory and the redemption buffer, operated by a regulated entity rather than an anonymous party.
Audited smart contracts	A deliberately minimal contract surface - no yield or pricing logic in the transfer path - confined to audited code under timelocked, governed upgrades.
Resilient oracles	The *value path* contains no price oracle: principal is fixed at par, so the most common oracle-failure vector - a manipulated or stale price feeding the unit's value - is removed outright. The trusted external input that remains, the signed reserve attestation, sits in the backing-and-yield path rather than the value path; it is produced independently by the Calculating Agent and recorded on-chain as a timestamped, auditable series rather than consumed as a live price feed.
Third-party risk engines	Valuation (Calculating Agent) and issuance (Investment Manager) are independent third-party roles; an embedded compliance pipeline gates every transfer; and the vehicle is built to carry independent agency ratings (Section 10).

A structure that meets these guardrails by construction - rather than retrofitting them onto a permissionless design - is, we believe, the more credible path for RWA vaults into regulated portfolios.

11.2 The instrument the market has been waiting for

The combination most worth emphasizing is the one in the title. A **par-stable unit that streams continuous yield** is the instrument that traditional money-market and cash-management desks have always wanted and never had on-chain: something that behaves like cash for settlement, accounting, and collateral, yet earns the return of its high-quality reserve every second it is held. Decoupling the principal claim from the yield stream, and settling both against a single attested solvency invariant, is what makes that instrument expressible on a public ledger without sacrificing either stability or verifiability.

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If vaults are to become a substrate for tomorrow's capital markets - intermediating the roles of money-market funds, cash-management vehicles, and short-term credit - then at least one class of vault must be buildable to institutional standards of stability, disclosure, operational control, and ratability, and buildable without surrendering the composability, continuous settlement, and transparency that make the on-chain form worth adopting in the first place. The structure set out in this paper is our account of what that class of vault looks like, and why we believe it, rather than the crypto-native vault that dominates the current data, is the form in which real-world assets will ultimately reach regulated balance sheets at scale.

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SECTION / 12

Summary

PROPERTY	MECHANISM
Par-stable unit of account	Fixed peg; principal never floats
Continuous yield	Per-second-held accrual, periodic attested mint, no rebasing, no price float
Backing integrity	`total_supply × peg ≤ attested_reserve × ratio`, enforced pre-settlement
Continuous availability	Inventory model; constant supply through subscribe/redeem; issuer out of the loop
Instant exit	Standing settlement-stablecoin buffer (T+0) with T+1 replenishment fallback
Verifiable disclosure	On-chain mandate, attested daily NAV, directly computable supply
Compliance	Identity/compliance gate embedded in every transfer
Minimal trust surface	No leverage; no price oracle in the value path; split valuation/issuance authority
Ratable	Instrument- and vault-level ratings; continuous on-chain surveillance surface

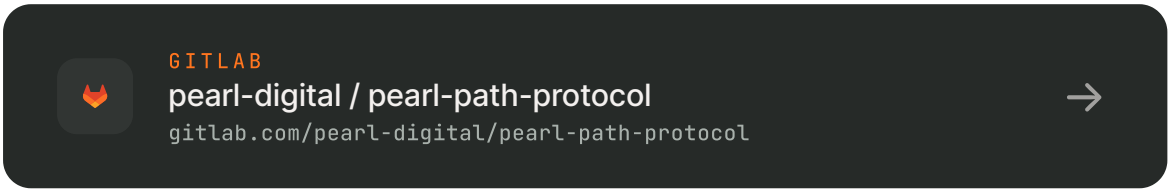
This is a market structure for **regulated, par-stable, continuously-yielding RWA instruments** - distinct from the floating-share DeFi vault and from the asynchronous tokenized fund, and purpose-built for the institutional RWA segment those models do not serve well.

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Reference implementation

The reference implementation that accompanies this paper is maintained as an open repository. Issues, proposals, and contributions are welcome under the licence terms set out in the repository itself.



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