246 Club:
Lending Restaking Primitive

Glovin, Madiha, 0xRestrict, KooOne, Knox

2024.05

Abstract. Many lending markets have emerged within the DeFi ecosystem, each offering distinct mechanisms and tradeoffs ranging from minor interest rate variations to major divergences in protocol design. As user needs become more specialized, infrastructures have adapted to facilitate increasingly granular markets.
In this context, "246 Club" proposes a unified system that enables users to consolidate and optimize borrowing and lending conditions across numerous specialized protocols, thereby creating an experience akin to operating within a single lending platform. Central to our framework are Cross-Protocol Loan positions, which unlock Cross-Protocol Arbitrage by allowing borrowers to combine favorable conditions from multiple sources undergoing progressive specialization and differentiation.
A cornerstone of this architecture is Credit Stripping, a mechanism that decouples collateral deposits from the borrowing process. By permitting collateral to reside in one protocol while securing loans from another, users can form atomic positions where interest rate arbitrage becomes both practical and efficient.
Furthermore, Lending Restaking underpins our system by enabling existing protocol lenders to re-stake their positions for additional arbitrage capture. Inspired by EigenLayer, this mechanism imposes no extra marginal cost or market fragmentation; lenders maintain their original yield and liquidity while voluntarily assuming heightened risk within the same vertical to attain higher returns.
Through these innovations, "246 Club" aims to streamline access to specialized DeFi lending markets, preserve capital efficiency, and enhance lenders' and borrowers' ability to exploit and capture interest rate disparities—all within a cohesive and unified layer.

1 Status Quo

Over the past year, lending markets have undergone a transformative shift by disaggregating broad, monolithic risk pools into more narrowly defined structures.

As the variety of tokenized real-world assets, yield-bearing assets, incentive-laden tokens, and novel crypto asset and yield classes continues to grow and diversify, the lending landscape naturally fragments further. On a fundamental level, each new asset type carries a distinct risk-return profile—whether stemming from real-world interest rates (as with T-bill-backed stablecoins), protocol-specific incentives (via airdrops or points), or built-in yield mechanisms (as in some specialized stablecoins). In response, lending protocols increasingly tailor their pools to these unique profiles. By separating collateral and borrowing conditions according to each asset's characteristics—volatility, maturity, or embedded yield—protocols are able to match borrowers and lenders who share a more precise alignment of risk tolerance and return expectations. This phenomenon ultimately drives a shift away from "one-size-fits-all" liquidity pools toward a more specialized network of lending markets, each configured to optimize capital allocation for a particular asset type or combination of assets.

Initially, the move toward single collateral–single borrow asset pools (sometimes referred to as "isolated pairs") allowed lenders and borrowers to tailor their positions to the preferred risk profile. Yet the trend does not stop at pair-wise isolation. Emerging protocols create "clusters," grouping sets of collateral assets and/or multiple borrow assets. Conceptually, this expands the total number of distinct lending pools to reflect combinatorial possibilities across all assets. Each new asset or asset set arrives with its own supply-demand dynamics, ultimately spawning unique interest rate trajectories.

This granular segmentation ensures that each local market—whether a single pair or a multi-asset cluster—arrives at a distinct equilibrium shaped by the interplay of collateral characteristics, borrower demand, and protocol-specific parameters. For instance, a yield-bearing stablecoin used as collateral often sets an implicit cap on borrowing costs: when the embedded yield is sufficiently high, borrowers are unwilling to pay interest much above that yield, imposing a natural boundary on rates. Conversely, a volatile collateral may prompt lenders to demand a premium for risk, pushing rates higher.

Beyond these structural forces, reward programs can inject an additional layer of complexity. Protocols sometimes offer "points" or future airdrops whose ultimate monetary value remains unknown until the tokens are distributed and a secondary market emerges. Borrowers and lenders factor in their own subjective expectations for these rewards: some may heavily discount them, while others place a sizable premium on the anticipated windfall. These differing viewpoints effectively alter each participant's calculation of "true" net cost or yield, thus pulling the local market equilibrium in multiple directions. Meanwhile, technical levers—such as utilization curves or incentive structures—continue to shape the baseline supply-demand interaction. Even ostensibly similar markets (e.g., two stablecoin pools) can, therefore, diverge considerably if one includes a more generous or uncertain reward mechanism, a distinct interest-rate model, or unique safeguards that modulate risk.

In the end, each pool coalesces around a **mosaic of specialized equilibria**, reflecting its collateral traits, protocol design, and the diverse expectations of users. This convergence might appear cohesive from afar, but it is, in fact, the sum of many individual assessments regarding reward risk, collateral volatility, and the interplay of supply and demand within that discrete slice of the lending ecosystem.

A significant byproduct of this specialized structure is heightened volatility. Because each pool operates with a narrower liquidity base, even moderate shifts

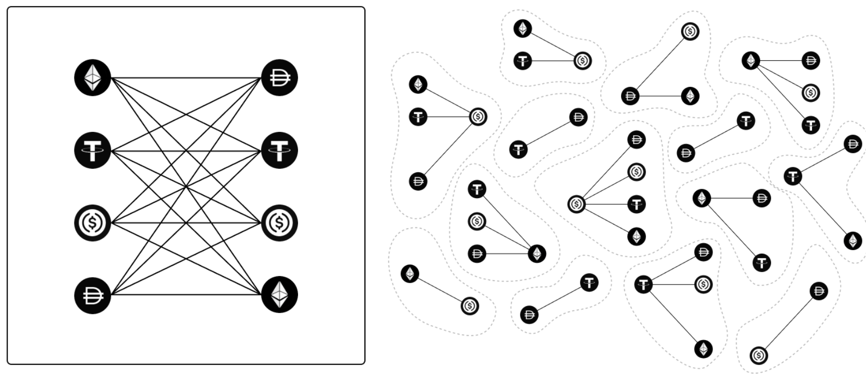

Fig. 1. Fractal-like Expansion of Lending Markets

in deposits or borrowing can trigger abrupt swings in utilization levels—and by extension, interest rates. These movements are further magnified by users constantly monitoring alternative pools in pursuit of higher yields or lower borrowing costs, which can spark sudden migrations of capital. One large deposit might rapidly dilute a pool's APR, while a surge in loan demand can force rates upward just as quickly.

This volatility is precisely the result of localized supply-demand balances being easily tipped—no unified reservoir of liquidity exists to buffer sudden shifts. While such dynamism can create fleeting opportunities for active lenders to capture outsized returns, it complicates the landscape for passive users who seek predictable positions. Over time, this fragmentation and continuous reallocation of capital transform the market into a patchwork of micro-equilibria—each more reactive to local conditions than would be possible in a monolithic, one-size-fits-all system.

Looking ahead, this fractal expansion of lending offerings brings both opportunity and complexity. As specialized markets proliferate, so do the distinct convergence points for interest rates, each reflecting the nuanced interplay between risk preferences, demand from borrowers, and the intrinsic attributes of collateral assets. In essence, the entire DeFi ecosystem shifts toward specialization and precision in capital allocation—an environment that readily rewards participants capable of navigating its intricacies.

2 Interest Rate Arbitrage

Interest rate arbitrage emerges whenever capital, seeking its most advantageous application, encounters local lending pools with yields that differ more than their respective risk profiles would justify. In a perfectly efficient market—where every participant has complete, up-to-date information and incurs zero costs for reallocating capital—these mismatches would vanish almost immediately. Yet

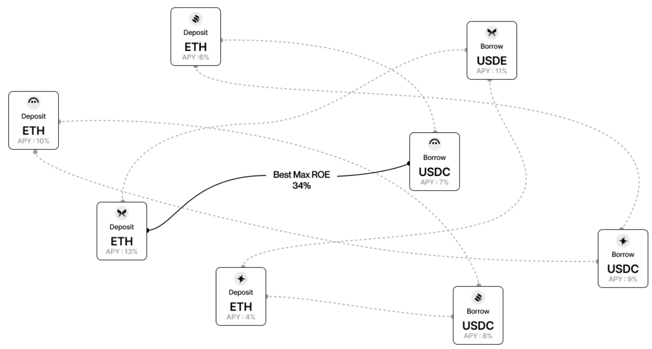

Fig. 2. Cross Protocol Arbitrage

in practice, DeFi lending markets are shaped by both structural and behavioral factors that hinder seamless rate convergence. Many participants do not constantly monitor or shift their positions in response to every fluctuation, and yields can change rapidly by the time a reallocation is completed. Moreover, each move carries opportunity costs, as well as the risk that the target pool's rate will decline immediately after redeployment. The complexity of comparing dozens of protocols and pools further dissuades frequent repositioning. Consequently, some pools remain under- or over-supplied for longer than expected, allowing pockets of higher or lower rates to persist beyond what a frictionless environment would permit—effectively rewarding those who detect and act upon these discrepancies.

At a more fundamental level, the core driver is that risk perception is **never uniform**. Borrowers and lenders continuously revise their views on an asset's potential upside or downside—be it a volatile token that could appreciate rapidly, a yield-bearing stablecoin with steady returns, or an entirely new class of collateral whose behavior is yet to be fully understood. Even slight variations in these assessments can push interest rates upward in one pool and downward in another. When someone notices that a given pool's rate appears uncommonly high relative to the underlying collateral risk (or that another pool's rate is inexplicably low), that discrepancy becomes an entry point for arbitrage. Shifting capital in or out nudges those disparate local equilibria closer together: the previously high-yield pool sees an influx of lenders, lowering its rate; the withdrawn pool finds its supply reduced, causing rates to tick upward.

The reason these opportunities persist, rather than vanishing permanently once discovered, lies in the dynamic nature of lending markets. Protocols continually introduce new assets, alter incentive programs, or adjust parameters like kink of interest rate model and liquidity thresholds. Shifts in the broader macroeconomic landscape—such as changes in risk appetite, newly popular yield-bearing tokens, or extrinsic events affecting real-world asset tokenization—cascade into DeFi markets and revise the balance of supply and demand. The proliferation of specialized pools compounds this effect: each cluster, pair, or multi-asset arrangement reflects a carefully sliced risk profile with its own unique utility and price signals. No sooner does one rate discrepancy get resolved than another arises from a fresh wave of liquidity or a newly deployed incentive scheme.

Capital flows to these mispriced segments because participants anticipate a return that surpasses what they believe is available elsewhere for comparable risk. By re-balancing rates, their actions confer broader efficiency benefits on the system, but that efficiency is only partial and transient. Fragmentation ensures that no single reservoir of capital can instantaneously mop up all mispricings. A single whale may correct a discrepancy in one pool but remain unaware of emerging gaps in another pool or decide the frictional costs outweigh the potential gain. Meanwhile, smaller participants, who might be agile enough to exploit nuanced niches, still face knowledge gaps or execution costs. The result is a perpetual cycle of discrepancy, detection, and partial convergence.

These dynamics **remain self-reinforcing** in an environment where specialized assets and pools proliferate. The more distinct a pool's underlying collateral or incentive design, the more localized its supply-demand equilibrium becomes—and the more likely that its rates will stray from adjacent markets. This mosaic of discrete pools, each possessing its own liquidity and risk parameters, lies at the heart of modern lending markets. As the ecosystem expands, rate differences consistently recur, attracting those who can parse the subtleties and reallocate capital efficiently. Over time, what appears to be a minor difference in interest rates at one point may soon escalate or vanish, only to reappear in another pool under new conditions. In that sense, interest rate arbitrage is not just an artifact of fragmentation; it is a constant recalibration process that flourishes because of the very forces—specialization, changing incentives, and diverse risk preferences—that have made lending markets so varied and dynamic in the first place.

3 246 Club: Lending Restaking Primitive

3.1 Cross-Protocol Loan Position

An Atomic Cross-Protocol Loan position brings into one place what was previously siloed, allowing borrowers to deposit collateral in a market that values it more favorably while borrowing from another that offers comparatively lower rates on the same (or closely correlated) asset. This unification taps directly into the local yield differentials that emerge from each protocol's distinct supply-demand dynamics. By combining both sides—deposit and borrow—under a single arrangement, the participant no longer contends with dispersed positions and their scattered exposure points. Instead, they realize a single effective spread that reflects the gap between the deposit return in one pool and the borrowing cost in another.

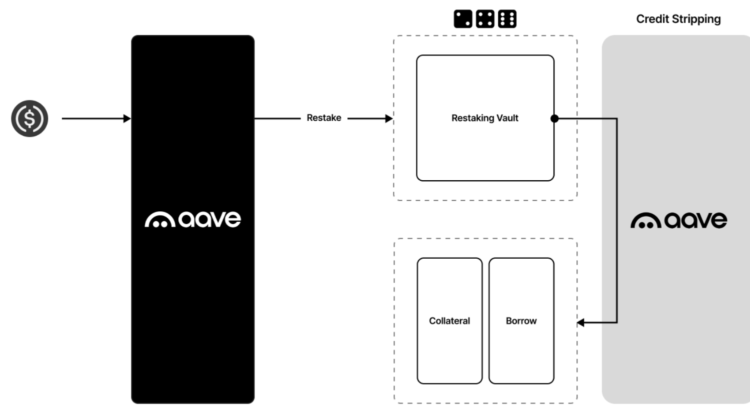

Fig. 3. Lending Restaking and Credit Stripping

This design addresses the fragmentary nature of DeFi lending at its core. Specialized pools may produce exceptionally high deposit rates for certain collateral, whereas other pools set rates for borrowers in a manner that reflects an entirely different set of risk perceptions and supply-demand dynamics. When these disparate viewpoints generate misalignments in how collateral is priced, the cross-protocol position becomes a clean, capital-efficient way to capture that gap. Rather than relying on sequential transactions or juggling multiple pools, borrowers settle into a single integrated structure. As the ecosystem continues to spawn new asset types, localized yield quirks, and granular variations in risk tolerance, this unified position preserves capital efficiency while keeping overhead low.

In effect, the single cross-protocol arrangement turns fragmentation into a source of sustainable advantage. Each newly specialized lending environment adds another layer of potential misalignment, and the cohesive deposit-and-borrow approach ensures that participants can act on these discrepancies without diluting their returns across multiple partial positions. By enforcing a one-to-one link between a chosen collateral deposit and a borrowed asset, users gain direct exposure over the net interest rate and can revisit or adjust that position as market conditions or collateral values evolve. This straightforward alignment of deposit and borrow terms—unhampered by the friction or vulnerability that comes with managing separate loans—makes a single cross-protocol loan position a decisive and coherent way to capture interest rate arbitrage opportunities in an ever-diversifying lending and borrowing landscape.

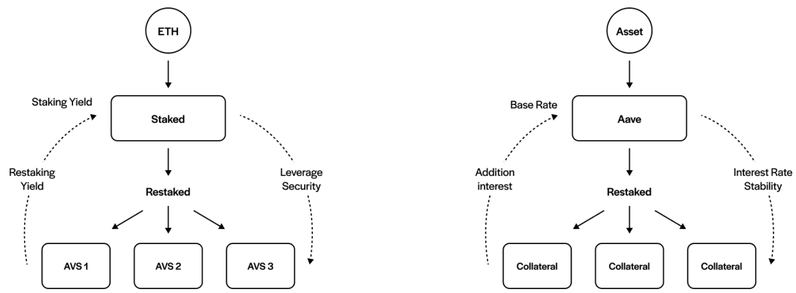

Fig. 4. Comparison of Ethereum Restaking and Lending Restkaing

3.2 Lending Restaking and Credit Stripping

Credit stripping and delegation form the foundation of cross-protocol loan positions in 246 Club. The system initially builds on protocols like Aave, which provides ample capital efficiency and liquidity, leading to less volatility in interest rates. Depositors, whether existing or new, strip and delegate borrowing power from Aave to 246 Club. This delegated borrowing power is matched with separate deposit positions on other protocols to capture yield differentials while borrowing from Aave at more stable rates. Restakers always retain ownership of their Aave deposits and earn the base yield from Aave while gaining extra yield through 246 Club whenever their delegated borrowing power is utilized.

Ethereum restaking allows stakers extend the utility of their staked ETH to additional protocols. This model introduces negligible marginal cost except for the risk of slashing yet offers the potential for higher yields. Similarly, 246 Club leverages base layer protocols by letting restakers retain their principal and base earnings in Aave while delegating only the borrowing power. Restakers thus keep the yield from rehypothecation or yield-bearing collateral, unaffected by 246 Club's borrowing demand, and gain incremental restaked returns when that borrowing power is deployed.

Credit stripping allows lenders to **enhance returns without relocating** their original positions. Users who already lend assets to Aave can simply restake deposit receipts into 246 Club, while newcomers to lending first deposit into Aave and then restake. This arrangement conserves liquidity and relies on Aave's deep reserves to offer stable and predictable rates. It also extends access to collaterals not always listed on Aave, as 246 Club harnesses the stripped credit in additional venues.

This approach benefits both Aave lenders and 246 Club participants. Lenders retain Aave yields while earning more whenever cross-protocol arbitrage materi-

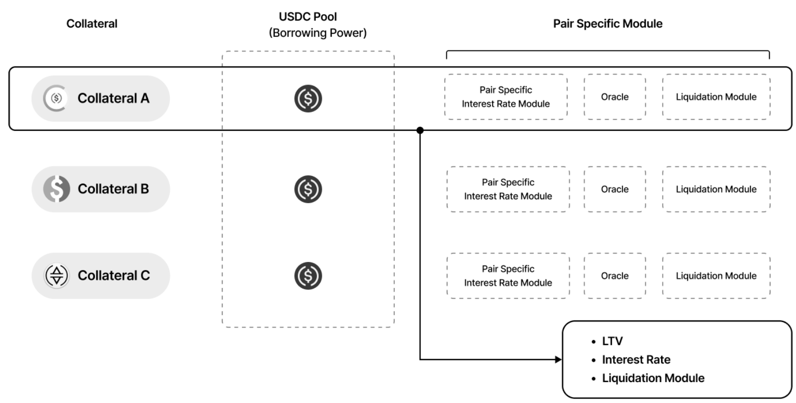

Fig. 5. Pair Specific Risk Management

alizes. Borrowers tap that delegated credit to open loan positions suited to their needs.

Restakers do not lend the restaked asset itself, so the restaked asset and borrowed asset may differ, but they must track each other's value to avoid triggering liquidations in the base protocol. The separation of collateral and credit also makes interest rate arbitrage feasible within Aave. A restaker might maintain a USDC deposit position when the deposit rate for USDC on Aave is high while a borrower takes GHO at a fixed rate, or a lender who deposits stETH in Aave, for instance, gains staking rewards while delegating the borrowing power of ETH instead of stETH, the lender captures the borrow demand for ETH as well.

4 Pair Specific Risk Management

4.1 Isolated Settlement

Isolated settlement ensures that each loan position initiated through 246 Club on a base layer protocol such as Aave remains independent in terms of accrued interest and health factor fluctuations. This isolation prevents one position's risk exposure from affecting another's standing.

4.2 Isolated Positions

246 Club opts for a middle ground by pooling borrowing power for efficiency while maintaining single-collateral, single-borrow isolated loan positions with no native rehypothecation. This structure supports pair-specific parameters rather than general asset-specific ones. Each pair uses targeted interest rate curves,

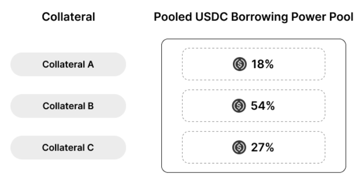

Fig. 6. Segmented Risk Exposure

LTV ceilings, and liquidation safeguards calibrated to that pair's price volatility and return profile. One pair might feature a conservative LTV if staked ETH is used as collateral to borrow a stable asset with divergent price patterns, yet a higher LTV may apply when borrowing assets that mirror the collateral's price path. Where yields are high, steeper rate curves can prevent destabilizing interest arbitrage and simultaneously enhance restaker returns. Each isolated pair thus benefits from fine-tuned risk management without imposing excessive externalities on other pairs within the protocol.

5 Segmented Risk Exposure

5.1 Unified Liquidity

Unified lending pools offer deep liquidity and strong capital efficiency. When funds reside in a single, large pool, borrowers benefit from reduced interest-rate volatility, while lenders enjoy a network effect in which any surge in borrowing demand can bolster overall yields. However, a purely unified pool can expose lenders to unchecked risk from high-volatility collaterals since everything shares one utilization metric. Isolated pools solve this by segregating assets, but they fragment liquidity and reduce efficiency. Protocols like Aave impose asset-specific caps to manage total exposure, but these caps are often set above current usage and may not match shifting risk profiles.

The goal is to preserve the advantages of a unified pool—deep liquidity, stable rates, and reduced fragmentation—while preventing uncontrolled exposure. **Segmented Risk Exposure (SRE)** answers this by keeping a single pool of funds yet restricting how much each collateral can tap into that pool.

5.2 Segmented Risk Exposure Management

SRE designates a "slice" of the borrowing power to each collateral without forcing a new pool for every token. If a pool of USDC is provided by restakers, 20 percent might be allocated to a specific strategy like Morpho, keeping capital efficiency while guarding against excessive concentration in any single asset.

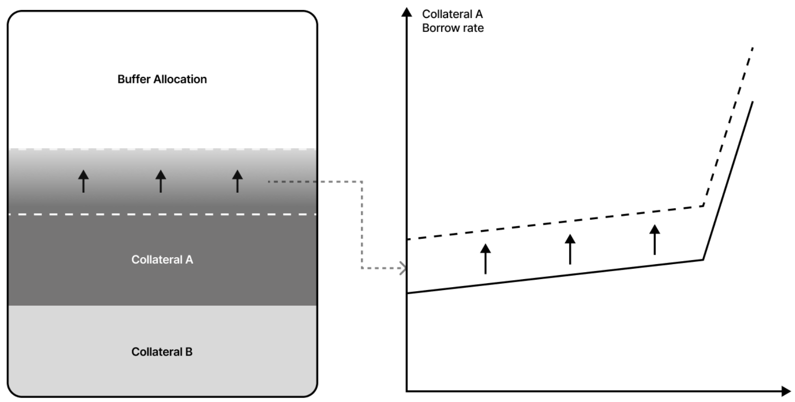

Fig. 7. Interest Rate Steepens with Buffer Allocated

All funds remain pooled together, and lenders still earn returns from overall market activity. Because the pool is large, rates are more stable, and sudden spikes in demand for one collateral seldom throw the entire system into disarray—at least until that collateral's allocation is fully used. By capping how much any single asset can borrow, the protocol also limits outsize exposure. If one collateral becomes extremely popular, it will eventually hit its allocation limit instead of putting the entire pool at risk.

5.3 Limitations

While SRE delivers many upsides, certain shortcomings persist. The first stems from governance: each allocation to collateral must be managed and readjusted manually, so if collateral hits its cap, new demand goes unmet until the protocol's decision-makers increase that cap. A second challenge is that interest rates are often tied to global utilization, so surging demand for one asset still raises borrowing costs for everyone. Finally, if a collateral's cap is filled yet idle liquidity remains, the protocol loses potential revenue and may prompt borrowers to look elsewhere.

These issues underscore the need for more nuanced interest-rate modeling and an automated way to reassign or expand collateral-specific allocations in real-time.

6 Buffer Allocation

Buffer Allocation automates real-time adjustments to collateral-specific demand within a unified pool. It uses two layers of caps (hard and soft) plus a pair-specific interest rate mechanism that kicks in whenever soft caps are exceeded.

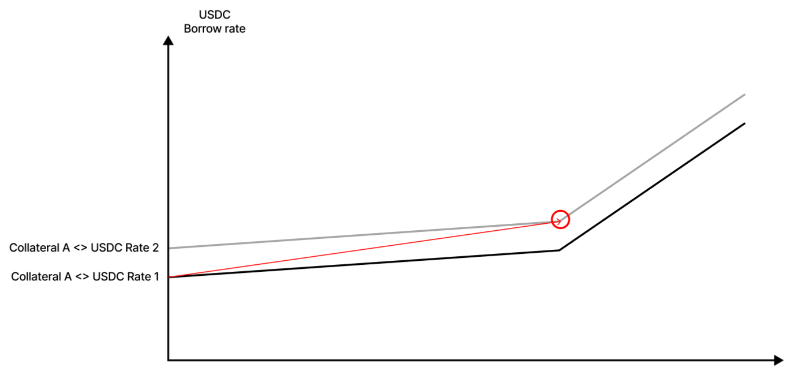

Fig. 8. Dynamic Interest Rate Model under Buffer Allocation

The overarching objective is to avoid the fragmentation of many small pools, preserve the efficiency gains and network benefits of a single large pool, and build a dynamic "safety valve" for each collateral, allowing it to tap extra liquidity at a proportionally higher borrowing cost.

6.1 Hard and Soft Caps

Under hard caps, each collateral has a maximum borrowing limit, such as 50 percent of the pool. Once usage reaches that threshold, no additional borrowing is allowed. Soft caps are set below these hard caps. When a collateral surpasses its soft cap, the protocol draws from a reserved buffer, triggering a steeper interest-rate curve for that specific collateral. This higher rate discourages unchecked borrowing while letting markets absorb more liquidity if the demand justifies the cost.

6.2 Dynamic Interest Rate Adjustments

When a collateral pair exceeds its soft cap, the interest-rate curve for that pair alone shifts upward. This modification addresses two categories of borrow demand: pair-specific demand (often driven by rate arbitrage or yield incentives) and overall borrow demand (tied to broader market conditions and global pool utilization). As general utilization U of the pool rises, the base rate $R(U)$ climbs for everyone, but the biggest leap occurs when a specific collateral surpasses its soft cap, thereby adding a pair-specific premium $\Delta R_i(U_i)$.

The borrow rate for collateral i is:

$$R_{\text{borrow},i} = R(U) + \Delta R_i(U_i),$$

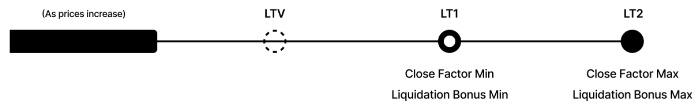

Fig. 9. Dynamic Liquidation with Dual Threshold

where $R(U)$ depends on global utilization, and $\Delta R_i(U_i)$ captures the localized surge in demand for collateral i.

In a typical unified pool, collateral that experiences soaring demand boosts utilization for the entire pool, increasing borrowing costs across the board and making it difficult for less-demanded assets to stay competitive. Under the Buffer Allocation framework, only the collateral exceeding its soft cap sees a major rate hike. Other collaterals remain largely unaffected and thus keep their borrowing strategies viable. Since liquidity is still shared, lenders gain from the high utilization of one collateral, while borrowers pursuing different assets are not penalized by someone else's demand. This approach ensures each collateral pair's usage cost reflects both the global market constraints (through $R(U)$) and the pair's local supply-demand pressures (through $\Delta R_i(U_i)$).

7 Dual Liquidation Threshold

Before exploring more complex liquidation modules designed to minimize value leakage, we present our primary model of two liquidation thresholds, each with its own parameter range for the Close Factor (CF) and Liquidation Bonus (LB).

7.1 Adaptive Liquidation Parameters

Rather than setting fixed CF and LB at each threshold, we allow these parameters to **scale linearly** from the lower threshold (LT_1) to the upper threshold (LT_2). This design pinpoints more precise "sweet spots" for liquidators and borrowers:

- **Close Factor (CF)**: Gradually increases from a smaller portion of debt liquidated at LT_1 to a larger or even full portion at LT_2.
- **Liquidation Bonus (LB)**: Gradually increases from a modest incentive at LT_1 to a higher premium at LT_2.

This progression addresses a key risk of static settings—where mismatched CF or LB can either fail to attract liquidators or cause excessive collateral erosion. By letting CF and LB adjust continuously, the protocol can adapt to changing market conditions and borrower risk profiles, improving both borrower protection and liquidator engagement.

7.2 Early vs. Delayed Liquidation Incentives

A dual-threshold framework creates two liquidation "zones":

1. **Lower Threshold Zone ($LT_1 \sim LT_2$)**: CF starts lower here, so partial liquidations are smaller in size. LB is also on the lower side initially, limiting the profit margin for liquidators but reducing the borrower's collateral loss. Because these liquidations are less profitable, competition among liquidators may be lower—offering an incentive to step in early. Borrowers benefit from the reduced chance of a single large liquidation wiping out their collateral.
2. **Upper Threshold Zone ($LT_2 \sim 100\%$)**: As LTV crosses the upper threshold, CF can rise closer to 1 (full liquidation), and LB may climb to a higher rate. This combination raises the potential reward for liquidators but also heightens competition. Borrowers, meanwhile, face a steeper risk of collateral depletion if they let their positions drift into this zone.

By allowing CF and LB to **gradually shift** between these thresholds, the system offers liquidators a continuous spectrum of opportunities—ranging from a swift, smaller liquidation to a more competitive but potentially more lucrative liquidation if the borrower's position deteriorates.

8 Conclusion

In bringing together the advanced concepts of Lending Restaking, Credit Stripping, Buffer Allocation, and Segmented Risk Exposure, 246Club unifies a rapidly diversifying lending landscape into a single, coherent layer. By allowing collateral to reside in one protocol while securing loans from another in an atomic manner, Cross-Protocol Loan positions transform the volatility and fragmentation of specialized pools into a **newly accessible engine for interest rate arbitrage**—something siloed lending protocols could never fully achieve—all while preserving capital efficiency. Meanwhile, Lending Restaking empowers lenders to capture heightened yield—by effectively harnessing these arbitrage avenues—without relinquishing their base deposits or liquidity, seamlessly integrating with the rest of the system through an interest rate model that uses Buffer Allocation to balance local and global utilization.

By setting both hard and soft caps, the Buffer Allocation mechanism **dynamically adjusts borrowing limits** on a per-collateral basis. When soft caps are exceeded, it triggers a steeper rate curve for that specific collateral, mitigating sudden spikes in utilization while still allowing higher-yield strategies to unfold when justified. This targeted approach not only stabilizes interest rates for less-demanded assets but also reinforces the big-picture goals of cross-protocol arbitrage and restaking—ensuring that capital flows remain efficient, risk stays well-partitioned, and lenders continue to benefit from newly tapped arbitrage sources all within a unified liquidity pool.

Beyond these core innovations, every mechanism in 246 Club—from Segmented Risk Exposure to the dynamic dual liquidation threshold—aligns with our overarching vision of cohesive cross-protocol lending and borrowing. By **preventing any single collateral from overwhelming the pooled capital**, while tailoring incentive structures for liquidators in real time, the protocol orchestrates a capital-efficient environment where rate discrepancies can be seized with minimal friction. All in all, previously fragmented lending markets now converge on a unified layer that delivers tangible efficiency gains first and foremost—and, as a final touch, fosters a more collaborative rather than purely competitive setting.

Disclaimer

This whitepaper is intended for general informational purposes only. It does not constitute investment advice, financial advice, or any recommendations. Readers are advised to conduct their own research and consult with a professional advisor before making any financial decisions. The information provided herein is subject to change and is not guaranteed to be accurate, complete, or up-to-date.