Uniswap Liquidity Launchpad

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ABSTRACT

Uniswap Liquidity Launchpad is an open source, modular framework for permissionless bootstrapping of onchain markets on Uniswap V4. This paper introduces Continuous Clearing Auction, a novel auction mechanism that combines uniform clearing logic with early bidding incentives to promote smooth price discovery while minimizing opportunities for gaming and manipulation. Uniswap Liquidity Launchpad integrates seamlessly with Uniswap V4 via LBP Strategy, deploying auction proceeds into a liquidity pool to enable liquid secondary markets after the auction concludes.

1 INTRODUCTION

Having deep, correctly priced onchain markets is one of the most important foundations for a decentralized economy. The liquidity and integrity of these markets influence how capital flows between assets, how information is reflected in prices and how communities coordinate around the exchange of value.

When markets are deep and efficiently priced, they provide credible signals, reduce volatility and attract sustained liquidity. When they are shallow or mispriced, volatility increases, confidence erodes and communities weaken.

Establishing robust onchain markets therefore requires solving two intertwined challenges:

- **Price Discovery:** Determining a fair, credible market price for an asset, even under uncertainty or asymmetric information.
- **Liquidity Bootstrapping:** Ensuring sufficient capital forms to provide active, stable trading while prices remain tied to up to date information.

Traditional markets rely on centralized intermediaries like underwriters, book-runners and market makers to handle these challenges. They shape price discovery and ensure liquidity but in exchange capture control and economics.

In decentralized markets, these functions must be achieved without intermediaries, through transparent, onchain mechanisms that are open and incentive aligned.

Existing onchain approaches including airdrops, fixed-price sales, Dutch auctions and bonding curves, attempt to address aspects of this problem but each falls short in fully addressing the twin challenges presented.

This paper introduces **Uniswap Liquidity Launchpad**, a modular framework for permissionless onchain market formation. Its first mechanism, the **Continuous Clearing Auction**, extends the uniform-price auction into continuous time to enable smooth, demand-driven clearing. Paired with a simple **LBP Strategy**, it connects the auction directly to Uniswap v4 liquidity, creating a seamless transition from formation to ongoing trading.

Although we begin with a focus on bootstrapping markets on Uniswap V4, the framework itself is designed to be general and useful in many contexts where these twin problems arise. Similar mechanisms are used in traditional finance; periodic auctions on equity venues such as Cboe and Nasdaq, or work-up sessions in U.S. Treasury markets. These parallels suggest that Uniswap Liquidity Launchpad can serve as a foundation for a new class of decentralized market-formation mechanisms across a broad set of problem spaces, asset types and time horizons.

2 PRIOR WORK AND CURRENT CHALLENGES

Liquidity bootstrapping mechanisms in DeFi already take many forms, ranging from bespoke launchpads to liquidity bootstrapping pools. While they differ in decentralization and user experience, most existing approaches fall into four broad categories: (i) airdrops, (ii) fixed-price sales, (iii) open (Dutch and uniform-price) auctions, and (iv) bonding-curve sales.

Despite this diversity, prior research and practice highlight recurring limitations—mispricing, timing games, one-shot execution, unequal access, and reliance on intermediaries—that motivate our design.

Airdrops. Airdrops (retroactive or claim-based) function as a "zero-basis sale" and are widely used to seed token distribution and incentivize early engagement. However, both empirical and theoretical work highlight systemic issues: they are regularly exploited by *airdrop farmers* using Sybil strategies to capture outsized shares, and many recipients immediately dump tokens, exerting downward pressure on price. [7] find that in several major airdrops, up to two-thirds of distributed tokens are sold rapidly post-claim, and much of the value accrues to farmers rather than long-term users. [3] further model the adversarial dynamics and show that farmers' behavior distorts allocation and disincentivizes unsophisticated participants.

Because the “free” distribution by definition gives zero entry cost, the valuation at the time of launch is barely market tested and is highly vulnerable to sell pressure. Moreover, intermediaries—exchanges or market makers—often dominate initial trading, widening the gap between the whitelisted airdrop recipients and retail. These externalities (farmable eligibility, zero-cost inventory, and intermediary price extraction) help explain why airdrops frequently deliver subpar outcomes and motivate designs that internalize distribution-time externalities or couple allocation with credible, continuous price discovery.

Fixed-price primary sales. Examples include NFT mints with pre-announced mint prices, centralized launchpads, and even IPO listings in traditional finance. In TradFi, a large literature has documented the persistent mispricing of IPOs, often resulting in significant underpricing and inefficient capital allocation [5, 6]. Fixed, pre-announced prices therefore risk either underpricing (creating windfalls for a subset of buyers) or overpricing (leading to inventory and credibility risks for issuers). In onchain settings, fixed-time sales can also catalyze priority races and mempool gaming, exacerbating execution inequality.

Open (Dutch and uniform-price) auctions. Many liquidity bootstrapping designs draw from open auction formats, such as Dutch (descending-price) and uniform-price multi-unit auctions. While these formats appear transparent and fair, they both suffer from information-timing frictions. In descending-price Dutch auctions, bidders delay participation to free-ride on information revealed by others, a classic feature of common-value environments [8, 9]. Even uniform-price Dutch auctions, such as those used in the Google IPO, have been criticized for weak information revelation and strategic delay [2, 10]. Similar dynamics appear in uniform-price auctions: because the clearing price depends on aggregate demand, bidders have little incentive to bid early, leading to clustered, last-minute participation and sniping in on-chain contexts [4].

These timing and coordination frictions hinder smooth price discovery and efficient information aggregation. The CCA mechanism mitigates these problems through continuous clearing, which organically rewards early, sustained participation and yields a stable price discovery process.

Bonding-curve sales. These mechanisms couple primary distribution with ongoing trading through AMM-style continuous pricing. Their core vulnerability lies in one-shot execution: buyers submit transactions that execute immediately against the current AMM state, making outcomes highly sensitive to transaction timing, mempool ordering, and execution latency.

This creates exposure to MEV attacks such as frontrunning and sandwiching [1], and makes execution outcomes path-dependent in unpredictable ways. While designs like Balancer LBPs introduce dynamic pricing curves, they still rely on immediate execution at submission time — preserving timing-related risks that favor sophisticated actors with low-latency access.

Taken together, these approaches illustrate the tradeoff space: simplicity versus fairness, flexibility versus manipulation risk. None reliably deliver both credible price discovery and durable liquidity in a decentralized, permissionless way.

These recurring flaws motivate the design of Uniswap Liquidity Launchpad, which generalizes the fairness of uniform clearing into a continuous-time framework and couples it directly with automated Uniswap v4 liquidity seeding.

3 UNISWAP LIQUIDITY LAUNCHPAD DESIGN OVERVIEW

Uniswap Liquidity Launchpad is a framework composed of two coordinated components: a *LBP strategy contract*, which manages token distribution and the allocation of post-auction proceeds; and a standalone *auction contract*, which generalizes the familiar uniform-price auction into a continuous-time setting.

Before the auction begins, the initiating party specifies parameters that govern both the auction process and the post-auction liquidity configuration. Together, these contracts determine how the auction will run and how liquidity is established afterward.

3.1 Pre-auction Specification by the Initiating Party

Before bidding begins, the initiator commits to two sets of parameters:

Auction configuration. These parameters govern the mechanics of the auction itself:

- *Release schedule.* $Q(t)$ is the cumulative quantity released by time t in the auction. It defines how supply is released over time, which also determines the cadence of clearing.
- *Price floor.* The minimum acceptable clearing price, ensuring that tokens are not sold below a preset level.
- *Validation hook.* An optional hook that gives the launcher additional flexibility. For example, the hook can validate which participants are eligible to bid.
- *Other parameters.* This can include the start block, the end block, the graduation threshold, and the currency of bids.

Post-auction liquidity configuration. These parameters govern what happens once the auction concludes:

- *Seeding of proceeds.* The amount of reserve tokens to be paired with auction proceeds and deposited into a Uniswap v4 pool.
- *Liquidity bootstrapping strategy.* Pool parameters such as fee tier and tick spacing, together with any optional v4 hooks (e.g., dynamic fee adjustment, buyback logic, compliance gating) that modify the behavior of the post-auction pool.

All parameters are immutably set before the auction begins so that participants understand both how the auction will operate and what liquidity environment will follow.

3.2 During an Auction

Buyers may submit bids at any time during the auction period. Once a bid is submitted, all subsequent actions are handled automatically by the protocol according to the release schedule $Q(t)$. The division between buyer action and protocol mechanics is as follows:

Buyer action.

- *Submit a bid.* Participants specify an *amount in*—a budget denominated in the funding currency—along with a *maximum acceptable price.*
  - They may place multiple bids over time, allowing them to express richer preferences and to adapt as new information emerges during the auction.
  - **e.g.** *{3 ETH, max price 0.01 ETH per Token}.*

Protocol mechanics.

- *Bid spreading.* Each bid is automatically divided across the remaining time of the auction according to the release schedule.
  - **e.g.** Suppose the auction has three equal release periods (each releasing 1/3 of tokens).
    - If a bid is submitted during the *first period*, it is spread evenly across all three: *{1 ETH, 1 ETH, 1 ETH}* at a max price of *0.01 ETH/Token.*
    - If the same bid is submitted during the *second period*, it is spread across the remaining two: *{1.5 ETH, 1.5 ETH}* at the same max price.
- *Uniform clearing and allocation.* At each period:
  - The protocol aggregates all active bids in that period, considering only the portions willing to buy at or above a given price. This forms a cumulative demand curve that is compared against the tokens released for that period.
  - A single clearing price is then set—the highest price at which the period's supply can be sold.
  - **e.g.** Suppose 1,000 tokens are released this period.
    - Cumulative demand snapshot: {600 tokens at 0.010 ETH}, {1,000 tokens at 0.008 ETH}, {2,000 tokens at 0.005 ETH}.
    - The clearing price is 0.008 ETH/Token.
  - Bidders with max prices strictly above the clearing price receive full allocations; those exactly at it may be partially filled; those below receive none.
  - **e.g.** The portion of a bid *{1 ETH, max price 0.01 ETH/Token}* active in this period spends 1 ETH and receives 125 tokens.

3.3 Post-auction Liquidity Pool Initialization

At the conclusion of the auction, participants may claim their resultant funds—this includes the allocated tokens, as well as any unfilled portion of their bids in the case of partial fills or being outbid. Concurrently, the protocol initializes a Uniswap v4 pool based on the configuration committed to pre-auction. The initiator can configure share of proceeds to be seeded, the amount of reserve tokens contributed, and any selected hooks or liquidity-management extensions.

The result is a seamless transition: the end of the distribution becomes the beginning of a liquid market. The clearing price of the auction sets the initial state of the pool, while integration with Uniswap V4 connects the new token directly to the broader Uniswap ecosystem, enabling accessibility and ongoing trading activity.

3.4 Advantages of the Design

3.4.1 Nested Family of Designs. The mechanism generalizes the uniform-price auction into continuous time, nesting several familiar formats as special cases:

- **One-shot uniform.** When $Q(t)$ allocates all supply at once, the mechanism reduces to the standard one-shot auction.
- **VWAP execution.** Because buyer demand follows the same $Q(t)$ schedule as supply, it behaves like a volume-weighted average price order.
- **TWAP execution.** When $Q(t)$ increases linearly and clearing occurs at fixed intervals, it resembles a time-weighted average price order.

This nesting illustrates how the design interpolates smoothly between existing formats while preserving uniform-clearing fairness.

3.4.2 Advantages for the Initiator. The framework gives initiators broad flexibility in configuring both the auction process and the post-auction liquidity environment:

- **Stable Price Evolution.** Because all bids are immutable once submitted and because existing demand and supply grow proportionally over time, each clearing period inherits the clearing price established by previous ones. New demand is incorporated additively, without reordering or displacing existing allocations. This structure ensures that clearing outcomes evolve in a consistent and stable manner: each subsequent price reflects cumulative demand rather than transient fluctuations. The result is a transparent and gradual price trajectory, where discovery unfolds smoothly instead of through abrupt resets or end-period surges.
- **Configurability.**
  Initiators can tailor the release schedule (e.g., community whitelists, pre-bid registration windows, chunked or continuous supply), determine how proceeds are allocated (such as initial liquidity or buybacks), and extend functionality through hooks (e.g., dynamic fees, buyback logic, or compliance gating). Access control fits naturally within this framework: while the protocol enforces no default restrictions, launchers may introduce their own participation rules—such as KYC checks or allowlists—through configurable hook logic.

3.4.3 Advantages for Participants. From the perspective of buyers, the mechanism promotes fairness, transparency, and organic incentives for timely participation:

- **Early bidding incentive.** Because demand is accumulated proportionally over time, earlier bids gain exposure to a larger share of the auction's clearing trajectory. As later demand adds to the cumulative total, early participants often transact under more favorable conditions without relying on artificial rewards. This structure naturally removes incentives for sniping or strategic delay—buyers compete on valuation rather than transaction timing—making the mechanism inherently resistant to bot-driven manipulation.
- **Fair and transparent pricing.** All similarly situated buyers face the same clearing price, and the process is observable in real time. Participants can monitor the evolving price path and adjust their strategies accordingly, fostering credible and equitable price discovery.

3.4.4 Ecosystem Integration. Integration with Uniswap v4 ensures that token launches flow directly into the broader DeFi ecosystem rather than ending in isolation:

- **Seamless market transition.** Auction proceeds and reserve tokens can seed a v4 pool, carrying the final clearing price forward as the initial market reference. This continuity provides instant liquidity and a credible anchor for secondary trading.
- **Composable and extensible design.** Because the resulting pool resides within Uniswap v4, the token is instantly accessible across the ecosystem, and initiators can extend behavior—dynamic fees, buybacks, or compliance gating—through custom hooks without altering the auction logic.

4 RISKS AND LIMITATIONS

While Uniswap Liquidity Launchpad is designed to improve fairness and stability, several risks remain. First, uniform-price formats are not strategy-proof in general and may still admit residual bid shading. Second, while the release schedule $Q(t)$ offers design flexibility, poor shaping—such as underweighting the final chunk—can create manipulation risks near the auction's end. Third, chunked clearing can concentrate activity near interval boundaries; careful parameterization mitigates but does not eliminate timing games. Fourth, onchain execution inherits network frictions (e.g., MEV, L2/L1 sequencing latency). Finally, post-auction liquidity depends on initiator-selected seeding parameters and any chosen v4 hook logic; these are disclosed ex ante so participants can evaluate trade-offs.

5 POTENTIAL FUTURE WORK

Continuous Clearing Auction is the first auction format introduced within this framework. It shows that fair price discovery and durable liquidity can be achieved through transparent, continuous clearing onchain, but it represents only one point in a broader design space.

Further work extends in two directions.

First, additional auction formats such as sealed-bid, Vickrey or hybrid AMM-auction mechanisms, can explore different tradeoffs between simplicity, privacy and efficiency.

Second, strategy modules like LBP Strategy can evolve to support richer post auction distribution behaviors from dynamic liquidity provisioning to programmable treasury management. Together with Uniswap V4, these extensions can expand Uniswap Liquidity Launchpad into a comprehensive toolkit for onchain market formation.

Beyond the use cases outlined, the same architecture could apply to many other contexts where fairness and liquidity continuity are essential: refinancing auctions that roll onchain debt, buyback programs that repurchase tokens through continuous clearing, DAO treasury rebalancing that executes swaps transparently, and recurring liquidity injections that scale pool depth dynamically. Each shares a common structure of demand aggregation, credible price discovery, and automated liquidity deployment.

Continuous Clearing Auction is a first step—a proof that onchain market formation can combine theoretical soundness with practical usability. The open, modular nature of Uniswap Liquidity Launchpad enables future mechanisms to extend this foundation, creating new forms of decentralized coordination and market activity without intermediaries.

6 CONCLUSION

The creation of robust onchain markets are foundational to decentralized finance, yet existing mechanisms often create fragile markets that exhibit mispricing, unequal access, and dependence on intermediaries.

This paper introduced **Uniswap Liquidity Launchpad**, an open framework for permissionless market formation that unifies price discovery and liquidity provision. Through **Continuous Clearing Auction**, a continuous uniform-clearing mechanism, and **LBP Strategy**, a modular liquidity deployment strategy, the framework demonstrates how fair and durable markets can emerge as protocol-level primitives rather than ad hoc events.

While the present design centers on one auction and one strategy, its modular structure enables future extensions across diverse applications and problem spaces.

By generalizing the principles of fair clearing and automated liquidity to the onchain setting, Uniswap Liquidity Launchpad establishes a foundation for decentralized markets that are transparent, extensible, and aligned by design.

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