

July 10, 2026

VIA ELECTRONIC SUBMISSION

The Honorable Hester M. Peirce and Members of the Crypto Task Force
U.S. Securities and Exchange Commission
100 F Street, N.E. Washington, DC 20549-0213

Re: Automated Market Makers and the Application of the Federal Securities Laws

We appreciate the Commission's continued engagement regarding the tokenization of assets as they pertain to decentralized market infrastructure. Recent public commentary, including submissions addressing automated market makers ("AMMs"), does not provide a clear and accurate account of the practical operation of these systems. As the Commission's work progresses, it is critical that its analysis be firmly rooted in a precise understanding of AMM mechanics. The recent submission by the Securities Industry and Financial Markets Association illustrates this broader misunderstanding, as it presumes that AMMs merely replicate traditional intermediary functions in a novel form. That presumption is unfounded. This letter seeks to clarify the mechanics of AMMs and address recurring misconceptions that arise when evaluating AMMs through traditional frameworks developed for intermediated markets. Only by grounding analysis in the actual operation of AMMs can the Commission ensure the sound application of federal securities laws in this context. As a software developer building some of the most widely adopted decentralized finance products and protocols, including the Uniswap Protocol, Uniswap Labs is uniquely positioned to provide this grounding.

Overview of Automated Market Makers

As discussed in detail below, AMMs represent a form of market infrastructure that does not map cleanly onto the structure of traditional, intermediated trading systems. Much of the current confusion surrounding AMMs stems from the instinct to describe them using familiar concepts such as orders, counterparties, and traditional market makers. Following this misapplication of faulty logic will result in overbroad regulation and chilling policies that will (a) fail to adequately protect consumers from real risks and (b) stifle the unique benefits presented by AMMs.

In traditional securities markets, trading activity is organized around the expression and interaction of intents. Market participants decide whether to buy or sell, at what price, and under what conditions. Those decisions are transmitted as orders which intermediaries receive, handle, and, in many cases, display. Transactions occur when intended orders execute, facilitated by intermediaries. This architecture depends on actors who stand between participants and the market itself, receiving instructions on behalf of others and using their discretion as to how those instructions are executed. Accordingly, securities laws (including registration and substantive regulation of broker-dealers) are tailored to address conflicts of interest and information asymmetries that arise from intermediaries exercising discretion.

AMMs begin from a different premise. Trading interest is not expressed through orders and then brought together. There are no standing instructions awaiting execution, no order book reflecting supply and demand, and no intermediary responsible for handling or routing transactions. There is no intermediary exercising discretion over user orders and deciding whether or not to favor its own interests over the user's. Instead, a user, via their self-custodial wallet, interacts with a smart contract that governs a pool of assets. When that interaction occurs, the contract applies a predefined pricing function to the pool's state, producing a verifiable, replicable outcome. The process does not involve pairing counterparties or matching intent. It is the continuous application of publicly visible predefined and static rules.¹

Rather than a technical distinction, the difference between AMMs and traditional markets is a fundamental shift in trading mechanisms and architecture. In order-driven systems, transactions arise from the mutual intent of two or more participants, with intermediaries facilitating the interaction. These intermediaries are necessary for an order-driven market to function. By contrast, AMM transactions do not require a counterparty to take the opposite side. Rather, transactions are determined exclusively by the availability of assets in a pool and by predefined rules governing their repricing in response to user-directed interactions. This process necessarily entails a disintermediation that results in a mismatch with traditional securities laws designed to function via intermediaries.

Liquidity Pools

Liquidity pools are often incorrectly described as analogous to the collections of orders, but that analogy does not hold under closer examination. In traditional securities markets, an "order" constitutes a present or future intent to transact, one that can be revised or withdrawn as conditions change. Assets in a liquidity pool do not function in this way. They are contributed in advance and remain subject to the same pricing function (and while the function itself does not change, its output varies based on the assets in the pool at the time of the interaction). The liquidity provider is not making a contemporaneous decision to trade, evaluating a counterparty, or adjusting to market conditions. Rather, their capital is subject to the preset rules that govern its use. Treating that exposure as an expression of trading intent collapses the meaningful distinction between active involvement and discretion, and passive allocation based on predetermined rules.²

¹ Campbell R. Harvey, Joel Hasbrouck & Fahad Saleh, *The Evolution of Decentralized Exchange: Risks, Benefits, and Oversight*, Research Policy Volume 55, Issue 3 (April 2026) ("Harvey et al."), (defining a DEX as "an application deployed on a blockchain that allows investors to exchange digital assets at pricing terms determined by a preset exchange rate formula" and characterizing AMM pricing as "mechanical" and governed entirely by a fixed algorithmic invariant, with no actor exercising discretion over individual trade outcomes). See also Katya Malinova & Andreas Park, *Learning from DeFi: Would Automated Market Makers Improve Equity Trading?*, SSRN Working Paper No. 4531670 (March, 2026) ("Malinova & Park") (similarly analyzing AMM pricing as an algorithmic rule applied to pool state, without human discretion).

² Harvey et al. at 5 (observing that a DEX liquidity provider "invests in the pool without knowing the direction of the incoming orders" and that DEX liquidity providers "are treated identically whether they are the first investors contributing to the pool or the last," with no expression of directional trading intent); Malinova & Park at 1, 3–4 (describing AMM liquidity provision as "truly passive, provide-and-forget," in which "unlike dealers or limit order traders, AMM liquidity providers do not need to actively monitor markets or submit and cancel quotes," allowing "a broad base of asset holders" to participate; further observing that "liquidity providers' outside option is a passive buy-and-hold position" and that AMMs "mobilize capital that would otherwise sit idle in brokerage accounts" conduct materially distinct from the expression of contemporaneous trading intent).

This distinction is equally significant with respect to pricing. In traditional markets, prices emerge from the continuous interplay of bids and offers, reflecting participants' responses to new information. Most bids and offers are not public. Intermediaries with access to bid and offer information are therefore in a privileged position with respect to other market participants. Without regulatory oversight, these intermediaries can abuse this information asymmetry to the detriment of their clients and fair markets. In AMMs, by contrast, price is not proposed or negotiated by market participants. Rather, it is determined algorithmically as a function of the relative quantities of assets in the pool, expressed in simplest terms as $x * y = k$, where x is one asset in the pool, y is the other, and k is a constant. Each transaction modifies these quantities, resulting in a new price for each asset within a pool. These transactions are all public, meaning that any participant can determine the market price on equal footing with other participants. No participant sets a quote or dictates the terms of a specific trade; the price is generated solely by the AMM's pre-established rules and approved via a user's self-custodial wallet.³

This structural divergence extends to execution. In intermediated systems, execution consists of a series of judgments (orders are routed, venues are selected, and execution quality is evaluated). A key component is that someone is responsible for determining how transactions are effected. Participants rely on intermediaries to act on their behalf, placing orders with brokers who assume responsibility for execution. Without regulatory oversight, a broker could abuse its power over transaction execution to the detriment of its customers. In AMMs, by contrast, this discretionary layer is entirely absent. Once a user initiates a transaction, the outcome is dictated by the AMM's predefined logic, with no actor other than the user exercising discretion over the process. The AMM applies rules automatically. Users retain full control over their assets and initiate transactions independently. There is no delegation of authority to an intermediary, no handling of instructions for another's account, and no third-party responsibility for execution. The user interacts directly with the AMM. Regulatory oversight over a human or corporate intermediary is not required to protect a user from an intermediary's misaligned incentives in determining the execution path, because the user, not any intermediary, decides how to execute a trade.

Components of AMMs are Not Intermediaries

Accordingly, it is inaccurate to describe an AMM as a single actor or entity performing intermediary functions. Instead, AMMs comprise independent components: smart contracts execute transactions based on fixed logic; liquidity providers supply capital without controlling its deployment in individual trades; and interfaces provide a user-friendly way to read and write to the smart contracts. Interfaces are not essential and do not execute transactions. To the extent participants are involved in ordering transactions (which is a complex process that varies across blockchains), the securities laws as currently existing do not map onto such technical facilitations,

³ Harvey et al. at 2 - 3 ("due to the mechanical implementation of AMMs, terms of trade are highly transparent. The assets of the underlying liquidity pool are held directly by pool investors, and while these investors are exposed to market risk, the pool assets cannot be misappropriated"). This structural transparency stands in marked contrast to the specialist system in traditional markets, where the specialist "knew [the order book's] contents but were prohibited from revealing the contents to others (an important informational advantage)" that supplied the foundational rationale for regulatory oversight of intermediaries. The AMM architecture eliminates this asymmetry by design, rendering the intermediary oversight rationale inapplicable.

and further study may be required. Collectively, these components do not replicate the roles of brokers, dealers, or exchanges, nor do any individual components fulfill those functions. The regulatory framework applicable to those intermediaries reflects the fact that they concentrate responsibility, discretion, and access to nonpublic information in a single actor. Where those elements are not present in the same way, and where system behavior is governed by transparent, rule-based processes rather than intermediary judgment, the rationale for applying those classifications does not carry through.⁴

A comparable error occurs when liquidity providers are likened to dealers or market makers. Dealers and market makers are defined by specific conduct, including quoting prices, and presenting oneself as willing to trade, rather than by mere exposure to risk or earning fees.⁵ Liquidity providers do not engage in such activities; they neither set prices, nor interact with counterparties. Their participation is governed entirely by protocol rules. The same mischaracterization appears in discussions of interfaces and access points. Providing software that enables easier interaction with the AMM is fundamentally distinct from participating in transactions. Interfaces do not custody assets, receive orders, or execute trades, and users may interact directly with the underlying contracts.⁶ The relevant inquiry is whether an entity assumes responsibilities analogous to those of an intermediary, not whether it merely facilitates interaction.

A further source of confusion arises in discussions of governance. Much of the current commentary presumes that the existence of governance mechanisms within AMMs signifies a form of ongoing control comparable to that exercised by operators of traditional trading systems. This presumption reflects a misunderstanding of both the nature and function of governance in these systems. In traditional markets, control is exercised through the continuous operation of the

⁴ Craig M. Lewis, *Economic Analysis of Decentralized Finance (“DeFi”) Applications “Safe Harbor” Proposal*, SEC Crypto Task Force Submission, Vanderbilt University (Apr. 7, 2026) (“Lewis”), ¶ 27 (“Although certain DeFi functions resemble services provided by traditional financial intermediaries, their operational arrangements are fundamentally different. In traditional finance, a single firm, such as a broker-dealer, may bundle execution, custody, clearing, settlement, and recordkeeping. In DeFi, these functions are disaggregated across independent components” governed by “autonomous smart contracts that function according to transparent and predetermined rules,” “removing the need for human intervention and the potential for arbitrary actions”); Lewis ¶ 38 (“This structure mitigates certain risks, such as intermediary insolvency, comingling, or unauthorized rehypothecation, that broker-dealer regulations are designed to address”); Lewis ¶ 12 (DeFi “shift[s] [away from] the traditional principal gateway role,” posing questions for regulators “whose frameworks are designed to govern entities (the brokers) rather than neutral software that interfaces with permissionless and autonomous blockchain systems”).

⁵ Harvey et al. at 5 (contrasting DEX and CEX liquidity supply and noting that unlike a CEX market maker, a DEX liquidity provider “invests in the pool without knowing the direction of the incoming orders” and bears an obligation that “persists even after a trade execution,” as capital automatically converts to the other side of the market, conduct bearing no resemblance to active quoting and discretionary trading); Malinova & Park (demonstrating that AMM liquidity providers use assets “just sitting at brokerages” to earn “passive (fee) income,” bearing only the incremental adverse selection loss relative to a buy-and-hold position, the economics of a passive asset holder, not a dealer); Lewis ¶ 29 (“DeFi transactions are typically executed by the underlying blockchain network strictly according to the smart contract’s parameters once a user broadcasts the trade, with no role for human discretion or intervention”).

⁶ Lewis ¶ 40 (describing a DeFi front-end as “a piece of front-end software, similar to a web browser, designed to provide a user-friendly method for formatting messages and transmitting them to the underlying protocol,” noting that an app developer’s control over its website “does not extend to control over the underlying infrastructure”). See also Lewis ¶ 39 (“[S]mart contracts execute logic deterministically and exist independently of any specific user interface”).

system: exchanges manage access, oversee order interaction, and participate in execution in real time, while broker-dealers exercise discretion in handling customer activity. Governance in AMMs is fundamentally different. It does not entail handling transactions or exercising discretion over execution. Rather, it concerns the collective modification of particular and limited software parameters over time, such as fee structures or contract upgrades. While these parameters may be adjusted by a distinct and diverse collective, the fundamental pre-defined rules of the AMM do not change.

Importantly, the mere existence of governance mechanisms does not, on its own, create the type of ongoing involvement or discretionary control that would trigger regulatory obligations under the federal securities laws. Legal responsibilities should attach only where governance participants exercise functions analogous to intermediaries, such as receiving or handling orders, executing transactions on behalf of others, or exercising discretion over individual trades. Where governance is limited to episodic adjustments regarding protocol parameters, without the ability to influence or intervene in real-time operations, it should not result in intermediary classification or related regulatory requirements. This distinction is crucial to ensure that policy responses are tailored to actual market reality and conduct. Governance participants do not receive orders, act on behalf of users, or determine how individual transactions are executed. Their involvement is episodic and prospective, rather than continuous and operational. For instance, governance processes associated with the Uniswap Protocol may determine whether a fee parameter is enabled, but it does not, nor can it ever permit any participant to intervene in the execution of individual swaps. Treating governance as evidence of intermediary activity conflates the capacity to modify a system over time with the operation of that system in effecting transactions. The federal securities laws address the latter and do not treat the former, standing alone, as sufficient to establish the presence of an intermediary⁷. Nor do governance mechanisms inherently reintroduce the forms of discretion that define intermediary roles. They do not permit participants to select counterparties, alter execution on a transaction-by-transaction basis, or otherwise assume the functions performed by brokers, dealers, or exchanges.

These recurring mischaracterizations often rest on the mistaken broader assumption that the functions associated with intermediaries must exist somewhere within any system that enables trading, even if they are not readily apparent. That assumption does not hold here. The federal securities laws regulate specific forms of conduct, including acting for the account of others, handling orders, bringing together trading interests, and exercising discretion over execution. In AMMs, those forms of conduct are not redistributed across new actors. They are simply not present.

Policy Recommendations

The function of AMMs directly affects the application of federal securities laws. While some observers argue that, because AMMs facilitate trading and provide mechanisms for price discovery, they functionally replicate the roles of intermediaries and should be regulated accordingly, this view overlooks essential differences in their operations and responsibilities.

⁷ See, e.g., Sections 3(a)(4), 3(a)(5), and 3(a)(1) of the Securities Exchange Act of 1934 (defining broker, dealer, and exchange in terms of specified activities and functions).

Proponents of this perspective contend that the absence of a traditional intermediary may increase risks for investors and complicate market oversight. However, as the Commission evaluates these issues, the focus should be on assessing the actual conduct occurring, rather than fitting these systems into existing categories by analogy. Where conduct does not align with established intermediary roles, regulatory conclusions should not be based on those faulty assumptions. Much of the current debate assumes that any trading mechanism must include the functional equivalent of traditional intermediaries, leading to efforts to identify broker, dealer, or exchange activity through faulty analogies or misrepresentations of the actual functions of different components of an AMM stack. As discussed above, this approach risks mischaracterizing the reality of these systems.

Federal securities laws regulate conduct, not systems in the abstract. Concepts such as effecting transactions for others, handling orders, aggregating trading interest, and exercising discretion over execution correspond to specific, identifiable market participation. Where these forms of conduct are present, existing frameworks may apply. Where they are absent, extending those frameworks by analogy risks imposing obligations misaligned with the actual operation of these systems and does not protect their users.

A central flaw in SIFMA's framework is its assumption that the various functions involved in an AMM transaction can be collapsed into a single intermediary role simply because trading occurs. SIFMA identifies developers, liquidity providers, interfaces, validators, searchers, and other participants, and assigns each a fragment of what might resemble a traditional market function, and then treats those fragments as collectively equivalent to a broker, dealer, or exchange. The fact that multiple independent participants contribute to the operation of a protocol does not mean they jointly perform the legal or economic role of an intermediary. A smart contract executing fixed logic, a liquidity provider supplying passive capital, an interface displaying information, and network participants ordering transactions are performing distinct and limited functions. None of them, individually or collectively, involves receiving customer orders, acting for the account of others, or exercising discretionary control over execution in the manner contemplated by the federal securities laws.

Preserving that separation is one of the principal advantages of decentralized market structure, beyond mere technical distinction from traditional markets. Traditional intermediaries concentrate order flow, pricing discretion, customer relationships, and access to nonpublic information within a single institution, creating both conflicts of interest and single points of failure that justify regulation. AMMs disaggregate those functions and, in many cases, replace them with transparent, publicly observable rules. That separation improves price discovery by allowing competition to occur across liquidity sources, interfaces, routing mechanisms, and execution pathways, rather than through a single gatekeeper controlling market access and information. It also reduces the structural dependence on any one actor's judgment or incentives. Reassembling those distinct functions into a single intermediary framework not only misstates how AMMs operate, but risks undermining the very features of competition, transparency, and resilience that make these systems a meaningful improvement over traditional market structure.

A more effective approach begins with a careful examination of how responsibility is allocated. Some participants design or contribute to protocol infrastructure; others provide capital

or interact with the infrastructure for their own account; and some may offer services that resemble traditional intermediary functions. These roles are distinct and do not merge into a single composite actor or necessitate registration. Treating them as interchangeable and collapsible obscures the distinction between system participation and intermediation.

For regulatory analysis, this distinction should be maintained clearly. When an entity undertakes activities consistent with established intermediary functions, such as receiving or handling orders, acting for others, or exercising discretion over execution, those activities can be evaluated under existing frameworks. However, in the absence of these elements, the mere presence of a trading mechanism should not result in intermediary classification.

This approach also enables a more targeted response to risk. Instead of mapping novel systems onto legacy categories, the Commission should focus on specific activities that raise investor protection or market integrity concerns, such as custody, disclosures, user interfaces, transaction routing, or related services. Directly addressing these activities would allow for more precise and effective regulation than treating the entire system as the regulated entity. To translate this approach into policy, we recommend that the Commission issue guidance clarifying how existing rules apply to discrete functions within AMMs, such as asset custody or user interface operations. In addition, the Commission could consider initiating targeted rulemaking to define the regulatory responsibilities of entities that exercise discretion on behalf of users or access nonpublic information that confers an advantage over other market participants, while clarifying that protocol developers and passive liquidity providers are not subject to intermediary classification. Where appropriate, issuing no-action relief could help address legal uncertainty for innovators operating in good faith, pending more comprehensive regulatory clarity. Each of these steps would better align the Commission's oversight with the actual conduct of market participants, promoting investor protection without unnecessarily stifling innovation.⁸

None of this suggests that AMMs fall outside the scope of regulatory interest. To the contrary, they present questions that merit careful consideration. But those questions are better addressed by focusing on the specific activities that give rise to regulatory concerns, rather than by mapping legacy categories onto systems that do not share the underlying structure those categories were designed to address. Anchoring analysis in how these systems actually operate will better support both investor protection and the development of coherent, workable standards.

We appreciate the Commission's continued attention to these important issues and the opportunity to contribute to this discussion. As the Commission evaluates the application of existing regulatory frameworks in this context, it is critical that analysis be grounded in the actual mechanics of these systems. Approaches that rely solely on analogy risk obscuring, rather than

⁸ Harvey et al. at 14, 13 (recommending that regulators “let this innovation play out in a Safe Harbor or Regulatory Sandbox environment” and observing that “[t]he original statutes were designed to protect users—not to sanction them”). Harvey et al. further observe that any regulatory strategy focused on “the DEX itself” “makes little sense because a DEX is an immutable algorithm deployed to a blockchain.” Lewis ¶ 57 (“[M]andating broker-dealer registration would establish a legal structure effectively requiring apps to engage in the very activities that introduce heightened risk such as taking custody of customer assets”); Lewis ¶ 55 (“[R]equiring app developers to register as broker-dealers—is not only impractical, but it also undermines the technological benefits of blockchains by reintroducing the agency risks associated with centralized intermediaries”).

clarifying, the relevant conduct. A more precise, activity-based approach will better advance investor protection while preserving the integrity of the statutory framework.

Sincerely,

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