

Jacek Czarnecki

29 January 2021

Regulatory Challenges of the Decentralized Securities Trading

Abstract

1. Introduction

The rise of Decentralized Finance (DeFi) over the past months and years has manifested itself in a few key areas, most notably lending, derivatives, and—last but not least—trading and exchanges. So called decentralized exchanges (DEX-es) are now an archetypical example of the DeFi movement which has gotten significant traction, especially over the course of 2020. Decentralized exchanges were also one the subject of the earliest examples of legal interpretations and actual regulatory enforcement with regard to Decentralized Finance products (the US SEC enforcement action directed at EtherDelta in 2018).

2. History and types of decentralized exchanges

History of decentralized exchange protocols and solutions dates back to the early days of Bitcoin and other cryptocurrencies. The foundational basis for the recent rise of market significance of decentralized exchange protocols and solutions has been the emergence of blockchains which feature smart contract functionalities, such as Ethereum, Tezos, or more recently Solana.

There is a variety of decentralized exchange types and designs explored by the market participants both in theory and in practice. They range from simple “bulletin board” type of OTC trading protocols (e.g., Airswap, 0x OTC, or SimpleMarket), hybrid or not fully decentralized solutions (e.g., IDEX, EtherDelta, 0x), fully on-chain orderbook-based designs (e.g., OasisDEX, and more recently Serum) as well as automated market makers (AMMs) currently dominating the market, such as Uniswap, Balancer, Curve or SushiSwap. Currently, new designs are also being considered for various technological scaling solutions, especially those based on so called “layer 2”. The decentralized exchange space is currently very dynamic, and new improvements and ideas with respect to further innovate on that market are being continuously proposed.

Traditionally, decentralized exchanges are used for assets native for their underlying blockchain infrastructures, that is crypto-assets. However, especially in the past weeks and months one can see examples of trading of actual, “traditional” (such as equity-based

instruments or typical derivatives) securities using decentralized exchange protocols. The most recent example is trading of tokens structured as various types of derivatives of stock of certain companies, most notably GameStop Corp., which were subject to short squeeze and market controversies in January 2021. It cannot be excluded that these types of events may actually catalyze and accelerate the existing trend of utilizing the decentralized exchange protocols for trading of not only crypto-assets (including those crypto-assets which may be in some jurisdictions treated as securities or other regulated products), but also “traditional” securities.

3. Attributes of decentralized exchange protocols

Decentralized exchange solutions and protocols have a number of characteristics, some of them being particularly common in specific designs, architectures and actual implementations:

- **Peer-to-peer trading and settlement**, which allows completion of various stages in a “security life cycle” without use of traditional intermediaries such as brokers, exchanges, central securities depositories, etc.
- **Use of the underlying blockchain infrastructure as the settlement layer**, instead of specialized intermediaries and custodians commonly used on traditional financial markets.
- **Non-custodial design**, the details of which differ across various protocols (e.g., in terms of an escrow or no-escrow designs).
- **Permissionless design**, which makes it possible for anyone to use the decentralized exchange protocol via any front-end user interface.
- **Transparency** allowing anyone to observe trading activity on the blockchain.
- **Composability**, which contributes towards building shared liquidity across various decentralized exchange protocols, as well as allows the protocols to serve other financial functions beyond mere trading (e.g., asset management in the case of some AMMs).

4. Decentralized securities trading and related regulatory challenges

I propose that by decentralized securities trading we understand a situation in which a specific security at certain stages of its life cycle (which can be simplified as issuance, trading, clearing, and settlement) is processed through a decentralized infrastructure which materially influences the process through which the intended economic activity takes place.

The goal of the paper is to outline and analyze regulatory challenges which stem from the decentralized securities trading. It will cover the following, among others:

- **Effective regulatory methods**, with respect to both primary and secondary markets—the former include novel issuance methods with no issuers involved (including so called yield farming), the latter are related to the fact of lack of existence of intermediaries traditionally subject to securities markets’ regulatory regimes.
- **Investor protection.**
- **Financial market infrastructure considerations.** Decentralized securities trading still takes place on specific infrastructures, which aim at replacing the current FMIs, usually subject to very strict regulatory regimes.
- **AML/KYC and sanctions.** Very well-known AML/KYC and sanctions issues related to crypto-assets and Decentralized Finance, related to, e.g., non-custodial (unhosted) wallets are exacerbated when decentralized exchange protocols are used for “mainstream” use cases such as securities trading.
- **Privacy.** While transparency is often indicated as one of key value propositions of DeFi, at the same time it poses privacy risks to market participants.
- **Financial stability.** The rapidly increasing use of decentralized securities trading especially using relatively immature and fragile blockchain infrastructures and novel technologies and protocols may cause financial stability concerns.
- **Settlement finality** in the context of blockchain-based decentralized exchange protocols and solutions.
- **Market abuse / manipulation and fraud risks**, such as insider trading or frontrunning.
- **Variety of actors involved.** Decentralized securities trading does not only remove intermediaries, but actually includes new types of actors who fulfill different roles, such as: developers, asset issuers, miners / validators of the underlying networks, user interface operators, governance actors, etc.
- **Overall complexity.** Large differences across various decentralized protocols make it difficult to both use traditional regulatory categories on financial markets (such as various trade venues as recognized by the law) as well as define new one and determine boundaries between them.
- **Governance.** Very often decentralized exchange protocols are actually governed by certain communities. The legal ramifications of such governance remain unclear.