

Crypto-Asset Market Structure

Presentation to SEC Division of Trading & Markets

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- I. Types of crypto-assets
 - A. Payment / Store-of-Value Tokens
 - B. Platform Tokens
 - C. Utility Tokens
 - 1. Utility value derived from defined goods or services
 - 2. Utility value based on value of network whose use the token governs

- II. Primary Market Considerations
 - A. Investor Protection Issues/Concerns
 - B. Capital Raising Issues / Concerns

- III. Secondary Trading Structural Issues
 - A. Uncoordinated Markets
 - B. Price Discovery Concerns
 - C. Structural Market Deficiencies & Manipulation Concerns
 - D. Investor Access Issues

- IV. Policy Recommendations
 - A. Issue ICO guidelines & registration requirements for tokenized securities
 - B. **If** crypto-assets are deemed securities, manage the transition to regulated trading platforms carefully

There are essentially 3 types of tokens being traded today:

1. Payment or Store-of-Value tokens, whose purpose is to be a means of exchange or represent wealth.
2. Platform tokens, whose value is based on the ability for the token and its network to be used by applications such as “smart contracts.”
3. Utility tokens, which are either redeemable for goods & services or required for the use of a network.

Tokens such as BitCoin and its “forks” which were built to facilitate trusted transactions between counterparties with no previous relationship.

- These tokens are referred to as “Crypto Currencies”, and have been declared either “property” or a “commodity” by other regulators.
- Unlike currencies that are the legal tender of a sovereign government, there are no banks, central or otherwise, directly involved in the supply or policy setting of these currencies.
 - Rather than banks, supply is set by network rules and voting, while “miners,” using “proof of work” verify transactions.
 - The future value of these tokens is primarily related to acceptance, based on how people, other than the founders, interact with and use the tokens.

Tokens, such as Ethereum, whose value is based, at least in part, on the ability for the token and its network to be used for diverse applications.

- These tokens are also often grouped with crypto-currencies, but they differ in a couple of key ways:
 - While they are often used as a medium of exchange, they have other purposes
 - Most (if not all) of these platform tokens are under development to expand the number of purposes they could be used for, as well as their efficiency
- The future value of these tokens are clearly related to the efforts of the founders to improve their usability and efficiency

Tokens that have defined uses, fall into two categories:

1. The token is a method for issuers to get paid up front for selling goods & services they already offer.
2. The tokens value is expected to grow over time as the network improves &/or creates new uses for the token, that drive increased demand.

- **Demand** -- The magnitude & pace of the ICO market demonstrates a significant demand from investors for access to early stage investing, particularly in new and emerging technology.
 - With 50% fewer public companies today than 15 years ago, and companies staying private longer than ever before, there are fewer growth opportunities.
 - Early stage equity investing today is limited almost exclusively to VC and PE funds, with limited public participation.
- **Global Scope** -- The ICO phenomenon is global, meaning that there is a very real risk of driving important technological innovation offshore if the U.S. regulators take a “heavy handed” approach
 - This is already happening, due to the threat of regulation and regulatory uncertainty

Despite the significant potential of the projects being offered in ICO's, there are real risks:

- Many ICOs are offered very early-stage, without product, priorities, or project or network governance. While this is not *a priori* wrong, it does mean useful disclosures are vital.
 - This should not be used as an excuse to limit ICOs to the wealthy, however, as early stage investing could provide significant upward mobility & wealth is not a predictor of the ability to research the value of these networks.
- Many ICOs are outright frauds, with marketing hype that uses social media reminiscent of the “chat rooms” from the dot com bubble.
 - Existing fraud rules should cover this, but it is important to move quickly & establish well-understood enforcement standards for issuers.
 - Also remember, that being “registered” as equity securities did not prevent widespread investor losses in the dot com bubble. Those regulations are **not** a panacea.

Issuers today face significant uncertainty over future regulations in the U.S.

- U.S. regulatory uncertainty creates a major competitive problem, where the “winners” are the ones that **ignore** or **circumvent the** most likely **rules**...
 - Projects raising \$20-\$30 million or more relatively quickly as “utility token” ICOs, or overseas ICOs, that promise post ICO liquidity on existing exchanges. This puts projects that intend to register under Reg D or A+ at a competitive disadvantage due to higher costs, slower time to market & lower post ICO liquidity.
- Legal fees for Reg A+ or Reg D offerings can easily surpass \$500k, while ICO disclosures using industry templates that provide more worthwhile information, could be created for a fraction of that cost.
- Forcing AML and investor accreditation on the issuer, post ICO, is a problem for decentralized blockchains; AML, in particular, should be enforced in the secondary market by the brokers and exchanges where the token trades.

Using Data from CoinRoutes, we can see that most crypto markets accessible to US investors, are crossed most of the time. (meaning the best bid is higher than the best offer)

- BitCoin-USD, even when filtering out small quotes, was crossed 98% of the time the past 2 weeks, and 71% of the time by more than 0.25%
- Ethereum-USD, was crossed 89% of the time, 60% by more than 0.25%
- Many Crypto-Crypto pairs, traded on “exchanges” which accept US clients for the last 2 weeks are similar:
 - XRP (Ripple) vs BitCoin was crossed 98% of the time, 56% by more than 0.25%
 - ADA (Cardano) vs BitCoin was crossed 81% of the time, 48% by more than 0.25%
 - XLM (Stellar Lumens) vs BitCoin was crossed 98% of the time, 75% by more than 0.25%

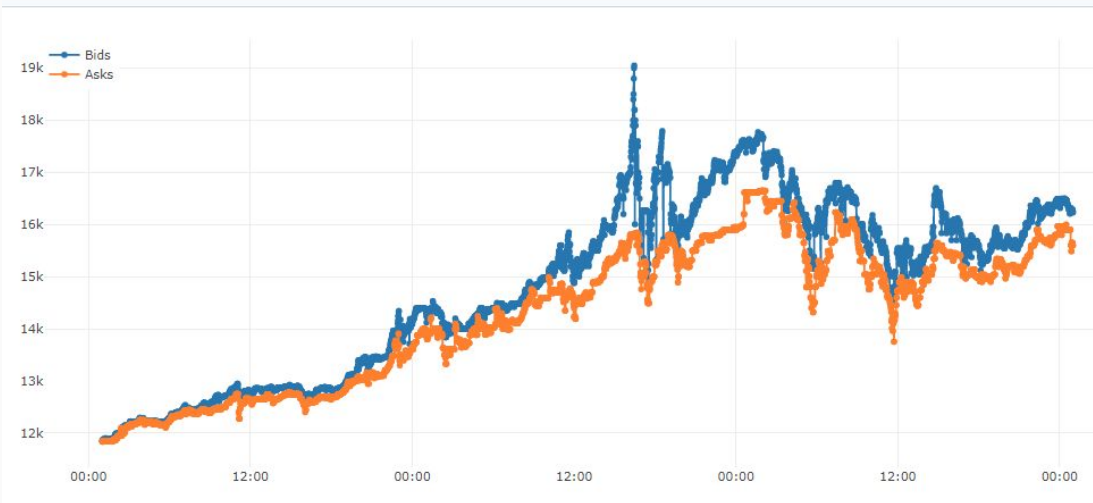
Crossed markets create an important investor protection issue. Consider what happened in December with Bitcoin:

This example, using the CoinRoutes software, shows the BitCoin vs. USD pair, when Coinbase(owner of GDAX) was #1 on the app store in December.

The best bid was on GDAX for **over \$3000 higher** than the best offer elsewhere, at its peak, and over \$1000 higher for long periods of time

⇒ ***This was a serious “best execution” issue, directly impacting retail investors***

Historical CBBO Chart



While the displayed markets are uncoordinated, the trend towards distributed models without public displayed prices threatens to obscure price discovery even more:

- AirSwap is a “peer to peer” negotiation mechanism where prices are checked against third parties without regard to displayed markets.
- Republic Networks is a multi-party dark pool where prices are input by individual parties, without any interaction with displayed markets
- Popular market making platforms have no responsibility to match displayed markets
- Retail platforms such as Coinbase and RobinHood have very opaque pricing up front and have no checks vs other displayed markets

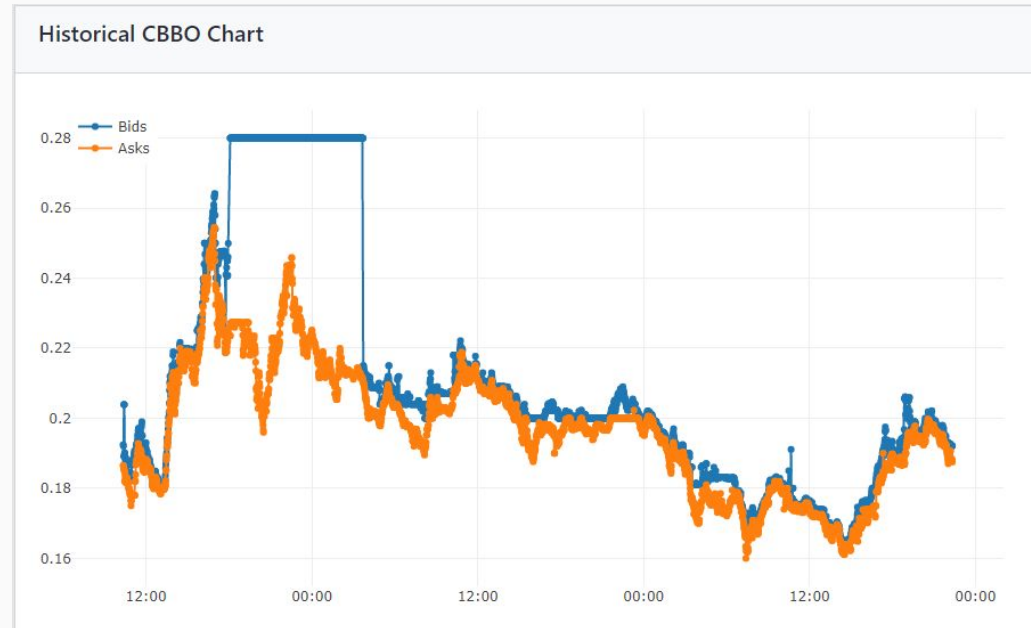
⇒ While prescriptive regulations might be overkill, an obligation on all platforms to defend “Best Execution” is warranted.

Many “exchanges” lack rudimentary procedures for opening or reopening securities after a trading halt.

This example, using the CoinRoutes software, shows the BitCoin Cash vs. BitCoin pair, when GDAX tried, unsuccessfully, to open the pair for trading on their platform.

For several hours, the bid published on GDAX averaged over **15% higher** than the best offer elsewhere, and, at the end of that period, GDAX postponed trading the pair for around a month.

⇒ This example shows a large “exchange” showing an inaccessible bid far above the market for hours, potentially misleading investors.



There is a significant risk that market participants engage in various manipulative activities on the unregulated crypto “exchanges” including:

- Spoofing -- As shown earlier, entire markets can have prices that are out of line, so this type of behavior is hard to detect.
- Wash Sales -- Many exchanges have no protection to prevent participants from trading with themselves to create the illusion of volume.
 - This is particularly troubling because of all the derivative products that use “indices” which volume weight traded volumes and include exchanges that rumors constantly circulate concerning wash sale volumes.

Unlike the equity markets with “fair access” rules, the crypto markets have significant issues regarding access to markets and data.

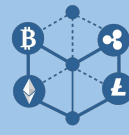
- In the U.S. alone, many “exchanges” are only licensed in specific states and several will not allow residents from certain states to participate.
- Despite serving a set of global products, many exchanges will not accept US resident accounts due to fear of regulation.
 - This might actually be a good outcome, but US entities continue to use data from these exchanges, for products traded by US investors.
- There are no rules on market data or access, meaning that exchanges can play favorites with clients & vendors. At least one exchange tries to enforce a contract for data use, that would force their exclusion from anyone building a composite best bid or offer (CBBO).
 - This is despite the fact that a CBBO is the only way for proper best execution metrics to be developed and utilized to protect investors.

Clarity needs to be provided both for private and registered transactions for token issuance. This would ideally be accomplished through a Regulation ICO, but could be done through exemptive relief and small changes to Reg D and Reg A+

- Reg A+ should be modified or exemptions should be written to accommodate non-equity securities
 - Disclosures should focus on project and network governance rather than corporate financials and structure, as one example
 - The process should be streamlined in order to support innovation, but rules for marketing and promotion should be developed in concert with the industry, while enforcement against violations should be increased.
 - Liquidity, post ICO, should be immediate, as long as there are ATs willing to “list” the tokens.
- Reg D should also have disclosure rules and processes adjusted for non-equity securities and specific delegation of KYC (for accredited investor secondary trading) should be to the ATs that trade those securities.

IF crypto-assets are deemed securities, that would mean current “exchanges” & firms who trade for U.S. investors would become regulated entities. This should be managed via a transition process that would minimize losses & disruption

- All current exchanges that trade tokens deemed securities should be granted a “grace period” to apply to become Alternative Trading Systems.
 - Without a grace period, investors could suffer serious harm as asset prices fall when they have no place to trade those assets.
 - This period would also give the SEC time to work with the industry to adopt standards relevant to crypto assets for the ATS filings.
- All firms that need to become broker dealers, as a result, also should be granted a grace period.
 - AML and KYC monitoring, would then be the responsibility of the exchanges and brokers, as that is the most efficient place to do such checks.
- Miners should be exempted from broker registration, as they provide no advice & have no discretion over investor assets or trades.



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