

February 15, 2019

Christopher Kirkpatrick, Secretary
U.S. Commodity Futures Trading Commission
3 Lafayette Centre,
1155 21st Street NW
Washington, DC 20581

Re: Request for Input on Crypto-Asset Mechanics and Markets (83 FR 64563)

Dear Mr. Kirkpatrick:

Thank you for the opportunity to comment on the U.S. Commodity Futures Trading Commission's (the "**Commission's**") request for input on crypto-asset mechanics and markets relating to Ether and the Ethereum blockchain (the "**RFI**"). Coinbase, Inc. and its affiliates ("**Coinbase**") supports and applauds the Commission's outreach to the digital asset industry as it evaluates derivatives and other products in this evolving asset class.

Coinbase is a digital currency brokerage, exchange, and custody platform offering services for a variety of digital assets, including Ether. We believe that a robust derivatives market for digital assets will help increase the utility of digital assets and encourage their adoption.

Coinbase wishes to provide input on several of the questions asked by the Commission. The questions below reflect the numbering in the RFI.

Markets, Oversight and Regulation

15. Are there protections or impediments that would prevent market participants or other actors from intentionally disrupting the normal function of the Ethereum Network in an attempt to distort or disrupt the Ether market?

There are protections and impediments limiting the ability of parties to intentionally disrupt or distort the Ethereum Network and the Ether market. Below are some examples.

A. 51% Attack

i. Risk. A "**51% attack**" is the use of more than 50% of the computing power on a Proof of Work ("**POW**") blockchain, such as the Ethereum Network, to rewrite prior confirmed transactions on that blockchain. The function of mining in a POW blockchain is to add transactions to the universal, shared transaction history. This is done by producing blocks, which are bundles of transactions, and defining the canonical history of transactions as the longest chain of blocks. If a single miner (or coordinated group of miners) gains control of more computing power than the entirety of the rest of the network (i.e., greater than 50%), this miner could pick an arbitrary previous block from which to extend an alternative block history. If the miner retained control of more than 51% for an indefinite period, it would eventually outpace the

block history produced by the rest of the network and define a new canonical transaction history. Such an action is called a blockchain reorganization, also known as a “51% attack”

ii. Mitigant. There is no absolute way to prevent a 51% attack. However, industry participants can mitigate the impact of an attack by requiring high transaction confirmation levels, particularly on thinly-capitalized blockchains (i.e., requiring more than 51% computing power to confirm transactions). In addition, the impact can be mitigated by early detection tools that look for anomalies in the blockchain, and by having protocols to detect evidence of possible attacks during times of heightened risk, such as during a blockchain network upgrade (a “fork”).

B. Spam attack

i. Risk. Like many public blockchains, Ethereum has a limited capacity. Motivated parties can mount spam attacks by paying for a large number of transactions that prevent other transactions from being included. Spam attacks have typically occurred on the Ethereum testnet, a testing environment that is separate from the actual Ether blockchain. While these are costly to mount over a long period, they may be effective if even a few blocks are full during a critical period, such as when two parties are engaging in a trade.

ii. Mitigant. Currently, there is no method to mitigate this risk.

C. Upgrading

i. Risk. Each time the Ethereum network or third-parties create a new “client” to improve the Ethereum network, there is a risk that the new client will contain a bug. A client is a piece of software that links a program like a decentralized application to the Ethereum network to facilitate writing and validating transactions. A bug in a client can prevent the network from functioning as expected. A bug may also remove mining capacity that would otherwise protect the network.

ii. Mitigant. The risks posed by upgrading is mitigated by internal and external code reviews and a long rollout process, but there have been bugs discovered days before a new codebase is to be released.

D. Roll back

i. Risk. The Ethereum community (especially core developers and/or miners) can roll back transactions with which they do not agree. For example, during the DAO hack, the community largely agreed to roll back valid transactions that had been created due to a bug by the DAO development team.

ii. Mitigant. Over time, the community has expanded from the earliest days, reducing the likelihood of this event.

16. What impediments or risks exist to the reliable conversion of Ether to legal tender? How do these impediments or risks impact regulatory considerations for Commission registrants with respect to participating in any transactions in Ether, including the ability to obtain or demonstrate possession or control or otherwise hold Ether as collateral or on behalf of customers?

We address the questions in item 16 separately.

16.1 What impediments or risks exist to the reliable conversion of Ether to legal tender?

Ideally, market participants can engage in frictionless exchange of Ether to fiat currency. In order to do so, exchanges with banking relationships and fiat rails must be integrated into the Ether ecosystem to enable conversion based on fair market prices. In addition, these exchanges must have the following robust capabilities:

- Know-your-customer ("KYC") and anti-money laundering ("AML") controls, without which an exchange cannot access the international banking system in a compliant fashion;
- Internal controls and accounting to ensure that exchanges are able to appropriately track ownership of all assets held on the exchange's platform in their custody and track all incoming and outgoing fiat payments;
- Market surveillance tools capable of detecting and addressing manipulative activity on the exchange that could, among other things, distort the price of Ether; and
- Sufficient liquidity and broad market participation, which together allow the price to reflect the market value that a cross-section of the Ether community place on the asset at the time of a transaction.

The risks associated with the conversion of Ether to legal tender lie primarily in market manipulation. As with any freely-traded asset, the price of Ether can fluctuate based on a variety of factors. The greater the percentage of volume trading on exchanges with the capabilities listed above, the more that the market price will reflect true supply and demand for the product. Not coincidentally, markets with banking relationships and fiat rails are the markets most likely to offer oversight and compliance. For example, Coinbase, as well as some exchanges in the United States, Japan, and Europe, have fiat rails and the capabilities. Some of the largest players outside of those jurisdictions currently have neither.

On the contrary, dislocations in the price of Ether and other digital assets may be exacerbated by trading on markets without such oversight, where manipulative activity may, and unregulated, highly-leveraged trading does, occur. Traders' ability to move digital assets between exchanges in a matter of minutes has allowed arbitrageurs to dampen the impact of dislocations arising out of these factors.

Over-the-counter (“OTC”) trading, either by market makers on a principal basis or through agency-only OTC desks (such as that operated by Coinbase), offers another method to convert Ether into fiat currency. OTC markets offer the ability to convert large amounts of digital assets while reducing the market price impact, similar to block trading in futures. OTC trading does not however, offer the price discovery capabilities of a lit exchange.

Market participants generally have access to multiple venues for converting Ether to fiat currency.

16.2 How do these impediments or risks impact regulatory considerations for Commission registrants with respect to participating in any transactions in Ether, including the ability to obtain or demonstrate possession or control or otherwise hold Ether as collateral or on behalf of customers?

Commission registrants should be able to obtain and demonstrate possession and control of Ether collateral for futures contracts regardless of impediments to conversion of Ether to fiat. The industry has developed custody solutions that would allow Ether to be held by Futures Commission Merchants, Derivatives Clearing Organizations, or warehouse/depositories in a secure manner. Liquid spot markets provide a way to value Ether held as collateral, including spot markets that facilitate conversion to fiat through banking rails. Additionally, a robust OTC market can help Commission registrants liquidate larger amounts of Ether that could otherwise impact market prices.

17. How would the introduction of derivative contracts on Ether potentially change or modify the incentive structures that underlie a proof of stake consensus model?

Derivatives contracts could impact a POS consensus model if the contracts result in ambiguity over ownership of an asset and ability to stake the asset. For physically-delivered futures, Ether may need to be posted as collateral with a clearing member, warehouse/depository, or clearing house to satisfy margin requirements and meet delivery obligation. A large open interest on physically-delivered Ether futures could result in a significant portion of mined Ether being subject to lock up as collateral. The industry would need to establish standards around who could stake those Ether held as collateral and how “slashing” may impact collateral levels. Otherwise, a large percentage of Ether available for staking may be removed from that process.

To date, exchange traded derivatives on digital currencies have been financially settled. Because the underlying assets to a financially settled futures would not be subject to any liens during the life of the futures contract, financially settled futures would allow owners to stake their ether, earning income through staking, and hedge the price risk of the underlying Ether.

18. Given the evolving nature of the Ether cash markets underlying potential Ether derivative contracts, what are the commercial risk management needs for a derivative contract on Ether?

Commercial hedging in digital currency is typically focused on miners or stakers, who have large fixed and operating costs but volatile revenue streams. Commercial hedging for Ether may expand to additional business types because Ethereum supports general computing through smart contracts and general commercial payments. An example of hedging for commercial payments would be a manufacturer selling their goods to client whom they have no commercial relationship with. The parties could execute a smart contract to custody payment, verify delivery of the goods, and complete the transaction. This all occurs on-chain in a verifiable and trustless fashion. The manufacturer is at risk for the volatility of the Ether payment and cost of using the Ethereum network. A derivative for either the value of Ethereum, physical Ethereum, or the cost of sending transactions on the network (gas) could allow all market risk to be hedged. This allows the commercial operation of the business atop the Ethereum network without volatility in business costs. The potential innovation available as a result is substantial.

Standard industry practices in the futures markets such as fair price discovery, global distribution facilitated by Futures Commission Merchants, and position limits strengthen the ability for business innovation in the Ethereum ecosystem.

In general, we do not expect that cash markets will be the driver of the need for commercial risk management. Rather, it will be driven by changes in the way that the Ethereum network is used for commerce over time. For example, the need for commercial risk management when using the Ethereum network may be increased in cases where parties denominate payment obligations in Ether, and reduced in cases where the parties agree to transact in a stablecoin that is denominated in a fiat currency or pegged to another asset. Over time, if more commerce is denominated in Ether, then such businesses will provide increasing levels of natural hedge against the price of Ethereum.

19. Please list any potential impacts on Ether and the Ethereum Network that may arise from the listing or trading of derivative contracts on Ether.

Listing exchange-traded futures and derivatives may reduce price volatility by giving end users the the ability to hedge both their commercial Ether usage and their revenues earned in Ether. Reduced price volatility could result in greater commercial usage, with corresponding increased demand for blockchain transactions to be recorded.

Financially settled futures products would not likely have a substantial impact on the Ethereum network. Such contracts would not involve delivery of Ether between counterparties and thus not be represented on the blockchain. Physically settled futures could potentially require recording blockchain transactions to effect delivery of Ether during settlement.

20. Are there any types of trader or intermediary conduct that has occurred in the international Ether derivative markets that raise market risks or challenges and should be monitored closely by trading venues or regulators?

Coinbase believes that a robust and properly regulated derivatives market on digital assets is necessary for the asset class to mature and offer better hedging and price discovery. However, the Commission should be aware of numerous derivatives products and highly leveraged margin products based on Ether available to United States residents. Some of these offer leverage at ratios up to 100:1.

21. What other factors could impact the Commission’s ability to properly oversee or monitor trading in derivative contracts on Ether as well as the underlying Ether cash markets?

The Commission’s ability to oversee or monitor spot and derivatives markets on Ether is negatively impacted by the large percentage of trading on unregulated markets outside the United States. According to data compiled by coinmarketcap.com, spot market trading volumes are concentrated in markets outside the U.S.

As for derivatives, Ether derivatives on offshore and unregulated derivatives exchanges will likely exceed volumes in regulated U.S. futures exchanges in the near future. For example, trading volume on one offshore Bitcoin derivatives exchange is consistently five to six times larger than trading in the CME Bitcoin futures product. Many offshore exchanges are operated from countries with little or no regulatory oversight. The exchanges themselves engage in little or no KYC/AML. Thus, the Commission may have little or no ability to monitor the vast majority of trading in many of these products even through international channels such as the International Organization of Securities Commissioners (“IOSCO”).


The Ether blockchain offers transparency into on-chain transactions and smart contracts. However, spot and derivatives market transactions are generally not recorded on the blockchain. For many of the largest exchanges, only the movement of assets onto and off of these platforms are posted to the blockchain. On-exchange transactions are generally recorded on internal ledgers. As a result, the Commission would not have access to comprehensive audit trail data sufficient to identify potentially manipulative activity on spot or derivatives exchanges not under its jurisdiction.

Decentralized exchanges and relays, which rely on smart contracts to settle trades and do not take custody of any assets, offer the most on-chain transparency. At present, however, these markets are small compared to centralized derivatives and spot exchanges.

25. Are there any best practices for conducting an independent audit of Ether deposits?

Industry participants, including Coinbase, are working with national auditing firms to develop best practices for independently auditing Ether deposits.

Thank you for the opportunity to comment on the proposed guidance. If you have any questions on our comment letter, please feel free to contact me at brian.brooks@coinbase.com.

Sincerely,

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Cc: Daniel Gorfine, Chief Innovation Officer and LabCFTC Director, CFTC
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