



PREVENTING MANIPULATION IN THE DIGITAL ASSETS MARKET — WHY AND HOW?

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Introduction

Digital assets — a comparatively new asset class — are cryptographically secured assets that live only in digital form. They typically exist as entries on blockchains that are supported using distributed ledger technology (DLT). Examples of digital assets include cryptocurrencies, stablecoins, central bank digital currency (CBDC), non-fungible tokens (NFTs), security token offerings (STO), utility tokens, initial coin offerings (ICOs), and digital asset exchange-traded funds (ETFs).

When digital assets are sold, bought, or traded, information on that transaction — including the wallets from which the concerned asset was transferred from and to, and the transaction timestamp — gets recorded in a new “block” which is added at

the end of online “chain”. Post that, cryptographic calculations are executed by computers spread globally — called “validator pools” or “miners” — to make sure that the digital asset can’t be double-spent or forged.

Digital assets have taken strong foothold in the financial markets. As per estimates, globally, revenue in the digital assets segment is expected to reach US\$ 82,710 million by 2027 — showing a CAGR of 17.30% for the period 2022-2027.¹

Just as the traditionally traded securities and derivatives products, many of the digital assets are also traded. However, the two differ in their operational features. Refer below the main differences between traditionally traded instruments and digital assets.

Dimension	Traditionally Traded Instruments	Digital Assets
Ownership	Are maintained and owned by central intermediaries utilizing private ledgers.	Are maintained in decentralized digital ledgers. No single entity has complete control or ownership over the asset.
Trading hours	Are usually traded during fixed time window — as defined by the concerned exchange.	Are traded on private platform or exchange — which is globally accessible 24*7 throughout the year.
Transaction verification	Is done using the code from the concerned financial institution.	Is done using digital signature which is denoted by a code that is generated by algorithm.
Transaction path	Transaction path is monitored by trusted third-party.	Ledgers in blockchain monitor transaction path. The ledger is open for public access and is maintained by users.
Transaction cost	There are transaction costs.	Generally, lower transaction costs are involved in comparison with the traditionally traded instruments.
Price volatility	Relatively lower price fluctuation.	Wide fluctuation.
Regulatory oversight	Highly regulated.	Relatively less regulated. Regulations are still evolving.
Surveillance aspect	Surveillance is significantly advanced with regards to the usual market manipulative behaviors in over-the-counter (OTC) and exchange traded instruments.	Surveillance is still in nascent stage. Also, the complexities intrinsic to the digital asset market make its surveillance much more challenging.

Digital Assets and The Risk of Market Manipulation

Despite their increase in popularity, investors remain highly concerned about the risks of manipulation in the digital assets market. A key reason for this heightened concern is that digital assets — which are a novel and still evolving asset class — currently remain largely unregulated in most countries across the globe.

In digital assets market, there have been allegations of frequent price manipulation, of market participants getting defrauded,

and of digital assets being utilized to fund illicit activities such as drug trafficking and ransomware attacks. For example, the U.S. Securities and Exchange Commission (SEC) has cited possibility of manipulation in digital assets market as a key reason for it rejecting many applications for the spot bitcoin exchange-traded funds.

Refer below some of the common types of market manipulation that are conducted in the digital assets market.

Type	Elaboration
Spoofting and layering	<ul style="list-style-type: none"> In digital currency spoofing, manipulator traders create fake orders and try to artificially influence the price of a digital currency. By creating fake orders, they create false optimism or pessimism in the market. They sow uncertainty, doubt, and fear amongst the investors by placing large fake buy or sell orders — without having any real intention of executing these orders. This leads to many investors impulsively buying or selling the concerned digital currency, based upon sudden price movement. Later, the manipulator cancels the orders once the digital currency's price has moved in the direction, they desire it to. Layering is a type of spoofing. In this, the trader manipulates the price point of digital currency market by executing orders on opposing ends and at numerous price tiers. Layering utilizes the microeconomic principle that when there are more buyers and sellers of a securities, its prices would correspondingly swing up and down. Spoofting and layering are difficult to detect owing to the decentralized nature of digital asset marketplace. There is increasing practice of crypto whales utilizing buy and sell “walls” to conduct spoofing. These “walls” are basically price points that were produced by putting huge volumes of sell or buy orders, with the goal of falsely increasing a digital asset's price. Such artificially generated rapid price fluctuation of popular digital currencies has been capitalized by manipulators to benefit from flash crashes — by buying them at low prices and selling them once the prices get corrected.
Wash trading	<ul style="list-style-type: none"> In wash trading, a market player buys and sells the same digital asset to increase the trading activity and volume — to attract unsuspecting investors based upon such false signal, and ultimately affect the prices. The manipulator trader or a group of traders conduct trade amongst themselves to feed misleading volume and price signal, and thereby create illusion of market demand. In many cases, wash trading in cryptocurrency markets is done via creation of ghost accounts and through the unregulated exchanges. Spoofting is often accompanied by wash trading. The dynamic digital assets market is much more vulnerable to volume and price inflation. Often, the digital assets that are traded on smaller trading platforms and in low volumes are target of wash trading. Several cryptocurrency exchanges have allegedly leveraged wash trading to overstate their liquidity for attracting new investors and coin listings. As per a study, wash trading represents over 70% of volume on unregulated crypto exchanges.^{2,3}
Cross product manipulation	<ul style="list-style-type: none"> In this, manipulators trade in various digital assets sold in a market to manipulate the market. Cross product manipulation gets especially amplified in cryptocurrencies, as huge number of exchanges are leveraged for trading. As a result, it becomes challenging for surveillance teams to monitor across the various future and spot crypto markets.

<p>Pump and dump</p>	<ul style="list-style-type: none"> • In pump and dump, an individual or a group pools funds to inflate a token price and profit from such price growth — by selling the token once it has garnered attention of other investors at inflated price. As part of pump and dump, manipulators make misleading statements and create false advertisements to generate positive sentiment around their token and pump up its price. After the prices have sharply risen, they dump these tokens by selling them and make huge illegal profits. • Pump and dump schemes are commonly (but not always) seen at Initial Coin Offering (ICO) stage of a cryptocurrency. Also, these schemes are witnessed during times of high liquidity. Usually, pump and dump coins are low market cap coins which are susceptible to high volatility. The scheme is usually applied to unfamiliar but promising new coins that need less capital to manipulate. • As an example, in March 2021, U.S. Commodity Futures Trading Commission (CFTC) had imposed its first pump and dump enforcement action pertaining to digital assets. It had charged two persons with multi-million-dollar fines. Allegedly, the two people had secretly built-up positions in various digital coins and had deviously advocated the coins as prized long-term investments via various social media avenues. They then had sold their holdings as the prices surged, making profits of over US\$ 2 million.⁴
<p>False / misleading information</p>	<ul style="list-style-type: none"> • Dissemination of misleading or false market information has been one of the more prevalent manipulative methods utilized in the traditional markets. This method has now been observed in digital asset market as well. • For example, manipulators have engaged in coordinated social media campaign, where seemingly unrelated posters have influenced unsuspecting digital asset investors' sentiment by posting misleading positive or negative messages. As another example, many issuers of crypto assets make inappropriate, misleading, or inaccurate disclosures. • As a real-world example, U.S. SEC had penalized a financial technology firm for making misleading and false statements pertaining to unregistered offer and sale of a digital asset securities. As per SEC's allegation, the firm had raised over US\$ 16 million after circulating deceptive marketing information to the investors.⁵ • As another example, CFTC had charged three persons and three firms for making fraudulent marketing materials that indicated enormous profits with no downside risk of financial loss. These materials were utilized to inspire tens of millions of investors to open and fund digital asset and off-exchange binary options trading accounts, which had resulted in payments of US\$ 20 million as commissions.⁶
<p>Insider trading</p>	<ul style="list-style-type: none"> • In insider trading, manipulators who are insiders in a public firm trade the firm's digital asset securities based upon advance material and nonpublic information. • For example, US SEC had made insider trading charges against a former Coinbase product manager and two others for executing a scheme to trade prior to numerous announcements vis-à-vis certain crypto assets to be made available for trading on Coinbase platform.⁷
<p>Rug pull</p>	<ul style="list-style-type: none"> • In rug pull, manipulative developers pull the plug on an overblown digital asset project and flee with the money accumulated from the investors. • As an example, in March 2022, U.S. Attorney's Office - Southern District of New York (SDNY) had made allegations that the makers of Frosties NFT collection had committed a rug pull of US\$ 1.1 million. Allegedly, the creators had falsely promised the buyers that besides the cartoon-like images, they would also receive incentives such as access to a game on metaverse and other giveaways.⁸ • As another example, in June 2022, the U.S. Department of Justice (DOJ) Fraud Section had charged another NFT rug pull against the creators of "Baller Ape" NFT project, alleging rug pull of US\$ 2.6 million. As per the allegations, the creators didn't offer anything to the buyers, not even images.⁹
<p>Stop hunting</p>	<ul style="list-style-type: none"> • In stop hunting, potential market movers (commonly referred as crypto whales) who hold huge amounts of specific cryptocurrency artificially introduce liquidity by dumping huge volumes of their cryptocurrency holdings. This drives down the price of concerned cryptocurrency. Further, it creates considerable supply of sellers in the said cryptocurrency owing to activating of stop-loss orders. This further drives down the price. Ultimately, this allows the crypto whales to bolster their holding in the given cryptocurrency by making low-priced repurchases.
<p>ICO-related</p>	<ul style="list-style-type: none"> • Many firms in the digital assets industry have begun building capital through initial coin offering (ICO). This has, however, also led to numerous cases of manipulation such as misleading or false signals and other types of price-related manipulation.

Digital Assets and Market Manipulation: Real-World Examples

Refer below real-world examples of market manipulation of digital assets.

Context	Elaboration
Bitwise report to US SEC	<ul style="list-style-type: none"> In March 2019, Bitwise (a digital asset management firm) had presented a report to the U.S. SEC that revealed in bleak detail how exchanges forged 95% of all the cryptocurrency trading.^{10,11}
Chainalysis findings	<ul style="list-style-type: none"> Blockchain experts Chainalysis had found that 262 NFT sellers had executed transactions over 25 times to a self-financed address — this points to wash trading. As per investigation, 110 profitable wash traders had collectively profited US\$ 8.9 million from this activity.¹²
Analysts at NonFungible.com	<ul style="list-style-type: none"> It's alleged that a significant part of the rise in digital artwork prices could be attributed to wash trading. For instance, analysts at NonFungible.com found a Blockchain Cuties character which two accounts had traded with each other — back and forth — in a day. This points to potential wash trading.¹³
Coinbase	<ul style="list-style-type: none"> In March 2021, Coinbase — one of the most well-regarded crypto exchanges — had agreed to pay US\$ 6.5 million to resolve an investigation by U.S. CFTC into claims of reckless, misleading, false, or inaccurate reporting and wash trading by an erstwhile employee of Coinbase in the Coinbase's GDAX platform.¹⁴
Tether	<ul style="list-style-type: none"> In Oct 2021, CFTC had charged Tether with making misleading or untrue statements and for omissions of material fact regarding the U.S. dollar tether token (USDT) stablecoin. As per the order, Tether needed to pay civil monetary penalty of US\$ 41 million and to abstain from any further breaches of the CFTC and Commodity Exchange Act (CEA) regulations, as charged.¹⁵
Nathaniel Chastain (a former employee of OpenSea)	<ul style="list-style-type: none"> In June 2022, the U.S. Attorney's Office - Southern District of New York (SDNY) had charged an insider trading case related to digital asset. As per the charges, Nathaniel Chastain, a former employee of OpenSea, had prior information on which NFTs would get featured on homepage of OpenSea. Featuring of an NFT on homepage of OpenSea usually results in a rise in the concerned NFT's price. Allegedly, using this insider information, Nathaniel Chastain had bought the NFTs before these got listed and had sold them after the listing — making illegal profit of around US\$ 67,000.¹⁶
Bitfinex	<ul style="list-style-type: none"> In Oct 2021, CFTC had charged Bitfinex regarding their operation of the Bitfinex cryptocurrency trading platform. As per the order, Bitfinex had engaged in unlawful, off-exchange retail commodity transactions in digital assets on Bitfinex trading platform with the U.S. persons. Also, Bitfinex had functioned as a futures commission merchant (FCM) without it being registered, as required by regulation. As per the order, Bitfinex needed to pay US\$ 1.5 million civil monetary fine and abstain from more violations of CEA, as charged. The order also requires that Bitfinex employ and maintain additional systems that are judiciously designed to stop illegal retail commodity transactions.¹⁷
Bits Capital	<ul style="list-style-type: none"> In April 2022, U.S. SEC had alleged that Bits Capital and its co-founder had raised almost US\$ 1 million from its investors by misrepresenting facts related to an automated digital asset trading bot, and misappropriated investor's funds. As per SEC's allegations, the bot was never functional.^{18,19}
Mt.Gox	<ul style="list-style-type: none"> According to a report from Neoma Business School and George Mason University, there are evidence that Mt.Gox — which at its peak was a leading exchange platform and world's largest Bitcoin intermediary — had committed wash trading to inflate its trading volume and boost its fee revenues.²⁰
Gemini Trust Company	<ul style="list-style-type: none"> In June 2022, U.S. CFTC had filed civil enforcement action against Gemini Trust Company (which is based in New York) for omitting to communicate relevant facts to CFTC or for making misleading and false statements regarding self-certification of a Bitcoin futures product — such as facts important to understand if the planned Bitcoin futures contract was readily vulnerable to manipulation.²¹ Note: The planned product was especially significant as it was to be amongst the first futures contracts related to digital asset listed on DCM and was utilized by the market participants as source of pricing for other financial products that referenced Bitcoin.

Key Challenges in Combating Market Manipulation in Digital Assets

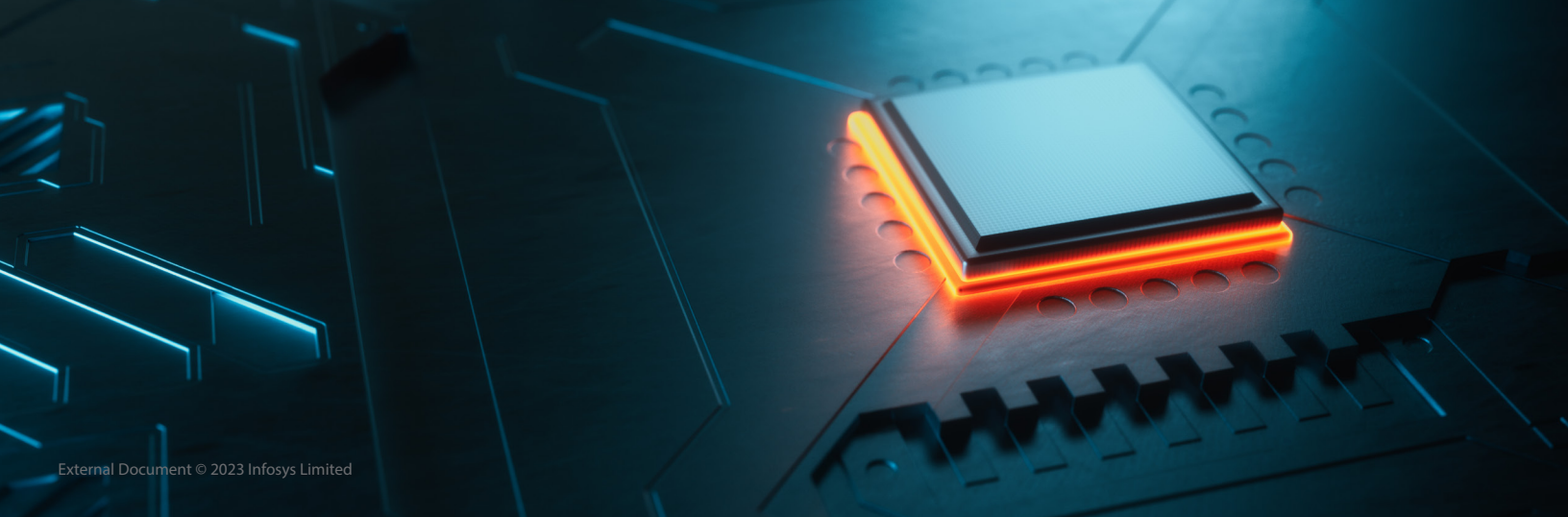
Refer below some of the key challenges faced in combating market manipulation in digital assets.

Challenge	Elaboration
 <p>Unique characteristics of digital assets</p>	<ul style="list-style-type: none"> The fast-paced and dynamic nature of digital assets create difficulty for the exchanges and regulators to keep pace with the evolving manipulative behaviors and the disruptive schemes in this asset class. Other operational characteristics of digital assets — such as its high accessibility, the distributed character of the digital asset marketplace, and highly fluctuating liquidity — render the digital asset marketplace more prone to manipulation and investor abuse. It also makes market surveillance of this asset class very demanding.
 <p>Customer-specific</p>	<ul style="list-style-type: none"> In digital assets market, a market participant can typically hold multiple accounts and across several venues. Resultantly, it's very easy for a person to create multiple accounts and trade with themselves. This creates opportunities for conducting manipulative schemes — such as spoofing and wash trading — using separate accounts across venues. It is difficult to identify whether the various digital assets-related accounts are owned by the same person. Another challenge is the unavailability of personal user information. Even though the underlying digital assets technology publicly records transactions, it keeps the user information anonymous. Although user identity is non-fungible, they're still anonymous. The identities are typically abstractions with 30 or so alphanumeric characters that represent some anonymous individual's digital wallet address. As a result, it becomes hard to track down the market manipulators.
 <p>Regulatory</p>	<ul style="list-style-type: none"> Definition variance: As the digital assets are globally accessible, it has led to numerous regulators, even within the same jurisdiction, asserting their authority over its regulation. Moreover, these various regulators classify and treat the digital assets differently. For example, in U.S., the SEC regards digital assets as securities. However, CFTC considers these as commodities, while Internal Revenue Service (IRS) regards them as property. Also, the various state regulators offer oversight of digital assets using the state money transfer laws. All of this has created a complex regulatory landscape, and which adversely impacts effective market surveillance. Inconsistency: Currently, there is ambiguity and lack of consistency with regards to new regulations and the applicability of existing regulations vis-à-vis digital assets market. For instance, the requirements for founding and managing digital assets exchanges, and for overseeing digital assets market, vary considerably from one jurisdiction to another. Also, digital asset exchanges are presently not regulated as stringently as the exchanges related to traditional asset classes. Such lack of harmony and holistic approach creates opportunity for regulatory arbitrage. Resultantly, manipulative behavior in digital assets trading move towards jurisdictions that have lax regulation.
 <p>Disclosure-related</p>	<ul style="list-style-type: none"> For digital assets, presently there is a lack of standard and fully scrutinized suitability and disclosure practices that can accommodate the unique characteristics of this asset class. This has further aggravated the market manipulation-related concern.
 <p>Market fragmentation</p>	<ul style="list-style-type: none"> There is multiplicity of digital assets trading venues. Also, all digital asset exchanges work independent of each other and aren't governed by common forum. So, for example, the same digital asset could be traded on numerous exchanges, allowing the traders to submit bogus orders on one exchange and execute the wanted transaction on another. All of these have led to digital assets market fragmentation and rendered them highly vulnerable to manipulative practices. Implementing robust cross-market surveillance is challenging.
 <p>Infrastructural constraints</p>	<ul style="list-style-type: none"> Currently, in many geographies, in comparison to market for traditional asset classes like equities and options, there is lack of adequately robust digital assets market surveillance infrastructure (and the related technology solution providers). This adversely impacts the quality and completeness of surveillance of the digital assets market.

Regulatory Actions to Combat Market Manipulation in Digital Assets

In recent times, regulators have begun actively focusing on the digital assets market to improve transparency, curb manipulation, ensure market integrity, and enhance investor protection. Refer below some of the regulatory actions undertaken across geographies in this regard.

Region / Country	Action						
Global	<ul style="list-style-type: none"> The Bank for International Settlements (BIS) has asked that more regulatory safeguards be implemented to prevent cryptocurrency market manipulation and fraud. It has argued that transaction anonymity and limited application of rules (such as related to AML) exposes decentralized finance (DeFi) to market manipulation and illegal activities. 						
Overall							
United States	<ul style="list-style-type: none"> In U.S., regulators have been making efforts to support trustworthy growth in digital assets market. They have begun developing guidance vis-a-vis appropriate governance of the risks pertaining to digital assets and its market participants. Additionally, regulators are working towards developing the regulatory frameworks required to control digital assets markets and are keenly involved in enforcing the regulatory guidelines. As an example, the Digital Asset Market Structure and Investor Protection Act, which was introduced in July 2021, intends to offer regulatory and legal clarity vis-a-vis digital assets and associated investor protection.²² In November 2021, Office of the Comptroller of the Current (OCC), Federal Deposit Insurance Corporation (FDIC), and Federal Reserve Board of Governors (FRB) had issued joint statement on Crypto-Asset Policy Sprint Initiative and Next Steps.²³ The statement showed that these agencies planned to offer more clarity on whether trading- and sales-related activities of crypto assets performed by the banking firms are legally permitted. Also, they planned to offer clarity on expectations for consumer protection, safety and soundness, and compliance with the existing regulations related to: <table border="1" data-bbox="464 1155 1453 1476"> <tbody> <tr> <td>o Crypto-asset safekeeping and conventional custody services.</td> </tr> <tr> <td>o Facilitation of customer purchase and sale of crypto assets.</td> </tr> <tr> <td>o Ancillary custody services.</td> </tr> <tr> <td>o Loans collateralized by crypto assets.</td> </tr> <tr> <td>o Issuance and supply of stablecoins.</td> </tr> <tr> <td>o Activities related to holding of crypto assets on balance sheet.</td> </tr> </tbody> </table> 	o Crypto-asset safekeeping and conventional custody services.	o Facilitation of customer purchase and sale of crypto assets.	o Ancillary custody services.	o Loans collateralized by crypto assets.	o Issuance and supply of stablecoins.	o Activities related to holding of crypto assets on balance sheet.
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U.S. Securities and Exchange Commission (SEC)

United States

- In February 2021, the U.S. SEC Division of Examinations had released a risk alert on digital asset securities.²⁴ The alert highlighted the need for the concerned entities to update their marketing materials, solicitation documents, regulatory supplements and brochures, and the fund documents to account for particular risks related to new digital asset issuance.
- In recent years, SEC has taken rising number of enforcement actions against non-compliant market participants in cases where the concerned digital assets were observed by SEC to be securities, or the market participants had failed to offer adequate disclosure. The most common suspected violations pertained to fraud, and unregistered sales and offerings of securities. Some of the enforcement actions pertained to alleged failure of the participants to register as trading facility or investment company (as applicable), and those related to market manipulation.
- SEC has been exploring if more digital assets need to be deemed as securities, and if more participants in digital asset industry need to be brought under SEC's oversight. For example, digital assets which are pooled investment vehicles and additionally hold traditional securities may fall under SEC's authority. Resultantly, it's likely within SEC's power to regulate digital assets like USD Coin — that invests in treasuries, agency debt, corporate bonds, and commercial paper.
- Even though SEC only has power over securities and exchanges, brokers, and dealers transacting in securities, the agency may still control the non-securities related activities of such market participants. So, for example, even if an exchange lists just a single digital asset security, SEC might regulate that exchange for all of the digital assets that trades on the platform. Likewise, if a broker trades just a single digital asset security, SEC could regulate the concerned broker's trading of all digital assets.

Commodity Futures Trading Commission (CFTC)

United States

- In April 2022, Digital Commodity Exchange Act of 2022 was introduced with the objective to offer CFTC a larger role in supervising the crypto spot markets.²⁵
- Over the past few years, CFTC has brought several enforcement actions against digital asset markets participants — such as related to a) allegations of running unregistered designated contract market (DCM) and/or derivatives clearing organization (DCO) and swap execution facility (SEF), b) failure to register with CFTC as commodity pool operator (CPO), futures commission merchant (FCM) and/or commodity trading advisor (CTA), and c) market manipulation, fraud, and other charges.

Office of the Comptroller of the Currency (OCC)

United States

- OCC has given independent statement advancing its stance that banks should perform certain key activities prior to legally participating in cryptocurrency-related activities.

National Futures Association (NFA)

United States

- NFA has offered guidance vis-à-vis the disclosure-related requirements for its members engaging in virtual currency activities. Also, it has enabled distinct requirements for all of its registrants vis-à-vis cryptocurrencies treatment.

U.S. Department of Justice (DOJ)

United States

- In 2018, the U.S. DOJ had launched investigation to ascertain whether price manipulation had occurred in the Bitcoin network due to spoofing.²⁶ For the investigation, DOJ had worked along with CFTC.

Overall

European Union (EU)

- Several EU countries have been making efforts to support the responsible growth of digital assets market.

Markets in Crypto Assets (MiCA)

European Union (EU)

- EU plans to put into effect Markets in Crypto Assets (MiCA) regulation by 2024.²⁷ This new regulation pertains to market abuse regime for the crypto assets. It lays out comprehensive framework to cover aspects related to issuance, trading, market integrity, and financial stability vis-à-vis digital assets. MiCA offers issuers of crypto assets and the providers of related services a “passport” to serve their clients across EU from single base, while fulfilling the capital and consumer protection rules.
- MiCA aims to create a harmonious and coherent regulatory regime for decentralized finance and the cryptocurrency-related assets across EU; and replace the current nationwide frameworks on crypto assets. It intends to:
 - o Bring e-money tokens, crypto-referenced tokens, stablecoins and other crypto-assets under a sole EU regulatory framework.
 - o Build a market abuse regime to thwart market manipulation.
 - o Mandate that the crypto assets service providers put in place robust surveillance and enforcement apparatuses to effectively comply with the provisions of market abuse prevention.
- Under MiCA, approved crypto service providers need to comply with both specific and general requirements pertaining to market integrity and consumer protection, and organizational requirements pertaining to ownership, market abuse monitoring, cybersecurity, protecting the crypto-assets, and trading platforms operation. MiCA expects concerned firms to evaluate compatibility of crypto assets with their investor needs and alleviate risks of deceiving investors via inappropriate disclosures. Also, MiCA has shared the initial guidance that require crypto issuers to bring out whitepaper on their website prior to any crypto issuances, offering complete information on the issuance characteristics.
- Apart from MiCA, European Securities and Markets Authority (ESMA) would also continue regulating the financial instruments that are within its regulatory purview.

Overall

UK

- UK's regulators have offered guidance listing the crucial disclosure topics to be covered by firms dealing in digital assets and the need for these firms to offer potential buyers of their digital asset products with sufficient information to allow them to make educated investment decisions.
- The UK government has consulted with numerous market participants and stakeholders for designing an effective regulatory approach which addresses the risks of digital assets. Also, the UK Government has been working to bring promotion of crypto investments under the remit of Financial Conduct Authority (FCA).

- UK's Financial Conduct Authority (FCA):

- o Has consulted on concerns related to the speed and ease with which people can make high-risk crypto investments. It has proposed significant bolstering of its rules vis-à-vis the marketing of these high-risk financial products.
- o Has put in place a registration regime for entities engaged with the cryptocurrency exchange businesses and that have presence or market their product in UK or offer services to the UK residents.
- o Is considering proposals on the marketing of crypto products to consumers which may lead to substantial restrictions on the crypto exchanges operating in UK.

- In May 2022, the UK Treasury had stated that it wanted to have a regime in place for dealing with collapse of a stablecoin (a cryptocurrency that is backed by traditional assets such as short-term debt) and which could pose risks to the broader financial system.²⁸

Overall

Asia-Pacific (APAC)

- APAC countries such as Japan, Singapore, and South Korea have been enabling dynamic regulatory regimes to make the digital asset class more mainstream.

Overall

China

- China doesn't accept cryptocurrencies as a legal tender. It has been taking action against privately issued cryptocurrencies. However, People's Bank of China (PBOC) has been experimenting with the launch of its own digital currency.

Overall

Japan

- After several notorious cyber hacks, Japan's Financial Services Agency (FSA) has hastened its efforts to regulate the cryptocurrency trading platforms and the exchanges for cryptocurrency.
- Japan's existing regulatory framework — comprising Financial Instruments and Exchange Act (FIEA) and Payment Services Act (PSA) — is based upon the principle of safeguarding investors' interests and market integrity. Regulations in Japan require the exchanges for cryptocurrency and the entities offering cryptocurrency services (including crypto derivatives trading platforms) to conform with the stringent requirements of compulsory registration; ensure AML and countering financing of terrorism (CFT) compliance; and implement robust cyber-security tools.

Overall

Switzerland

- The Swiss Financial Market Supervisory Authority (FINMA) has ratified a new digital stock exchange — SIX Digital Exchange (SDX).²⁹ It is a DLT-operated single platform that permits investors to trade, store, and settle digital tokens via the regulated entities. FINMA predicts that a single platform would help balance market integrity with innovation.

Combating Market Manipulation in Digital Assets: Solution Recommendation

To effectively prevent manipulations in the digital assets market, regulators and the concerned entities need to work concertedly and strategically and focus on certain key dimensions. Refer Exhibit 1.

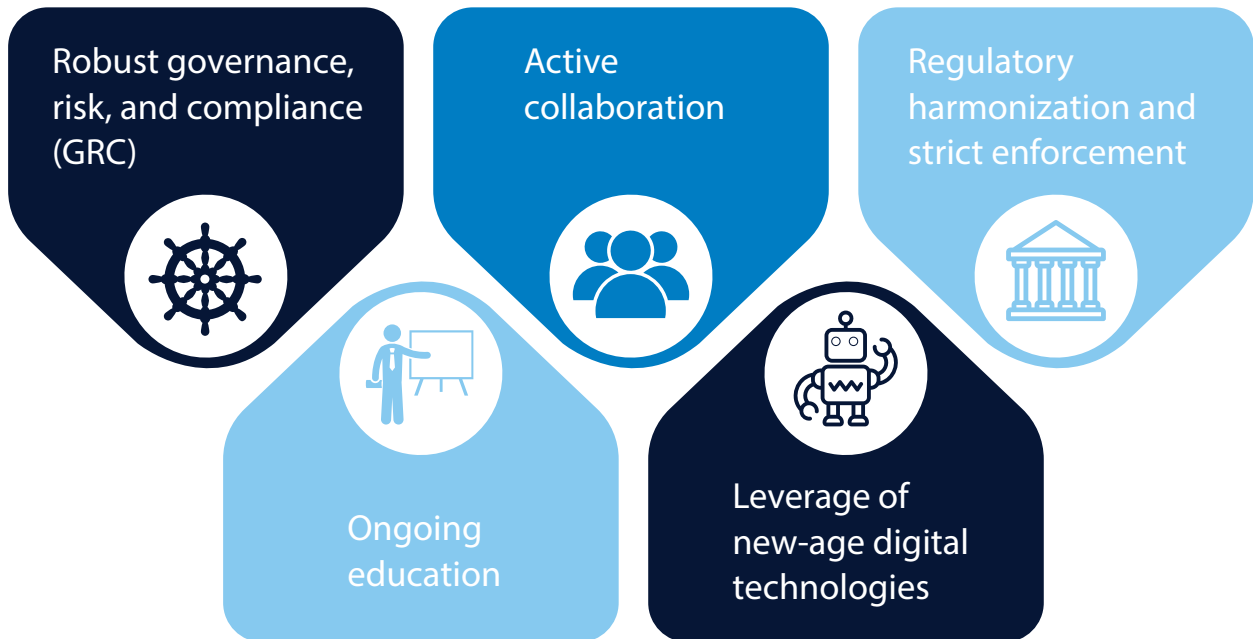


Exhibit 1: Key Focus Areas for Firms to Prevent Manipulations in the Digital Assets Market

- **Robust governance, risk, and compliance (GRC):** Concerned entities dealing in digital assets (including issuers, trading platforms, exchanges, and custodians) should actively focus on relevant GRC aspects. Specifically, these firms should work on the following:

- o Enhance their existing GRC frameworks and enable robust processes, procedures, and controls to cater to the specific supervision; monitoring; cross-market surveillance; risk management; escalation protocol; record keeping; metrics; reporting and disclosure; and other relevant needs of the digital assets market.
- o Implement strong onboarding, AML, and KYC procedures to effectively identify the holders of digital assets and how funds and assets are getting transferred through the digital asset ecosystem.
- o Remain focused on their fiduciary duties. They must unfailingly prioritize their customer's best interest when offering recommendations for digital asset investments.
- o Strengthen their existing third-party risk management practices to conduct effective due diligence of the concerned third-party entities (such as digital asset exchanges, data providers, technology solution and service providers, etc.).
- o Work towards continually identifying and understanding the emerging and novel manipulative practices and risks in the digital asset landscape.

- **Active collaboration:** Digital assets ecosystem players should actively collaborate amongst themselves. From market integrity perspective, this is important to enable common industry standards, central governing body, advanced shared surveillance frameworks, multi-exchange working groups, real-time information sharing across venues, and more.

A good example of collaborative undertaking is the Crypto Market Integrity Coalition (CMIC). CMIC was started by Solidus Labs and co-founded by 17 leading crypto trading firms, exchanges, and industry associations.³⁰ It is a coalition of major digital asset and cryptocurrency firms — including Coinbase, Anchorage Digital, Huobi Tech, Circle Internet Financial, Crosstower, BitMex, Bitstamp, CryptoCompare, Elwood Technologies, GSR, Securrency, Global Digital Finance (GDF), the Chamber of Digital Commerce, Liberty City Ventures, MV Index Solutions, and CryptoUK.

CMIC's goal is to make the digital asset marketplace more inclusive, productive, and transparent for all participants by stopping market manipulation schemes. Through CMIC, the concerned digital asset entities have been urged to sign a market integrity pledge to:

- o Continuously work towards higher standards of market integrity, consumer protection and compliance, and risk monitoring.
- o Effectively combat market abuse and manipulation.
- o Cultivate a fair marketplace for digital assets.
- o Promote regulatory and public confidence in the digital asset class.

CMIC's market integrity pledge also identifies main forms of market manipulation and offers transparency into the types of abusive trading behaviors that the signatories strive to root out. The pledge's initial aim is to foster action and unity at the industry level, across decentralized finance (DeFi), centralized finance (CeFi), and all other digital assets. Eventually, CMIC intends to be able to actively engage with the concerned regulators, share insights and research with the stakeholders, promote relevant training programs, and advocate data-sharing and shared-surveillance frameworks which can address the distinctive cross-market supervision challenges of digital assets.

- **Regulatory harmonization and strict enforcement:** Regulators certainly cannot adopt a cookie-cutter approach to curb manipulations in the digital asset market. However, they still need to keep in mind the globalized nature of digital assets and work towards overcoming the myriad existing regulatory overlaps and ambiguity.

It's important that regulators actively collaborate amongst themselves — both locally as well as internationally — to harmonize the various regulatory requirements and guidance vis-à-vis the digital assets market integrity. To enable robust regulatory harmonization, following are some of the important aspects that regulators need to focus upon.

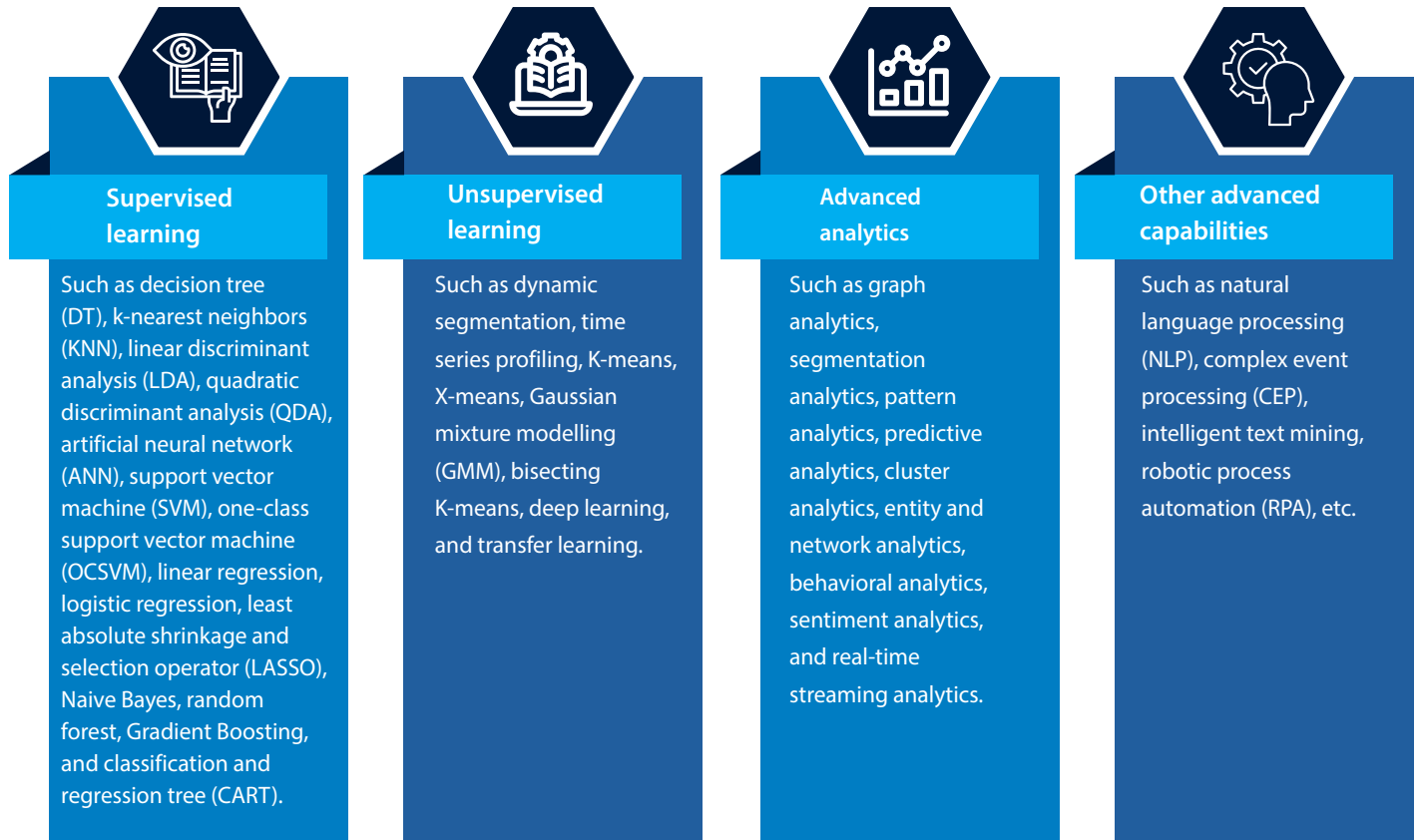
- o Ensuring consistency in regulatory principles across the regulators.
- o Consolidating existing mandates, rules, and enforcement authorities to enable holistic, nimble, and coherent regulatory frameworks.
- o Enabling centralized regulatory agency and structure for the trading platforms, cryptocurrency exchanges, and other concerned entities in respective jurisdictions.
- o Enforcing mandatory licensing requirements for the entities that offer digital asset-related products and services or operate digital asset trading platforms.
- o Enabling structural reforms (e.g., shared repositories for data, and shared surveillance frameworks).

Additionally, in the interim, until optimal regulatory harmonization has been achieved, regulators should actively guide entities on the various existing market integrity-related regulatory requirements (such as on surveillance, disclosure, asset valuation, accounting rules, capital requirements, suitability, investor protection, KYC/AML, etc.) that are applicable to the traditional securities market, and how these can be adapted and utilized to bolster the digital assets market integrity. Further, beyond the regulatory requirements, digital asset exchanges too could impose robust listing standards from their end to protect the investors.

Moreover, regulators and enforcement agencies should continue to take strict enforcement measures to protect market participants and investors, enhance transparency, and ensure market integrity. They should closely scrutinize the market participants vis-à-vis their disclosures' accuracy and completeness, the ownership structure, surveillance practices, KYC and AML compliance, and compliance with other relevant regulatory mandates. Where needed, they should levy strict monetary penalties, disgorgement, registration bans, permanent injunction, etc. on the noncompliant entities.

- **Ongoing education:** With the rising number of retail and institutional investors in digital assets, and as more and more firms explore avenues to offer their digital asset products and services, ongoing education has become even more important. After all, investors and other stakeholders will need to have strong understanding of the associated manipulation and fraud risks, the red flags, ways to avoid the risks, and how to make sound judgment vis-a-vis digital asset product suitability. Also, the concerned digital asset firms such as trading platforms and exchanges need to adequately train their employees vis-a-vis manipulation and fraud risks, and surveillance and controls.

- **Leverage of new-age digital technologies:** As more and more types of digital assets come into the marketplace and further add to the complexity, the market surveillance-related challenges for firms would further multiply. Hence, to effectively manage their surveillance capabilities, firms need to leverage new-age digital technology capabilities such as big data tools, artificial intelligence (AI), machine learning (ML), etc. Following are illustrative advanced technology capabilities that the new-age digital solutions can leverage to enable robust surveillance of the digital assets market.



For the concerned firms, leveraging abovementioned digital technology capabilities can, for example, enable:

- o Continual (24/7/365) and real-time monitoring for suspicious activities.
- o Comprehensive, dynamic, and risk-based cross-digital asset and cross-market surveillance.
- o Sophisticated real-time behavioral analysis.
- o Proactive identification of novel and complex forms of digital assets market manipulation and collusion.
- o Advanced digital assets trade reconstruction and market replay to support surveillance.
- o Sophisticated alert and case management (e.g., risk-based alert scoring and prioritization).
- o Advanced reporting and visualization (including graphical, intuitive, and interactive visualization capabilities, and intelligent dashboards).
- o Intelligent workflow automation (e.g., intelligent alert routing).

Combating Market Manipulation in Digital Assets: Real-World Examples

Refer below few real-world examples of entities and solutions that have enabled effective prevention of manipulations in the digital assets market.

Entity	Elaboration
NICE Actimize ^{31,32}	<ul style="list-style-type: none"> NICE Actimize SURVEIL-X solution leverages AI-driven analytics that is specially tuned for catching all types of cryptocurrency trading misconduct. The solution enables a) cloud platform-as-a-service, b) complete surveillance coverage, c) AI-powered detection models for cryptocurrency, d) multi-dimensional analytics utilizing all trade-related data, e) events reconstruction for demonstrating true intent, f) powerful case management, and more. SURVEIL-X offers a broad array of out-of-the-box (OOTB) risk detection models that are specifically tailored for the cryptocurrency markets. The solution's analytics caters to entire spectrum of cryptocurrency — including crypto/crypto pairs, crypto/fiat pairs, and crypto futures. SURVEIL-X can easily and correctly detect cryptocurrency misconduct scenarios such as layering, pump and dump, spoofing, insider trading, wash trading, and more.
Nasdaq ³³	<ul style="list-style-type: none"> Nasdaq Market Surveillance for Crypto Exchanges solution enables high integrity marketplace and crypto-forward surveillance strategy. Its key features include a) 24/7 and real-time monitoring of up to 60 billion transactions per day, b) support for monitoring of fractional volumes trading and currency pairs trading, c) robust alert with case management, d) derivatives-specific alerts and visualizations, e) full-depth order book visual replay and reconstruction, and f) availability of 5+ years of historical data.
Cardano ³⁴	<ul style="list-style-type: none"> To counter market manipulation of its ADA coin, Cardano had engaged Algoz (a liquidity services provider) to ensure better liquidity, lesser spread, and reduced manipulation incidents by whales. Algoz offers automated liquidity-related solutions to numerous projects in over twenty exchanges globally. In addition to automated market making, Algoz's in-house analysis capability discovers and guards against market manipulation of digital assets.
Coinbase ³⁵	<ul style="list-style-type: none"> Coinbase strives to offer its customers a fair, safe, transparent, and liquid trading venue. It has adopted advanced market protections capabilities and a robust market surveillance program which leverages state of the art technology. Further, the firm has been continually working towards improving its market safeguards to bolster confidence in its digital assets exchange and the broader ecosystem.
BitMEX ^{36,37}	<ul style="list-style-type: none"> BitMEX — one of the world's biggest crypto trading platforms — has in place a fully verified customer base, and strong AML and market surveillance capabilities. The firm is committed to ensuring fair and transparent trading in digital assets for all its market participants. Further, in Oct 2022, BitMEX partnered with Solidus Labs to strengthen its comprehensive transaction monitoring programme across its platform. It is leveraging Solidus' HALO platform — a comprehensive crypto market integrity hub — to enhance its capability to monitor risks, avert financial crime, and ensure compliance with the evolving regulatory mandates.

Eventus ^{38,39}	<ul style="list-style-type: none"> Eventus'Validus is a real-time trade surveillance and market risk management platform. It helps firms to quickly spot potential abusive behavior in equities, foreign exchange, listed derivatives, fixed income, and digital assets markets. The platform leverages machine learning and advanced analytics capabilities to automate anomaly detection and pattern analysis. Many digital asset exchanges have mentioned Validus' customizability, scalability, and its ability to surveil billions of messages each day in real-time on 24/7 basis.
Solidus Labs ^{40,41,42}	<ul style="list-style-type: none"> Solidus Labs is a leading crypto-native risk management firm. It is a category-definer for the crypto trade surveillance, transaction monitoring, and threat intelligence technology. Its solution offers a) ensuring of market integrity by benchmarking unusual crypto orders and execution patterns against market norm, b) real-time alerts on potential trading rules breaches and abnormal market volatility behavior, c) intuitive alert workflow management, d) market reconstruction using powerful visualizations, e) aggregation of risk across the clients' complete investment journey, and f) ability to create, run, and implement what-if scenarios and the back-testing of changes utilizing historical data. Its Solidus HALO solution allows to surgically surface unnoticed threats and act in real time. The solution leverages behavioral-based detection models that are powered by machine-learning to address a variety of crypto-specific alerts and threats. It offers 24/7 real-time monitoring capabilities, advanced investigative tools, and case management capabilities. Solidus HALO is presently utilized to monitor over 1 trillion events per day across over 150 markets.
Nifty Gateway ⁴³	<ul style="list-style-type: none"> Nifty Gateway — which is amongst the largest NFT exchanges by volume — keeps a watch for dubious transactions on its system, and monitors sales for abnormal activities. Also, majority of its customers buy Nifties using credit cards that require them to give certain personally identifiable information. This limits the risk of wash trading.
FTX Digital Markets ⁴⁴	<ul style="list-style-type: none"> FTX Digital Markets (FTX) — the Bahamian subsidiary of FTX Trading Limited — has partnered with Solidus Labs to enable transaction monitoring and market surveillance across FTX's platform. As part of this partnership, FTX is deploying Solidus HALO platform, which offers fraud-prevention, risk monitoring, and compliance services for digital assets.
Scila AB ⁴⁵	<ul style="list-style-type: none"> Scila AB offers advanced solutions for trade surveillance, AML, and risk management. The company has a strong focus on cryptocurrencies and digital assets and presently offers technology solution to some of the largest cryptocurrency traders and exchanges globally. Its Scila Surveillance offers flexible and powerful real-time market surveillance solution. The solution comprises a powerful search and replay functionality, trading analytics tools, and a broad array of alert rules and reports. It leverages advanced machine learning capabilities.



Conclusion

In recent times, the mainstream and institutional adoption of and support for digital assets have accelerated — with private investors and capital-rich firms looking for high-growth opportunities in this asset class. However, for this growth to be sustainable, it's important that manipulations in the digital assets market be curbed. This is crucial to ensure transparency, maintain trust, and give market participants the confidence to invest.

Therefore, all concerned entities — including digital asset issuers, trading platforms, exchanges, custodians, financial institutions, data providers, infrastructure providers, technology solution providers, regulators, and the institutional and retail investors — must continue to play a proactive role in ensuring integrity of the digital assets market.

In future, when the market surveillance capabilities of digital assets market mature, it would allow for further growth in this market. Ultimately, with substantial reduction in market manipulations, the digital assets market would achieve a level footing with the traditional securities markets.



About the Author



Anjani Kumar

Principal Consultant, Global Risk & Regulatory Technology Practices, Infosys Financial Services Domain Consulting Group.

Anjani has over 20 years of comprehensive experience in IT, domain, and process consultancy. He manages several strategic initiatives including thought leadership publications, solution enablement support, research and competency development program, and marketing efforts from a domain perspective. He has authored large number of high-impact whitepapers and articles, including many that have been published on reputed external forums.



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For more information, contact askus@infosys.com



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