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7.5. Risk Management Standards For Crypto Asset Service Providers

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RISK MANAGEMENT STANDARDS FOR CRYPTO ASSET SERVICE PROVIDERS

FOSTERING MARKET INTEGRITY AND CONSUMER PROTECTION PRINCIPLES FOR SUSTAINABLE GROWTH

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Abstract

Since Bitcoin's birth 15 years ago, the crypto and Web3 industry have shown impressive growth and adoption through cutting edge and financial services on blockchain rails. Yet, mishappenings of various kinds have been prominent ranging from opaque projects, scams and broken promises for infinite returns ending up in smoke.

As the industry takes stock of key learnings from the latest crypto winter and prepares to build more solid foundations for the future, time is ripe to set clear market standards and rigorous practices to keep investors' concerns around toxic and murky "FOMO" projects at bay[1]. If this industry is to thrive, antagonise and to a degree replace or upgrade traditional financial rails and investment opportunities for the future then it also needs to mature and stand up to the test of institutional grade scrutiny and eliminate the toxic habits of the incumbent industry it seeks to outshine.

Vast demand potential sits in the hands of investment powerhouses, such as Investment Firms and Banks, Asset Managers and Pension Funds, all of which will be willing to step more decisively into the market only once they can see the wood from the trees and get passed the fragile "to the moon" promises and grasp the true value of crypto and Web3.

While trustless and truly decentralised infrastructure and governance remain a hopeful evolution of the industry, at present its Crypto Asset Service Providers (CASPs) and exchanges in particular have a critical role to play in the industry, sitting at the intersection between crypto projects and investors. In their role, as outright centralised entities, CASPs are critical in maintaining the highest possible standards to safeguard the crypto markets from low quality projects on one side, and protecting the interests of investors on the other.

At the time of writing, while acknowledging the potential from developments in Decentralised Finance (DeFi), our focus will primarily target centralised players of the market, given their lion share of the industry volumes. However, the recommendations put through in this paper should be considered for future evolutions of the DeFi space as well, by building out regulatory compliance, market integrity and consumer protection standards programmatically as part of its core proposition and building blocks.

This paper addresses the current areas of weakness in CASP practices and proposes areas we believe should be strengthened, specifically regarding the following 3 key areas:

a) the adoption a **clearer classification or taxonomy of tokens** enabling investors to better understand the subtleties and characteristics of each type;

b) the **due diligence process** in the listing of tokens and new projects; and

c) the **dynamic risk assessment** and **disclosure** pertaining to each category of crypto assets. This applies as much at time of sale as when market conditions deteriorate, specifically with regards to any signals that may suggest a listed crypto project may be at risk.

Financial inclusion and technological innovation at scale cannot come at the expense of investor security and protection.

There are no shortcuts around this.

[1] FOMO (Fear of Missing Out)

Introduction

The crypto market is entering its teenage years and as any youngster it is learning some tough lessons as it seeks to disintermediate and innovate the financial system on one hand and miserably come to grips with inexperience in various mishappenings on the other.

From Bitcoins' launch in 2009, the crypto asset ecosystem has seen multiple evolutions of blockchain use cases and crypto projects, including the craze of the 2017 ICO boom[2], the advent of Non Fungible Tokens (NFTs) and the birth of Decentralised Finance (DeFi).

According to Messari[3], as at August 2023 there were 22,400 crypto assets in circulation in a market worth USD 1.11 trillion, down from a peak of USD 3 trillion in 2021 (see Chart 1) [4]. While the crypto asset market is still a drop in the wider ocean of the total worldwide financial assets valued over USD 1,500 trillion in 2020[5], the short history of crypto assets has witnessed an overwhelming amount of investors' assets burned into ashes, raising widespread distrust and concerns among retail and institutional investors.

Advocating for promises of innovative technologies, democratising access to financial assets and fueled by expectations of irresistible growth, CASPs such as brokers and exchanges have often rushed to load up their platforms with any crypto asset on the market to boost transaction volumes and profits. As a result, downstream retail investors, for the large part with inadequate insights and understanding of crypto, and easily influenced and hypnotised by instant money promises of getting rich overnight, have been left drained or bankrupted from irresponsible, reckless and "black box" investing.

Chart 1 - $2 trillion wipeout from 2021 peak to 2022 post FTX

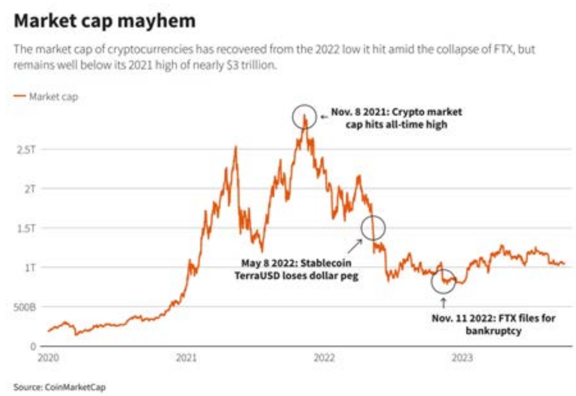


Image source: Reuters

This paper focuses on the importance of the role of CASPs and the minimum safeguards expected to be upheld to ensure a more stable market for investors, particularly as it applies to the Swiss and European landscape. Specifically, we explore existing due diligence practices and proposed enhancements that we expect central market intermediaries to embrace to ensure crypto assets marketed on their platforms are not only geared towards short term business growth, but are also optimised for longer term market integrity and consumer protection.

Crypto and Web3 market participants need to start walking the walk, earning respect and trust through greater self imposed rigour and risk management standards by injecting security and confidence in the system while eradicating the toxic behaviours from the past.

New regulatory requirements such as the Markets in Crypto Assets (MiCA) Regulation across European jurisdictions will raise the bar setting stricter expectations from crypto asset issuers to centralised intermediaries. As the crypto industry

[2] ICO (Initial Coin Offering, a mechanism of crypto and web3 firms to raise funds through crypto tokens)
[3] As per Messari.io as at Oct 10, 2023
[4] As per to Coinmarketcap.com on Aug 13, 2023
[5] McKinsey Global Institute - [Nov 15, 2021 Report]

regulatory regime converges towards TradFi frameworks, CASPs will need to evolve further to have a right to operate or otherwise see their licences and ability to operate revoked or rejected. We are already seeing this happen as regulators are increasingly on the lookout to identify and sanction inappropriate practices for lack of compliance with existing frameworks.

As regulations are evolving to strengthen the building blocks across the European landscape, we believe CASPs should do more than simply ticking the regulatory compliance box. For instance, CASPs should take steps to enhance investor education, assess the risks of crypto assets and clearly disclose these to investors thus allowing a more fair and transparent exchange of value with their end investors. This includes applying assessments to ensure crypto investments make sense and align to investors' individual appetite, their propensity to take risks as well as their financial capacity, financial knowledge, investment experience and objectives.

CEOs, CTOs and Product Leads should remember that this isn't just about the technology, innovative use cases, business models or fancy user interfaces. While indeed this is a technical revolution, this isn't like building any other app or technical device. Ultimately what flows through blockchain rails are investors' **money** and **savings**. Thus, security and integrity are critical.

Lets not forget that the crypto and Web3 industry would likely not exist without Bitcoin, a blockchain that has made risk, security, censorship resistance and holistically - risk management - its entire value proposition and raison d'être. Unsurprisingly, such hardness still sustains Bitcoin as the building block of the industry, now back on the rise again with over 51% of the total market cap (see Chart 2)[6].

Building a crypto industry for the future should embrace the driving principles and fundamental values of Bitcoin's hardness, building a superior financial system, anchored on mathematics, cutting edge technology and computer science *without compromising risk management on every level*.

Chart 2 - BTC dominance on the rise again

Image source: TradingView

CASPs' focus on the upholding trustworthiness of the market is existentially important and doesn't stop with proof of assets and reserves which is often assumed to be what "risk management" is all about in the crypto space. Far from it. Much more needs to be done, for instance, in scrutinising crypto assets and market participants and flagging or even sidelining those that are most suspicious. Failure to do so will, by association, tarnish their perceived standards and reputation and in turn deteriorate the market as a whole. Collectively CASPs need to work alongside each other, and in open dialogue with regulators and relevant authorities to enhance the robustness and resilience of the market for everyone's benefit.

Just like the airline industry "open sources" the black box learnings from all failures to enhance the air industry's and passenger safety, the crypto and Web3 industry needs to start demonstrating that it truly takes investment security and risk management at heart as a central component of the innovative industry being built. The industry needs a self cleansing mechanism and higher standards to identify legitimate projects from others that appear too good to be true.

As the crypto slogan goes, "**don't trust, verify**".

[6] As per Coinmarketcap.com on October 10th 2023 - https://coinmarketcap.com/

The Changing Regulatory Landscape

(legal input from Nicola Massella[7])

Pre-MiCA

Over the past decade, the crypto asset industry has been largely an unregulated playing field for entrepreneurs and investors alike. As D. Jur. Nicola Massella puts it, this far, "the issuance and listing of crypto-assets that do not qualify as financial instruments is vastly unregulated". Massella further explains that "cryptocurrencies such as BTC or ETH first, and utility tokens later, have flourished within a regulatory loophole which allowed for these instruments that provide access to a digital ecosystem where token holders can enjoy certain utilities and governance powers".

Until the arrival of MiCA regulation in Europe or even the Blockchain and DLT Act in Switzerland, the regulatory landscape was limited to ensuring anti money laundering (AML) requirements were adhered to through standard customer and business identification processes (KYC/KYB) and through the monitoring of transactions to enable the identification, monitoring and reporting of suspicious activity. Hence, all CASPs needed to worry about was to implement minimal onboarding and transaction monitoring systems and processes to "tick the box" and get going.

Massella explains how "both in the Swiss Confederation and the European Union, legislative and regulatory bodies recognised the existence of utility tokens outside of the financial instruments perimeter… As a consequence, crypto-assets not qualifying as financial instruments can be publicly sold without any authorisation requirement or public notice based on contractual agreements with the purchasers on the European continent".

With limited to no requirements on market conduct and consumer protection, the market was able to develop with great laissez-faire, leaving ample room for manipulation, illegitimate and improper practices from projects entering the market.

Post-MiCA

With the arrival of MiCA, due to come into full effect by the end of 2024, the picture changes significantly placing more stringent requirements on token issuers as well as industry venues such as CASPs responsible for marketing and distribution of such tokens to end customers.

On the token issuer side, significant emphasis will be placed on the publication of a white paper which will act similarly to a prospectus in traditional financial markets. Each project will be required to provide a significant amount of information within the white paper and keep the document updated including relevant features such as the token utilities, tokenomics, the project roadmap but also important information on the project's team itself, on their technology and relevant known risks.

Massella underlines that "the white paper serves as the cornerstone of MiCAR's efforts to ensure market transparency and consumer protection" as the regulation will oblige both token issuers and CASPs acting on their behalf to publish white papers and ensure these are fair, clear and non misleading, hence eliminating the use of jargon, unfounded claims and deceptive statements. Similar duties are established with respect to marketing communications.

These are encouraging developments that bring greater robustness and confidence to the whole industry and will ensure better informed decision making from end investors.

[7] D.Jur. Nicola Massella, Legal Partner at STORM Partners - https://storm.partners/

CASPs as market guardians

With 20,000+ crypto projects crowding the industry in less than a decade it is clear that bars to entry have been very low in attracting retail investor's assets in exchange for tokens, particularly during the 2017 ICO boom. As with most technological innovations, regulators have been slow to react and get a grip on the technology leaving ample room for projects to build their empires prioritising growth and revenue over rigorous processes, risk management and controls.

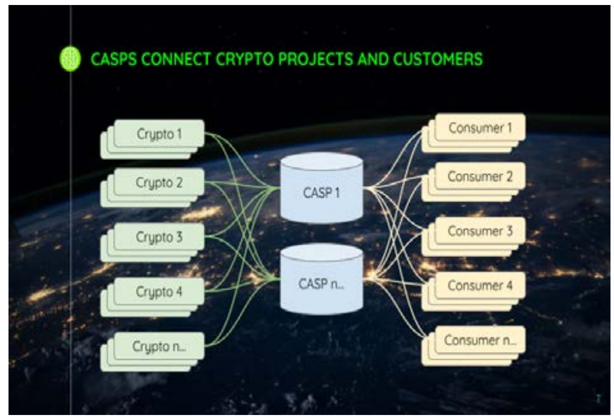
To non crypto natives, the crypto market is not easy to read. Even traditional finance professionals struggle to navigate the market, make sense of new technologies and grasp fundamentals while seeking to evaluate projects and derive their true investment potential through traditional tools.

It is largely crypto geeks and expert industry operators such as CASPs, responsible for bringing crypto projects to the market, that are able to navigate the landscape and constantly scan for new exciting projects and assess their value and listing potential (so far with questionable success). This is done by reviewing white papers, scanning websites and code audit reviews, as well as connecting with like minded industry members keeping their eyes wide open all along for projects with greatest incentives and market momentum.

MICA defines CASPs as any market player fulfilling any of the following activities[8]:

- the custody and administration of crypto assets on behalf of third parties,
- the operation of a trading platform for crypto assets,
- the exchange of crypto assets for fiat currency that is legal tender, or for other crypto assets,
- the execution of orders for crypto assets on behalf of third parties,
- the placing of crypto assets,
- the reception and transmission of orders for crypto assets on behalf of third parties,
- providing advice on crypto assets.

Chart 3 - CASPs at the heart of the market



Operating at the epicentre of the market, connecting projects and investors, it impinges upon CASPs to adopt standards and best practices to strengthen the integrity of the market and act as a filter against bad actors and shady projects. MiCA regulations clearly raise the bar in this regard.

CASPs should go over and beyond regulatory requirements and focus on educational efforts directed at investors, differentiating clearly between different crypto asset types, their risk factors, and drawing the line between legitimate projects and those that get sidelined, alongside the methodologies adopted to make that assessment.

Moreover, CASPs should also seek mechanisms to dynamically provide actionable insights to investors not only based on traditional market factors (price, liquidity, volatility, etc) but also covering qualitative factors that are important for investors to be able to make better informed, risk based, investment decisions. We explore some of these elements in more detail in the following sections alongside key areas where CASPs should lead the way in ensuring a more robust and resilient market

[8] Grant Thornton - https://www.grantthornton.ee/en/

Current Token Listing Practices

In the relatively “short” history of the crypto industry, token listing practices have differed significantly across market players and jurisdictions even more so in light of a regulatory landscape that has been somewhat passive in keeping up with the pace and providing clear standards to follow.

On one end of the spectrum, fully regulated players and exchanges, including licenced banks (such as Sygnum or Seba banks in Switzerland) have typically embraced more rigorous scrutiny of new projects compared to other CASPs that have been less constrained by regulation, policy and internal standards and more eager to focus on revenue growth above other considerations. For many players the opportunity of earning transaction fees on new trading pairs has this far significantly outweighed the desire or time to investigate the opaqueness and doubts over low quality projects. Even for some of the largest industry players servicing European customers, like Binance, Crypto.com, Huobi or Kraken, due diligence practices are unknown and risk assessments and disclosures are practically non-existent. Same goes for FTX, the poster child exchange for lack of transparency and disclosure to investors - among other things - which we describe in **Annex II.**

Below we outline a basic set of common key steps and criteria for the listing of a new token on a centralised trading venue[9]:

- Firstly, the project team submits an application to the CASP providing details about the token, its use case, technology, and compliance with any applicable regulations.
- The CASP reviews the application evaluating factors such as the token's legitimacy, market demand and other security features.
- Once approved, the token's technical integration with the exchange is initiated, involving the creation of wallets, enabling deposits and withdrawal capabilities, and activating all applicable trading pairs.
- Market makers will also be engaged to facilitate initial trading and ensure adequate liquidity.
- Pre- and post-integration testing takes place to ensure seamless functionality and security.
- Upon successful testing, the token is listed, enabling users to deposit, trade, and withdraw.
- Once listed, exchanges typically perform ongoing monitoring of crypto assets to ensure adherence to exchange minimum standards, mainly regarding their liquidity and correct functioning in the marketplace be it for changes in the underpinning blockchains such tokens transact on, managing the effects of blockchain forks, other technology upgrades and so on.

It's important to note that the CASP review and due diligence processes are proprietary processes and unique to each market player in the absence of clear rules or requirements set by regulators. Hence, while it is in the own interests of all CASPs to balance and optimise business growth and platform as well as market integrity, the primary incentives are largely tilted towards maximising the former at the expense of the latter.

The crypto ecosystem

According to insights by Coinopsy (see next table), which has analysed more than 2,400 crypto startups since 2011, 9 out of 10 projects fail within 18 months. We can hence draw a parallel between the world of crypto assets and the dynamics of traditional startups due to their inherently high risk of failure. However, a crucial distinction needs to be made between traditional startups and those we see in the crypto and Web3 industry: the liquidity and accessibility we see in crypto, allow for immediate access to these high-risk projects which is not really possible in more traditional startups.

[9] We focus here on the key steps of exchanges, given their central role and marketplace for the purchase and sale of crypto assets. Similar steps are also expected by other CASPs in the market supporting directly or indirectly the purchase and sale of crypto assets.

Traditional finance demands that companies mature and undergo rigorous scrutiny to be listed for an IPO, creating high barriers to entry. In contrast, the possibility for crypto investments opens the door to participation for all, offering opportunities for everyone to engage in the market. At least this has been the case in an environment where the listing of crypto assets to the market has been largely unregulated.

Table 1. Volume and reasons of Dead Crypto project by Year[10]

Year	Abandoned / No volume	Scams / Other issue	ICO Failed / Short lived	Joke / No purpose
2013	9	0	0	0
2014	277	20	5	2
2015	223	27	1	2
2016	152	22	4	5
2017	169	71	46	6
2018	390	237	112	12
2019	203	73	51	2
2020	77	19	9	0
2021	34	36	2	2
2022	50	23	8	2
Total	**1.584**	**528**	**238**	**33**

While centralization in traditional finance offers a better standard of due diligence, it typically caters primarily to venture capitalists, investment bankers, large funds and wealthy "qualified" individuals. Crypto, on the other hand, provides accessibility and democratises investment options to everyone regardless of their status and wallet size.

Notwithstanding the benefits that the crypto ecosystem provides to end consumers the intrinsic risks of a startup dominated industry denominated must be carefully assessed on top of the merits of the risks associated by each of its constituent projects and crypto assets. This far we haven't seen this happen leaving end investors with easy access to a wide array of investment opportunities that most likely aren't appropriate for the masses without being more carefully explained and understood.

Known Pitfalls & Opportunities for Growth

Democratising access to financial services through crypto assets is undoubtedly a breaking innovation that can open the world to financial investment in a way that wasn't conceivable a short while ago. However, this cannot happen without ensuring appropriate safety warnings and measures are put forward to educate investors and protect them from unexpected risks and inconsiderate potential for loss of capital.

CASPs such as centralised exchanges as well as crypto brokers and asset managers, face distinct challenges in their listing process:

- **Transparency Deficit** - CASPs lack clear, standardised criteria for listing tokens, leading to confusion and inconsistency. This opacity creates an environment ripe for market manipulation and investor misinformation.
- **Regulatory Ambiguity** - prior to the DLT Act and MiCA, the lack of a clear regulatory framework has resulted in uncertainties for both CASPs and token projects in navigating the regulatory maze
- **Inadequate due diligence** in the token listing process can result in listing tokens with vulnerabilities, misbehaviour, lack of transparency and misleading information, leading to misrepresentations, security breaches and financial losses for investors. Ensuring the security of listed tokens is a paramount concern for both CASPs and investors.
- Assessing **token's intrinsic risk factors** - understanding all risk factors relevant to any

[10] Source: https://www.coinopsy.com/dead-coins/

given token remains a challenge. This is not only limited to grasping quantitative risk factors such as liquidity and volatility, but other risk factors such as understanding the team, project, technology, incentives and tokenomics behind each project. A painful reminder of this issue was the crash of UST algorithmic stablecoin and TerraLuna project, as described in **Annex III**.

In terms of opportunities instead a way forward to attract more institutional investors resides in developing better discipline and control processes to gain the trust and confidence such as:

- Developing a **standardised set of criteria** for token listings can enhance transparency and fairness. Clear guidelines will create a level playing field for projects, ensuring that innovative and promising tokens have an opportunity to reach the market.
- **Enhanced Due Diligence** by implementing rigorous analytical processes that can bolster investor trust. Exchanges investing in comprehensive security audits and evaluations of token projects can mitigate risks, safeguarding both the exchange and its users.
- **Regular monitoring** and compliance checks should be maintained to ensure continued adherence to proprietary, industry and regulatory standards.
- Promote **educational initiatives** by empowering users with knowledge about token investments and market risks can enhance overall market resilience. Exchanges can play a pivotal role in educating investors, promoting responsible trading practices, and reducing the impact of market volatility.

Moreover, proactive collaboration with regulatory bodies can provide much-needed clarity. CASPs working closely with regulators can create an environment conducive to innovation while ensuring compliance with existing laws as well as designing new standards for the future, fostering a healthier market ecosystem.

We dive into these items in more detail in the following sections. Before that we will briefly explore what is brewing in the DeFI space.

Building a securer industry through DeFi

In the realm of decentralised exchanges (DEXs), the incorporation of DeFi protocols represents a promising pathway toward fortifying current token listing practices and fostering a more secure industry for crypto assets. DeFi platforms bring an array of transformative advantages, including transparency, security through smart contracts, immutable transaction records, and true decentralisation and disintermediation of traditional financial market structures.

These attributes can address a number of flaws in centralised financial activities, including the limitations we raised in traditional token listing processes, inspiring trust among participants and reducing risks of inappropriate behaviour or outright manipulation. However, plenty of challenges remain to be addressed before DeFi can truly build up and antagonise centralised market players at scale. We'll expand more into both the opportunities and some of the major challenges of the DeFi space later on in the paper.

Token Classification

The crypto landscape encompasses a diverse array of tokens, from payment tokens to DeFi tokens, stablecoins and so on. Unfortunately, these are often oversimplified and grouped together as if all tokens are simply flavours of the same macro asset class. Drawing an analogy with traditional finance, this is akin to considering equities, bonds, real estate and commodities as part of the same family of investments which is clearly far from the truth. This largely misleading perception suggests that crypto assets are merely different types of tokens and simply interchangeable into one another just like traditional currencies, such as USD, CHF or EUR. This is far from the truth and needs correcting.

While indeed crypto assets can easily be "swapped" into one another at a click of a button, each crypto asset possesses unique characteristics that require thorough comprehension starting with the very fact of understanding that for the most part, crypto assets aren't really much like what we typically perceive as *currencies* in their more traditional sense (eg. as a means of payment).

To highlight the complexity, prominent market data platforms categorise crypto assets very differently, with Coinmarketcap.com listing 210 categories, Coingecko using 119, and Messari employing 37. Establishing an industry-wide standard taxonomy is crucial for bringing clarity and structure to the market. This may take years, especially as new use cases emerge, making it imperative for CASPs and other market participants to collaborate in setting appropriate classification standards while adapting within the broader regulatory grouping of crypto assets according to their actual purpose eg. payment, utility and asset tokens.

Clarity in this space will provide the much needed transparency for all stakeholders, including entrepreneurs and end investors, who will be able to grasp a clearer understanding of the array of categories and types available, and how they differ from one another. In turn this will aid more pertinent comparisons between projects and tokens against their category "peers" (eg. stablecoins, utility tokens, payment tokens, DeFi, etc) as opposed to against the entirety of the 20,000+ crypto market.

Concretely, CASPs should consider adopting the following best practices:

CRYPTO CLASSIFICATION GUIDELINES

1. ***The broad "cryptocurrency" label should be avoided*** *and confined to payment tokens only. The term is misleading and should be replaced by crypto (or digital) assets classifications defined by FINMA, MICA and other regulators, eg. payment tokens, utility tokens, asset tokens and hybrids.*

2. ***CASPs should adopt clear crypto taxonomy -*** *in the absence of industry standard and complementing the broad regulatory definitions, all CASPs should take steps to detail crypto asset sub categories and explain how they differ from one another. Over time industry taxonomies will evolve*[11]*.*

[11] A taxonomy example - Global Crypto Classification Standard (GCCS) developed by 21 Shares and CoinGecko

Enhancing the Listing Due Diligence Process

In order to hold on to its disruptive promises and propel us into a more inclusive financial era, the crypto industry cannot afford to inherit the toxic culture often associated with the industry it seeks to outshine. While not advocates of regulation per se, there is a long history of severe market crashes, disruptions and wrongdoings in financial markets that have led to the regulations we have in traditional finance today. As crypto assets start attracting greater attention around concerns and potential impact on the stability of the wider financial system, it is no wonder regulators are making their way in. In that regard, both Swiss and European regulation and legislation are welcome developments, helping set level playing field standards on one hand while promoting industry growth on the other without stifling innovation.

CASPs should continue leading the way for financial innovation keeping market integrity and robustness as key performance indicators (KPIs) and not merely a nice to have. Technological innovation has been existentially interconnected with human evolution and prosperity but as it pertains to financial markets there is very little room for error. Immutable blockchains cannot do miracles without harnessing the way we use them.

All CASPs and market players are accountable to their customers, stakeholders and wider market in playing their role to eradicate its association to crime, scams and projects with weak foundations. Clear guardrails and boundaries must be set to avoid polluting the market with, black box, fragile, and wild west projects at every cost. In this context "less is more". The number of projects in the industry, per se, cannot be a measure of the industry's evolution and success. The number of sustainable, high quality projects is.

Institutional level scrutiny

As more experienced institutional investors, such as banks, asset managers and pension powerhouses are increasingly growing appetite to jump on the crypto assets train, their scrutiny of the market will follow significantly higher constraints than most crypto projects are prepared to offer. Institutions have legal and regulatory obligations to adhere to, internal policy requirements and stacks of stakeholders to keep in check, from boards to executives and advisors, shareholders and customers, not to mention the reputations they need to preserve. There will be no appetite to put their legacy at risk by gambling on promises of 100x returns. Institutions will be looking for diversification in their portfolios through reliable, scalable and serious technologies with yield potential, track records and an acceptable risk adjusted rate of return.

Starting with traditional measures, such as market cap, liquidity and track record, institutional interest will ignore anything other than what can be readily transacted at institutional sizes. With that alone we can expect almost 99% of the crypto universe to be out of scope of the investment horizon for institutional powerhouses. The few remaining palatable crypto assets will then be competing on the level of assurances they can provide not only on technological innovation but on regulatory adherence, governance, and risk management. Similar standards will be applied to CASPs and exchanges as well.

Hence we can expect the next wave of Institutional driven volume to concentrate on fewer, more reputable crypt projects able to pass their scrutiny. In turn, institutional demand will send a "flight to quality" signal which will spill over and further legitimise investor confidence and demand onto the wider retail investor universe.

Due Diligence Standards

Evidence of robust risk management, compliance, internal control and assurance systems and processes will be differentiating factors in attracting institutional assets and for CASPs to remain relevant in the next phase of the market cycle.

As such, CASPs need to take active steps to bridge the gap and meet the growing demands by investing and upgrading their internal risk management processes and control standards, injecting relevant skills, competencies and capabilities into their teams, as well as adopting risk management KPIs as part of broader incentive and reward mechanisms across the board.

CASPs' ability to provide timely and adequate services on operational elements such as trade & regulatory reporting, or on corporate governance elements access to financial statements, governance security audits and so on will become the norm. Market players that will fail to keep up with the growing demands, will be left behind.

To meet the growing rigour of the industry we believe all CASPs should impose rigorous due diligence standards covering the following 4 key areas:

DUE DILIGENCE STANDARDS

1. ***Robust Listing Due Diligence Process*** *- a comprehensive process should be in place including a set of criteria to closely examine and dissect the merits as well as the risks of each project considered. Criteria selected should cover a wide range of quantitative and qualitative elements* ***(see next page****) ahead of any projects being listed. Independent functions such as risk, legal, compliance and security experts should be incorporated into the process to balance decision bias.*

2. ***Transparency of Due Diligence Process*** *- the due diligence process including relevant features and characteristics from the review of each crypto project listed should be made available to end investors in order to provide clarity on their internal standards and ultimately help investors make better informed investment decisions.*

3. ***Ongoing Due Diligence Monitoring -*** *due diligence doesn't stop after listing. CASPs should implement monitoring mechanisms to assess how projects evolve over time and raise flags or warnings where any signals or concerns of fragility or deterioration are triggered that could jeopardise investor's interests as well as market integrity. Where deterioration of projects is identified, users should be duly informed and invited to consider taking action.*

4. ***De Listing Mechanisms -*** *CASPs should also consider mechanisms for delisting projects upon certain red flags being triggered, taking all possible steps to keep customer interests and market integrity at the forefront. In such cases investors should be provided with actionable options to sell, divest or take other relevant steps including ways to transact such assets.*

Due Diligence Criteria

As it pertains to the specific criteria to be considered for robust due diligence screening both pre-listing as well as on an ongoing basis, CASPs should ensure a number of key factors have been carefully scrutinised to acceptable levels in line with the risk appetite of each CASP. The following are a list of best practices we believe all market players should consider adopting as part of their due diligence process. A further list of "red flags" and current market practices that should be categorically avoided can be found in **Appendix I**. These criteria should be clearly documented, and reviewed by stakeholders across different business and functional lines and technical competences to balance growth incentives and biases with security and risk.

10 DUE DILIGENCE BEST PRACTICES TO ADOPT

1. ***Founders & Team*** *- who is behind the project? What is their background? Do they have adequate experience and competence on all key competences necessary (eg. tech, business, finance, as well as security, legal, risk and compliance) ? Are they contactable?*

2. ***Project Fundamentals, Funding and Traction*** *- is a documented white paper available? What is the project about? What problem are they solving? Do they have a clear strategy and funding? What traction do they have and how likely is the project to prevail?*

3. ***Technology*** *- what innovation do they bring? What blockchain(s) do they use and why? What dependencies do they have? Is it audited? What change management controls are in place? Who has access to critical systems and data? What vulnerabilities are known?*

4. ***Security*** *- what security measures are in place? Are user assets ring fenced and secured versus company assets? Who controls company and customer wallets? Have controls been independently audited? Do they have an audited Proof of Reserves? What is their uptime and what safeguards and processes are in place in case critical systems go down?*

5. ***Governance, Risk, Compliance & Ethics*** *- Who is calling the shots? Is governance in place and are independent Board members appointed? Are independent teams in place to challenge the business, provide assurance and uphold regulatory, security and compliance standards?*

6. ***Company Audits*** *- are financials audited? How about compliance, technology and security?*

7. ***Licencing and Regulatory Setup*** *- where is the company based? What licence does it hold? Is there a disconnect between the jurisdiction of licence, founders, teams and customers? How mature is the regulatory regime in the chosen legal nexus? And how does the entity setup align with the location of directors, teams and customers?*

8. ***Tokenomics*** *- how does the token work? How do the incentive mechanisms work? Are they credible and realistic? Who controls the token supply? Is the supply of tokens concentrated in a few hands only? Are any tokens locked for investment?*

9. ***Financial Engineering*** *- how liquid is the token? Where is the token listed? Who are the market makers? What significant inflows and outflows exist to / from entity wallets? Are there any significant affiliates to be noted and of concern?*

10. ***Community and Target Market*** *- who is the target community? What do they value? Any flags or toxic warnings we can infer from scanning the web or social media channels?*

Dynamic Risk Assessment & Disclosure

Trust Scores

Combining the above mentioned due diligence criteria together should support the creation and use of an overall **trust score** for each crypto asset that can be measured and monitored over time. Trust scores can go a long way in demonstrating the due diligence performed by the CASP and inform the user of how different tokens compare to one another, highlighting potential areas of weakness they should consider before investing. Trust scores should be disclosed alongside their methodology to investors who in turn will be able to use these factors to make better informed investment decisions not solely based on market price, and momentum. At present a price and a historical chart is typically all you find.

Coingecko.com, a leading market data provider, has adopted trust scores (albeit limited to exchanges as opposed to the underlying crypto assets listed) and published their methodologies to the market. Similarly, Certik has taken steps to independently audit and assess smart contracts and blockchains. These examples are promising but remain marginal and more like the exception than the rule as exchanges and CASPs continue promoting crypto assets for investment with little to no insights whatsoever on token risk factors[12].

Education and Disclosure

Crypto and Web3 are becoming synonymous with innovative interfaces enabling investment at ease with QR-like and instant “click of a button” user experience. Moreover, gamification and AI are constantly being explored to make investing even easier to savvy investors as well as to novices with close to zero financial experience let alone knowledge of blockchains, crypto and Web3.

[12] https://www.coingecko.com/en/methodology & https://www.certik.com/

This has a number of advantages on matters such as efficiency, access, and inclusivity, but also comes with challenges regarding the ease and rapidity with which retail investors can commit significant capital with limited to no financial and investment knowledge, and with no precautions or warning signs whatsoever. If this industry is truly about financial inclusivity, then that journey starts with understanding who the customers are and ensuring they have every right to understand what they are getting into. According to a recent paper on crypto risks published by the BIS, data shows clearly that it is the least savvy retail individuals - unsurprisingly - who have proved to be affected the worst in chasing prise rises during bull markets, and being slower than proficient investors in divesting and cutting losses during market falls[13]. Investors with least capital and knowledge to start with are those who end up with greatest losses. White this may not be unique to crypto, the safeguards and provisions you can expect from banks and brokers in TradFi are on another level.

All CASPs are ultimately centralised financial intermediaries and as such they cannot really hide from basic fiduciary responsibilities to the end consumer, particularly with respect to the average retail investor. Even more so in the early stages of this industry, until crypto assets are better understood, classified and regulated, it is essential that CASPs lead the way in educating retail investors and ensuring they have every opportunity to appreciate the nature of the risks of the products they are getting into.

Current standards are substandard, ranging from optional video or educational academies available on websites and media channels such as youtube, instagram or similar. Others offer one liner generic risk disclosures and warnings in tucked away sections in their apps and websites, and most CASPs hesitate to provide pre-investment warnings

[13] BIS - The crypto ecosystem: key elements and risks

and pop up features to avoid scaring customers from their next trade. Furthermore, practically all market players rely on long legalese and incomprehensible jargon in small font terms and conditions that do everything to escape responsibility of CASPs and practically nothing to help users make well informed investment decisions. None of this helps investors embrace the crypto revolution and really learn what they are getting into.

It is every CASP's fiduciary responsibility to adequately present their customers with a clear set of key facts to enable them to make sounder investment decisions. This should not be limited to market information such as price, volatility, market cap or 24hr trend (up or down) but should also cover pertinent risk factors which may differ depending on the type of crypto asset in question, such as its purpose, its' token mechanics, and other key elements and dynamics which may be affecting the token's current or future price.

The risk characteristics of stablecoin differ enough among one another (say USDT vs UST), let alone against other types of tokens such as a blockchain token (eg. Solana) a DeFi token (eg. LIDO, AAVE) and so on. Risk disclosures should be designed to provide specific insights and disclaimers to help users understand their intrinsic properties. Similarly, a token subject to an imminent fork, a change in utility, a change in tokenomics, or a token subject to low liquidity will also have different risk characteristics needing to be appreciated and considered in order to anticipate the possible ranges of impacts on their future value.

Suitability and Appropriateness

For most CASPs acting as pure market venues (i.e. no advice given) and hence largely executing unsolicited orders, current appropriateness assessments on behalf of customers are nowhere to be seen. This is simply not good enough. This is not how we democratise and open up financial inclusion to the masses. This is how we scare them and see their future propensity to invest hibernate as opposed to encouraging them to learn and have another go.

In this regard, the crypto industry should inherit queues and best practices from the financial industry (eg. MiFid) and ensure reasonable measures are taken to assess the appropriateness of any given investment with respect to investor's relevant experience, and other key factors such as their declared wealth, knowledge and experience, their profession and background, as well as volume and frequency of past investment activity. Besides, CASPs already collect varying amounts of user information from more static profiling data (typically to satisfy KYC requirements) to dynamic investment behaviour inferred through their trading history hence with minimal further "engagement" steps can be easily taken to broaden CASPs understanding of investors' key information.

With relatively simple models and digitally enabled data matching pre- and post-trade mechanisms, CASPs should be looking for opportunities to notify investors when trading activity and exposure levels may appear out of range or risk appetite and warrant a prompt for users to acknowledge and take action on, and that way earning their trust. Crafty gamification and AI can also be put at work to improve legacy traditional finance approaches towards optimising risk taking for retail customers.

For any CASPs venturing into advisory services, whether through proactive marketing and financial promotions, direct solicitation of investment ideas or through outright management of assets, then the fiduciary responsibilities become even higher, requiring further care and consideration in ensuring appropriate controls and mechanisms are put in place to assess the suitability of each trade and investment idea against any given investors' needs.

CASPs operating in this capacity should think carefully as to how to adapt and upgrade their control infrastructure or change their business models altogether to avoid prohibitive regulatory fines and sanctions. Time is up, party time is over.

Challenges and Future Outlook

An industry of tech Start-ups

Granted, due diligence takes time, can be painful and costly and it can slow down growth too. That is clear. Also, if not done comprehensively following clear regulations and standards applicable to all players, certain CASPs may attempt to cut corners and seek competitive first move advantage in listing promising new projects ahead of others. Those are risk and reward trade offs that CASPs need to carefully evaluate.

Let's face it though. Despite the standard gospel and marketing cry for *decentralisation*, 99% of crypto assets are everything but decentralised with most of their value locked into the minds of smart founders and code bases of clever engineers. With Bitcoin (and latest DeFi evolutions) to one side, all crypto projects are centrally run by people and teams, taking strategic decisions on anything from tech stacks to product designs, writing code and building infrastructure on blockchains or fancy interfaces, making tradeoffs along the way on use cases and every possible security feature you can imagine.

The crypto market, including the very largest exchanges as depicted in figure 3, are dominated by de facto tech “startups" and “scale-ups” that for all intents and purposes operate just like any other early stage tech companies searching for innovative breakthroughs, facing similar challenges in attracting funds, scaling up and making their founders and investors wealthier than they started with while having enough cash to fund their near term payroll and runways. Even as we look at the wider global crypto market and the very largest centralised players, we should remember that none of these existed a decade ago and practically all of them face the challenges described above as well as the higher demands and scrutiny of investors, regulators and the wider public. With a universe of startups leading the crypto industry, shortsightedness and lack of maturity on a spectrum of matters such as risk management, legal and compliance had to be somewhat expected. Going forward, hardcoding risk management, leadership behaviours and principles, aided by regulatory compliance, proper licensing in trusted jurisdictions, including robust and independent audits has got to be the way forward to gain wider trust and adoption from the public.

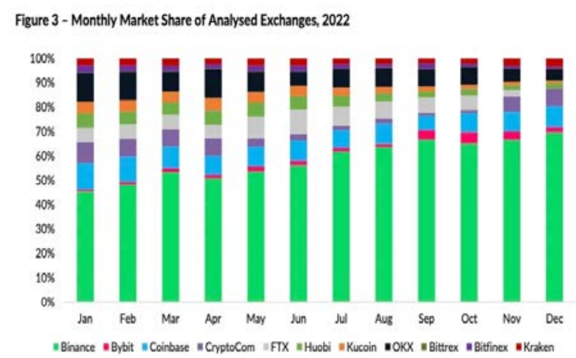


Image Source: Coindesk

On Innovation & DeFi

Despite the impact of the crypto winter and the incoming pressure of growing regulatory requirements and scrutiny, the crypto market keeps building relentlessly by strengthening technologies and opening up to further use cases which we can only expect to bring more disruptive innovation to an extent we have hardly begun to imagine.

Alongside innovation will come new types of crypto assets, and with them, new risk dimensions and characteristics which will need to be debunked, clearly articulated and disclosed along the lines of the same recommendations laid out in this paper.

We can also expect further technological advancements in DeFi, for instance enabled via Zero Knowledge (ZK) Proofs to accelerate crypto adoption through truly decentralised trade venues capable of fully regulated and compliant protocols with embedded risk management capabilities.

It has to be recognised that even at the peak of the 2022 sell-offs in the crypto markets, all major decentralised exchanges (DEXs) platforms have continued working seamlessly allowing users to access their positions and exit them as they preferred albeit at lower prices[14]. An important DeFi takeaway from the 2002 distressed markets is that while prices might have been falling significantly, users maintained full control of their assets guaranteeing a level of consumer protection that the industry should draw inspiration from at least insofar as removing counterparty risk from the equation.

While DeFi solutions continue to show promising signs in providing for permissionless and trustless financial services, and eliminate the least efficient and manipulation prone centralised finance, they still have a long way to go in solving the possibility of bad actors programmatically gaming the system and draining consumer assets through carefully designed attacks. According to Coingecko, 91% of all the crypto markets' hacks in Q1 2022 were exploited in the DeFi space[15]. The figure below shows how DeFi security hacks have grown relative to the industry during 2021 and 2022.

Figure 4 - Crypto assets hacks by platform type

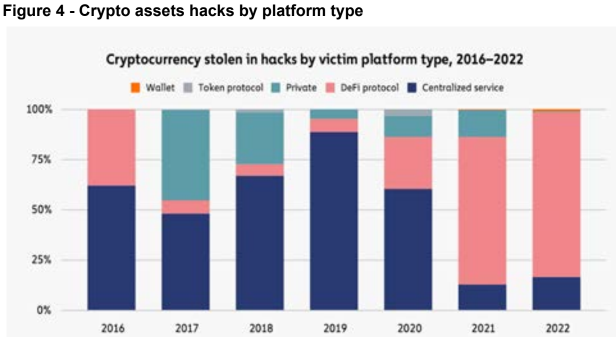


Image Source: Hacken

Moreover, DeFi user experience as well as genuine understanding of its mechanics also need to mature to gain the trust of retail and institutional investor communities. Until we get there, it is CASPs and other centralised players that will hold the keys to the industry's success.

Besides its current challenges around liquidity, cybersecurity and user experience, and in order to hold on to its promise of genuine decentralisation of traditional finance, DeFi needs to solve for the "oracle problem", due to the fact that blockchains have no secure and meaningful means to interact with external sources of data[16]. DeFi needs to find a trustless and immutable way of injecting real world regulatory, risk management and compliance certainty into its underpinning smart contracts.

Once trusted data oracles can be provided into the DeFi space, decentralised platforms will be able to leverage the programmatic nature of tokens and smart contracts to provide automatic rule-based analysis of tokenomics sustainability and financial scrutiny without needing any qualitative filters.

Though these challenges and considerations persist and remain to be solved for, the evolution of DeFi holds immense potential to propel us into a new era of confidence, trust, and robust security in the crypto and Web3 ecosystem. The genie is now out of the bottle and there is no way of ignoring it anymore or putting it back in.

[14] Cassatt (2022)
[15] 2022 Q2 Quarterly Report - Coingecko

[16] Blockpit - The Oracle Problem

Conclusion

The tech mantra of “break things and move fast” has had the upper hand in opening rounds of the crypto industry and while plates have been broken, plenty of ground has been covered. For starters, there is no longer a question as to whether crypto and blockchain technologies are here to stay. There is practically no government on the planet that hasn’t taken note and taken steps to regulate, enable or, in some cases, censor the use of crypto. Many major governments and central banks are seeking to re-engineer their existing monetary frameworks and currencies on blockchain rails.

Web 3.0 technologies, governed through cutting edge computer science, blockchain and smart contracts, have the potential - if properly used - to bring about unparalleled transparency and security to the crypto and wider financial industry. Yet, if crypto and Web3 are to pursue the vision of a more inclusive and efficient financial ecosystem for the world, then they need to innovate, disrupt and do better than the incumbent industry on every level, embedding regulation, risk management and resilience at its very core. While in the medium term we can expect these elements to be built directly onto decentralised DeFi rails, which in turn will likely attract further confidence and investment flows, it is CASPs in the near term that will have to evolve and play a greater leadership and guardianship role in taking this industry forward.

Regulations such as MiCA are already providing the much needed pillars upon which the industry can continue building with confidence. Imminent white paper and marketing disclosure requirements will no doubt provide a solid base to start for all industry players. But this is likely not to be enough.

In this paper we outlined the 3 key areas we believe to be critical for CASPs and other central actors to adopt in order to enhance the security of the market, the protection of its investor base and regain much of the eroded industry trust.
Specifically we proposed that CASPs:

- Adopt clear token classifications,
- Enhanced due diligence processes,
- Implement dynamic risk assessments and disclosures

Being digitally native by design, the crypto industry should leverage its in-built tools and capabilities to self-impose these standards without inhibiting growth. If anything, industry players should seek to redefine risk management approaches, adapting them as necessary to provide water tight security to this financial technology evolution via clever engineering, harnessing AI advances and bringing together experts from technology, traditional finance and the regulatory space as well.

The scars left from the latest crypto winter coupled with inbound institutional demand and heightened regulatory pressure, will see risk management provide for a clear differentiating factor in attracting sustainable investment flows and drive towards an industry made of fewer, higher quality projects. This might not be great news to all crypto entrepreneurs out there but will drive greater competition for the smartest ones to come on top. As ever, risk and reward are just two sides of the same coin. You cannot have one without the other.

The Swiss market remains well positioned to continue playing a leadership role in this industry, with a clear regulatory and tax framework on blockchain and crypto assets, an innovative track record seeing the first native crypto banks, becoming a hub for some of the world’s leading crypto projects, adopting Bitcoin as means of payment (eg. Lugano, Zug), and even enabling Bitcoin ATMs since 2014. Despite the crypto winter, 1000+ companies are busy innovating and building out the foundations and use cases for the future of the crypto industry on Swiss pastures.

This is promising, though market participants and crypto builders cannot afford to stay complacent and rest on their laurels.

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Appendix I - 10 Due Diligence "RED FLAGS" to avoid

Below is a list of practices and signals to avoid or that should raise concerns to anyone involved in the listing process.

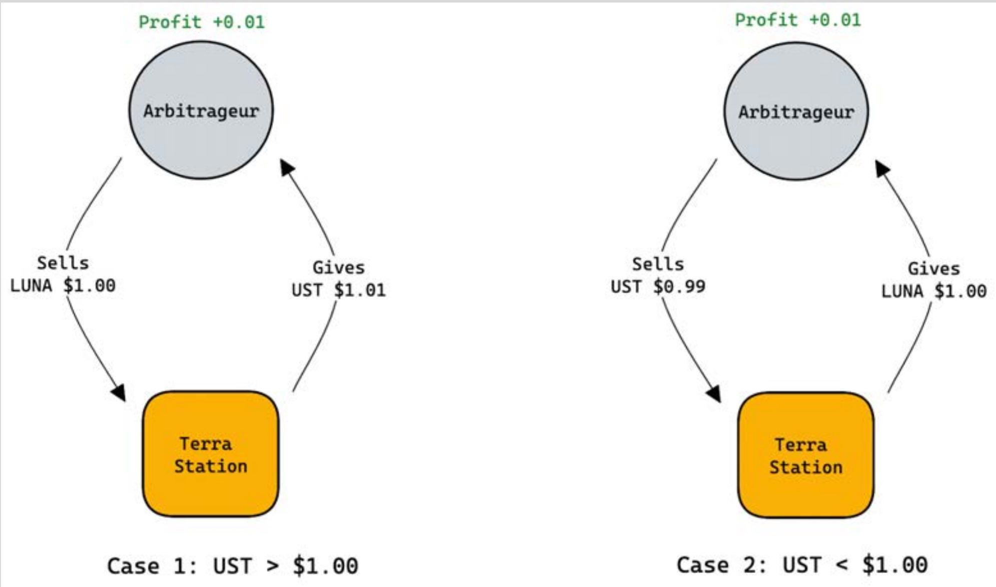
10. Red Flags that should raise concerns
1. ***"The CEO wants to list them, we must list ahead of the market..." -*** *Nothing wrong per se, still need to do the homework and scrutinise the project carefully. Prioritise safety ahead of reputation even if this might compromise early revenues. Nurture a long term culture.*
2. ***"They are the biggest thing in town…" -*** *So what? If they go down everyone else is exposed (eg. FTX). Understand what is attracting demand and question what might be missing. Bring a contrarian in the room and find arguments to consider against the case for listing the project.*
3. ***"Everybody wants XYZ…"*** *If everyone wants opium do you need a piece too? Get over "get rich soon" schemes. Demand is promising, but healthy demand is much better. Dare to be different. In the long run it pays off.*
4. ***"They are offering 20% returns…"*** *Ask yourself why? What are the tokenomics and incentives? Where does the money go to enable that? Think TerraLuna. If you can't understand it or if you can't explain it to your neighbour, let go. There are no free lunches.*
5. ***"Company X and Y or Super Personality Z are investors…"*** *So what? What do they get in return? What links and ties are there? Are there affiliates in place?*
6. ***"Investment Fund X is behind them…".*** *What are the trading flows and links between the project and other exchanges or entities? What blockchain or banking activity is known and public? Are there significant flows that raise questions? Think FTX flows Alameda Research or even FTX and Solana.*
7. ***"We need volumes and fees to come in…" -*** *Everybody does. Do your homework first. Long term customers value standards and security over short term wins. Greed and desperation can lead to reputation and brand value vaporising overnight. Tread carefully*
8. ***"Our CEO / Directors know the guy directly…" -*** *So what? Everybody knew Madoff and SBF. We know how the story went…*
9. ***"Their technology is the best…"*** *Really? For what? How? Has it been audited and battle tested? Do they have a track record? What is their uptime? What dependencies do they have?*
10. ***"Their incentives and airdrops are awesome…"*** *Really? For what? Why are they giving free money? What is behind it? Where is the catch?*

Appendix II - UST and Luna Crash

An overview of the major flaws relating to the depegging of the algorithmic UST stablecoin and collapse of the Luna token

The Terra protocol creates stablecoins designed to consistently track the price of a fiat currency. Because the primary value of stablecoins is derived from the stability of the price peg, theoretically bypassing the volatility typical of cryptocurrencies, the Terra protocol attempts to maintain the price of the Terra stablecoin by ensuring that the supply and demand for it are always balanced by employing arbitrage.

Terra's ecosystem, which included LUNA – the reserve asset backing the UST stablecoin – was unable to maintain the UST-dollar peg. UST relied on arbitrageurs to maintain its peg to the US dollar:



Terra, the issuer of the stablecoin UST, collapsed in May of 2022 due to spiralling losses related to its token design. The value of the UST stablecoin was pegged to the US dollar. It relied on the minting and burning of collateral token LUNA (through the central platform Terra Station) to adjust its value in the case of deviations. There was an overreliance on arbitrageurs to maintain the peg of the stablecoin UST to the US dollar.

The sharp price drop of UST depegging from its $1 peg (which arbitrageurs could not correct) induced widespread panic in the market and caused the project, originally valued at $60 billion, to lose nearly all value in a matter of days. The prices of both LUNA and UST eventually dropped by more than 99%.

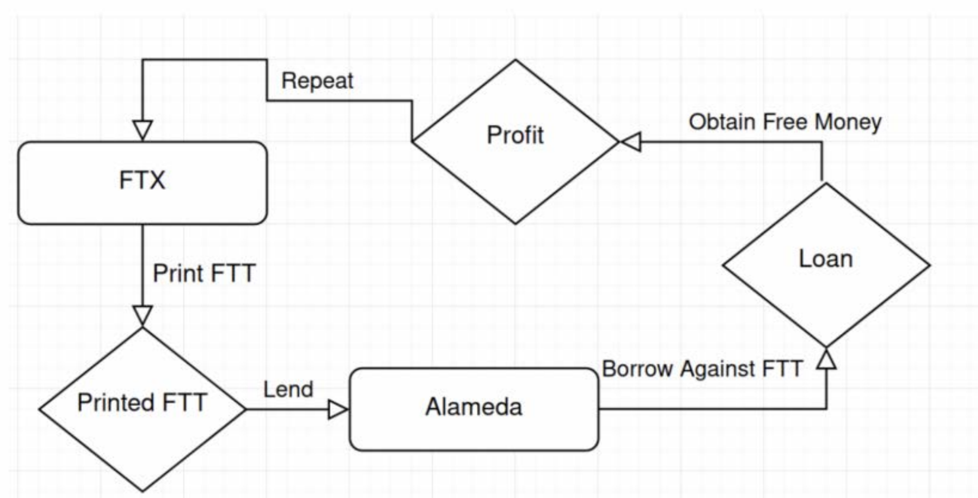
Risk analysis and stress testing related to the risk of depegging and the behaviour of stakeholders such as arbitrageurs could have helped to prepare for the risk of the inevitable event.

Appendix III - The FTX Collapse

An overview of the major flaws relating to the collapse of the FTX exchange and related tokens.

FTX, a centralised exchange platform, faced a critical issue when it used customer deposits for purposes undisclosed to its users. Instead of holding secure assets or acquiring desired cryptocurrencies, FTX diverted these funds, lending them to Alameda Research, an FTX subsidiary. Alameda, in turn, used these funds to purchase FTT, FTX's less popular token.

In November 2022, CoinDesk published an article exposing FTX's improper holding of FTT tokens, amounting to approximately $5-6 billion in price (not the actual value). As a result, FTX users discovered that their funds were not being utilised as expected. Many customers withdrew their assets, but FTX could not fulfil these requests as it lacked the necessary funds. Consequently, FTX attempted to sell its FTT holdings, causing a sharp decline in FTT's market value. FTX had no choice but to declare bankruptcy on November 11.



Infinite Money Diagram

This turn of events sent shockwaves through the cryptocurrency market, causing a significant drop in FTT and FTX's prices, as well as affecting the prices of Ether and Bitcoin. The incident revealed a substantial crisis in the crypto economy, raising questions about the security and transparency of centralised exchanges.

FTX and its sister companies did not produce balance sheets showing assets and liabilities, which is standard financial reporting procedures. FTX's balance sheets were never audited because it was a private company. Without these audits, there was no record of cash flow or assets to show the company could cover liabilities or customer assets. FTX balance sheets showed assets were less than their CEO, Sam Bankman-Fried, had stated.

About the Authors

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Francesco read Economics & Finance at the University of York and obtained a Masters in European Business before embarking on a 20+ year career managing risk, governance and internal controls in major Private & Retail Banks, Central Banks as well as a Swiss Crypto startup.
Francesco specialised in the domain of Operational Risk implementing risk frameworks, governance, internal control and transformational programs, taking on several senior roles covering European and Asian markets at Morgan Stanley and HSBC.
He also advised the Bank for International Settlements (BIS) before building out the Risk function and capabilities at SwissBorg, a Swiss-based CASP.
Francesco is passionate about sustainability, innovation and the disruptive promise of crypto and decentralised finance. He fell into the blockchain and crypto rabbit hole in 2019 and hasn't looked back.

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Marco holds a master degree in software engineering and is passionate about breaking down entry barriers to crypto markets and complex financial markets.
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Marco has a deep knowledge of the mechanisms that regulate digital financial systems (at their core) which allowed him to build CFD based products, Market Making strategies and new crypto-based structured products.
Marco advises FinTech startups to bring forth their full potential while making the smart technological choices that are a basic component of every modern company.

About the "Not Your Money" platform

Not Your Money is an educational and advisory platform aimed at demystifying the complexities around crypto, and making them accessible to everyone and in turn enabling investment with confidence.

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