Banc Ceannais na hÉireann
Central Bank of Ireland
Eurosystem

Record 1

Discussion on crypto in preparation for FSG

Chew session: 11/01/2023

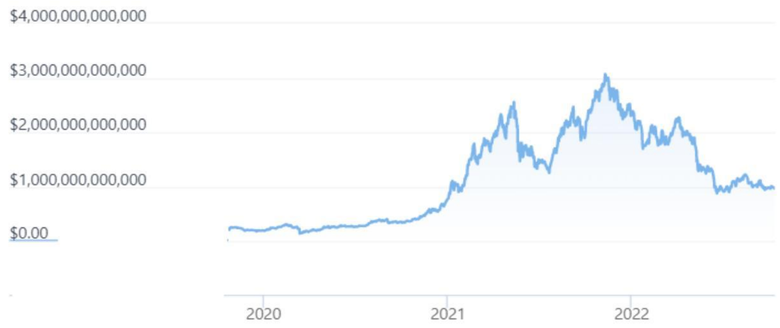
Purpose of chew session

- The topic of crypto is on the FSG agenda on 18th January at the request of the Governor.
- In preparation for this discussion, PRHT have led on a discussion paper to help facilitate and inform discussion.
- The purpose of this chew session is to facilitate internal Bank discussion in preparation for the FSG meeting. As such, the paper and this accompanying slide deck will:
  - Present an overview of the current developments within the sector
  - Present the Banks current nuanced positioning regarding crypto
  - Highlight lessons learned from the crypto downturn of 2022
  - Present an overview of the sector in the Irish context including an overview of current pipelines within the Bank

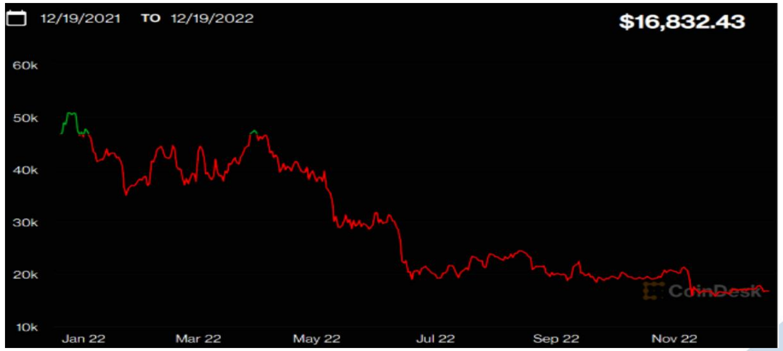
Turmoil in crypto market

- The crypto sector in 2022 experienced an extended period of market turmoil with a number of high profile incidents, including the crypto crash of TerraLuna (algo stablecoin), and failing of the Celsius/3AC and FTX hedge funds. As such, it is timely to consider the current state of this sector and the risks therein.
- With regard to the most recent FTX incident (currently under investigation as an alleged fraud), it appears that the European and Irish exposures to FTX were limited, as the majority of FTX customers were based outside of Europe.
- FTX and other market failures highlighted how risks in the crypto sector could manifest.
- The new European Markets in Crypto Asset Regulation (MiCA) will bring many of the actors in the crypto ecosystem within regulation, many for the first time and in a manner convergent across the European Union (EU). This will help to address many of the current risks and importantly, ensure a consistent approach, across the EU, to regulation of this largely cross-border sector.

Global market cap of crypto market



Bitcoin price December 2021 – December 2022



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Interconnectedness of crypto markets and traditional financial markets

Bitcoin: 30 day correlation to Nasdaq, S&P 500 and Gold

- Regarding financial stability, while the connection is increasing, studies from the Financial Stability Board (FSB), Basel Committee on Banking Supervision (BCBS), Organization for Economic Cooperation and Development (OECD) reaffirm that the interconnectedness of crypto markets and traditional financial markets remains limited and the recent turmoil in the crypto sector has not materially affected traditional financial markets due to the former's relatively small size.
- This comes with a caveat in that, **should these factors change, future turmoil in a larger crypto sector could have implications for financial stability**.

The Bank’s position on crypto: Nuanced

In considering crypto, the Central Bank of Ireland’s (the Bank’s) position is nuanced.

Given the breath of crypto, we adopt positions on the various elements (the products, the firms, the underlying technology), as opposed to one overall position.

Decoupling back and unbacked crypto assets

In considering crypto products, the Bank differentiates between backed crypto and unbacked crypto.

The Bank is positive towards the potential of backed crypto, including Electronic Money Tokens and Asset Reference Tokens under MiCA**, where appropriate reserves and controls are in place (as will be required under the MiCA regulatory framework).**

Regarding unbacked crypto (including poorly or unreliably backed), **our position is one of concern and caution**.

We are **concerned about the potential for investor/consumer harm** and warn about the potential dangers of investing in unbacked crypto.

There is **merit in continuing to warn/ discourage consumers** from engaging with unbacked crypto.

This period also highlighted the impact of "finfluencers" (often celebrities) on consumers' engagement with crypto, raising a question as to **the need for a cross-authorities' response on crypto**

Differentiating between consumers and professional investors

Differentiating between consumers and professional investors is important.

In this regard the bank currently only supports exposure to unbacked crypto assets for qualified investors.

The Bank adopts an approach where QIAIFs can make a material investment in crypto-assets indirectly, with limits for indirect investment in crypto-assets set at 20% of net asset value where the QIAIF is open-ended, and 50% of net asset value where the QIAIF has either limited liquidity or is closed-ended.

The Bank’s position on crypto asset service providers

We operate in a jurisdiction where innovation is increasingly a feature of the financial system and the market generally.

Firms providing crypto services, such as exchange, transfer, custody and issuance of crypto are present in the Irish market, as evidenced by the Bank’s pipeline for Virtual Asset Service Provider (VASP) registration.
The Bank’s position is that these firms should be regulated, putting in place appropriate guard-rails for this sector.

MiCA will be a first step in regulating crypto and in addressing the potential risks therein. The Bank will effectively implement MiCA as it is designed and in any appropriately professional manner.

Within that context, we are open to authorise firms in this new regulated sector.

However, we are alive to the risks of exposure to unbacked crypto via inter-linkages within a group structure, for example, where there is insufficient firewall between a regulated entity and the exposure to unbacked crypto of other entities within the group structure.

The Bank’s position on the technology underpinning the crypto ecosystem

While still at a relatively early stage of development, the technology underpinning crypto, blockchain and distributed ledger technology (DLT), has potential to deliver significant benefits as it evolves and is deployed to different purposes.

The full range of benefits will only become apparent with ongoing use and evolution and with the further increased digitalisation of society and economy.

Our challenge is to facilitate this happening, while ensuring that undue loss and damage to users or to the financial system does not occur in the meantime.

The Bank's position on EU and international regulatory work on crypto

The Bank supports the European Commission's plan to continue to monitor crypto and to consider possible further regulation in this area.

Other authorities, such as the European Supervisory Authorities (ESAs), European Central Bank (ECB), International Organisation of Securities Commissions (IOSCO), FSB, BCBS, OECD continue to monitor and develop positions on crypto, thus informing the future direction of regulation in this area. Notably, in December 2022, the Basel Committee on Banking Supervision (BCBS) adopted standards for the prudential treatment of banks' exposures to crypto assets.

In summary, within proper regulatory guardrails (including consumer warnings) and in the right regulated environment (initially MiCA and the standards adopted by BCBS and other authorities), the broader developments within crypto and underpinning technologies could potentially contain future benefit to improve the efficiency and delivery of financial services.

Banc Ceannais na hÉireann
Central Bank of Ireland
Eurosystem

Discussion on crypto

Chew session: 11/01/2023

Purpose of chew session

Purpose:

- Given the recent turmoil in the crypto market, it is timely to consider the current state of this sector and the risks therein
- To seek views/observations on the Bank's position on crypto

Next steps:

- The topic of crypto is on the FSG agenda on 18th January at the request of the Governor
- The Governor's next blog will focus on crypto

Supporting material:

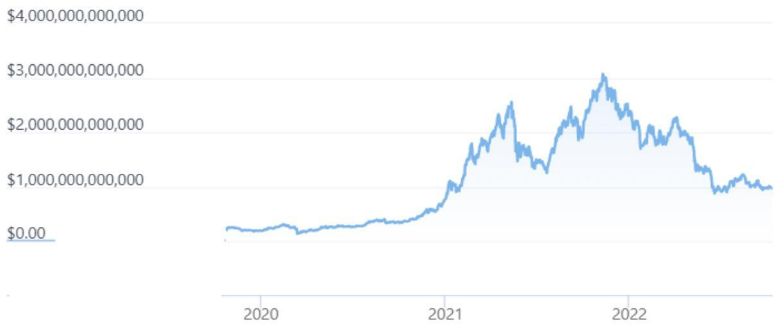
- PRHT have led on a discussion paper to help facilitate and inform discussion.

- The paper will:
  - Present an overview of the current developments within the sector
  - Present the Bank's current nuanced positioning regarding crypto
  - Highlight lessons learned from the crypto downturn of 2022
  - Present an overview of the sector in the Irish context including an overview of current pipelines within the Bank

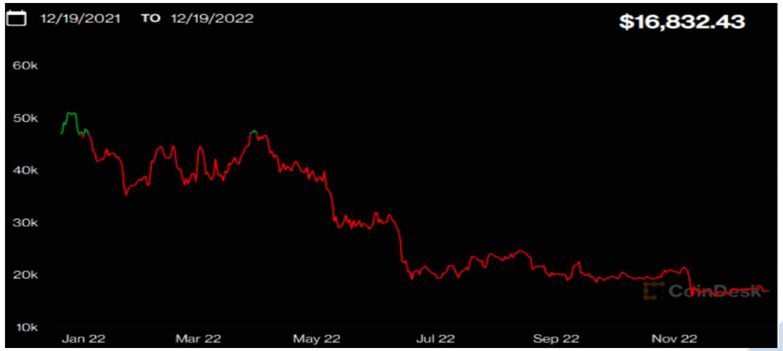
Turmoil in crypto market

- An extended period of market turmoil in 2022, with high profile incidents, including the crypto crash of TerraLuna (algo stablecoin), and failing of the Celsius/3AC and FTX hedge funds.
- Re. FTX incident, it appears that the European and Irish exposures to FTX were limited, as the majority of FTX customers were based outside of Europe.
- FTX and other market failures highlighted how risks in the crypto sector could manifest.
- The new European Markets in Crypto Asset Regulation (MiCA) will bring many of the actors in the crypto ecosystem within regulation, thus helping to address many of the current risks. Also, importantly, MiCA will ensure a consistent approach, across the EU, to regulation of this largely cross-border sector.

Global market cap of crypto market



Bitcoin price December 2021 – December 2022



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Interconnectedness of crypto markets and traditional financial markets

- Regarding financial stability, while the connection is increasing, studies from the FSB, BCBS, OECD reaffirm that the interconnectedness of crypto markets and traditional financial markets remains limited and the recent turmoil in the crypto sector has not materially affected traditional financial markets due to the former's relatively small size.
- This comes with a caveat in that, **should these factors change, future turmoil in a larger crypto sector could have implications for financial stability**.

Bitcoin: 30 day correlation to Nasdaq, S&P 500 and Gold

The Bank’s position on crypto

In considering crypto, the Bank’s position is nuanced.

Given the breath of crypto, we adopt positions on the various elements:

- the products (backed crypto and unbacked crypto)
- the firms
- the underlying technology

Decoupling back and unbacked crypto assets

In considering crypto products, the Bank differentiates between backed crypto and unbacked crypto.

Backed Crypto

- We are positive towards the potential of backed crypto, including Electronic Money Tokens and Asset Reference Tokens under MiCA**, where appropriate reserves and controls are in place (as will be required under the MiCA regulatory framework).**

Unbacked Crypto

- Regarding unbacked crypto (including poorly or unreliably backed), **our position is one of concern and caution**.
- We are **concerned about the potential for investor/consumer harm** and warn about the potential dangers of investing in unbacked crypto.
- There is **merit in continuing to warn/ discourage consumers** from engaging with unbacked crypto.
- Impact of “finfluencers” on consumers’ engagement with crypto - **the need for a cross-authorities’ response on crypto advertising via**

Differentiating between consumers and professional investors

- Differentiating between consumers and professional investors is important.
- The Bank currently only supports exposure to unbacked crypto assets for qualified investors.
- The Bank adopts an approach where QIAIFs can make a material investment in crypto-assets indirectly, with limits for indirect investment in crypto-assets set at 20% of net asset value where the QIAIF is open-ended, and 50% of net asset value where the QIAIF has either limited liquidity or is closed-ended.

The Bank’s position on crypto asset service providers

- We operate in a jurisdiction where innovation is increasingly a feature of the financial system and the market generally.
- Given the level of innovation in Ireland, firms providing crypto services are present in the Irish market
- The Bank’s position is that these firms should be regulated, putting in place appropriate guard-rails for this sector.
- MiCA will be a first step in regulating crypto and in addressing the potential risks therein. The Bank will effectively implement MiCA as it is designed and in an appropriately professional manner.
- Within that context, we are open to authorise firms in this new regulated sector.
- However, we are alive to the risks of exposure to unbacked crypto via inter-linkages within a group structure.

The Bank’s position on the technology underpinning the crypto ecosystem

- The technology, Blockchain and DLT, has potential to deliver significant benefits as it evolves and is deployed to different purposes.
- The full range of benefits will only become apparent with ongoing use and evolution and with the further increased digitalisation of society and economy.
- Our challenge is to facilitate this happening, while ensuring that undue loss and damage to users or to the financial system does not occur in the meantime.

The new regulatory framework for crypto

- Crypto easily crosses borders, so it is important that regulation is consistent across the EU.
- MiCA will bring many of the actors in the crypto ecosystem within the regulatory perimeter.
- It will put in place prudential and conduct requirements (including safeguarding) for these firms, many for the first time.
- But, the crypto ecosystem continues to evolve, so we support the European Commission’s plan to continue to monitor crypto and to consider possible further regulation in this area.

- In addition to MiCA and looking at the cross-global nature of crypto, the ESAs, ECB, IOSCO, FSB, BCBS, OECD continue to monitor and develop positions on crypto, thus informing the future direction of regulation in this area
- Notably, in December 2022, the BCBS adopted standards for the prudential treatment of banks’ exposures to crypto assets.

Chew Session	Discussion on Crypto
Date of meeting	January 11th 2023
Status of paper	For Discussion
Issue	The crypto sector in 2022 experienced an extended period of market turmoil with a number of high profile incidents. As such, it is timely to consider the current state of this sector and the risks therein.
Authors/Presenters	[redacted]
Ask of Attendees	The attendees are asked for their views and observations on the approach outlined in this paper.
Next steps	Following the chew session, PRHT will reformat the paper, including redactions and updates to reflect the chew session discussion, and then submit to the FSG to support a discussion on crypto at their next meeting on January 18th.

1. Executive Summary

The crypto sector in 2022 experienced an extended period of market turmoil with a number of high profile incidents, including the crypto crash of TerraLuna (decentralised stablecoin), and the failing of Celsius and BlockFi (Borrowing and Lending Platforms), 3AC (Hedge Fund), and FTX (Exchange). As such, it is timely to consider the current state of this sector and the risks therein.

Regarding the most recent FTX incident (currently under investigation as an alleged fraud), it appears that the European and Irish exposures to FTX were limited, as the majority of FTX customers were based outside of Europe. Notwithstanding this, FTX and other market failures highlighted how risks in the crypto sector could manifest. The new European Markets in Crypto Asset Regulation (MiCA) will bring many of the actors in the crypto ecosystem within regulation, many for the first time and in a manner convergent across the European Union (EU). This will help to address many of the current risks and importantly, ensure a consistent approach, across the EU, to regulation of this largely cross-border sector.

Regarding financial stability, studies from the Financial Stability Board (FSB), Basel Committee on Banking Supervision (BCBS), Organization for Economic Cooperation and Development (OECD) reaffirm that the interconnectedness of crypto markets and traditional financial markets remains limited and the recent turmoil in the crypto sector has not materially affected traditional financial markets due to the former's relatively small size.

In considering crypto, the Central Bank of Ireland's (the Bank's) position is nuanced. Given the breath of crypto, we adopt positions on the various elements (the products, the firms, the underlying technology), as opposed to one overall position.

In considering crypto products, the Bank differentiates between backed crypto and unbacked crypto. The Bank is positive towards the potential of backed crypto, including Electronic Money Tokens (EMTs) and Asset Reference Tokens (ARTs) under MiCA, where appropriate reserves and controls are in place (as will be required under the MiCA regulatory framework). Whereas, regarding unbacked crypto (including poorly or unreliably backed), our position is one of concern and caution from a consumer protection perspective. We are concerned about the potential for investor/consumer harm and warn about the potential dangers of investing in crypto. The manifestation of the risks to consumers was evident in the volatility in the crypto sector in 2022. As such, there is merit in continuing to warn/ discourage consumers from engaging with unbacked crypto. This period also highlighted the impact of “finfluencers” (often celebrities) on consumers’ engagement with crypto, raising a question as to the need for a cross-authorities’ response on crypto advertising via social media.

Differentiating between consumer and professional investors, the Bank adopts an approach where QIAIFs can make a material investment in crypto-assets indirectly, with limits for indirect investment in crypto-assets set at 20% of net asset value where the QIAIF is open-ended, and 50% of net asset value where the QIAIF has either limited liquidity or is closed-ended.

We operate in a jurisdiction where innovation is increasingly a feature of the financial system and the market generally. Therefore, firms providing crypto services, such as exchange, transfer, custody and issuance of crypto are present in the Irish market, as evidenced by the Bank’s pipeline for Virtual Asset Service Provider (VASP) require registration. The Bank’s position is that these firms should be regulated, putting in place appropriate guardrails for this sector. MiCA will be a first step in regulating crypto and in addressing the potential risks therein. In this regard, we will effectively implement MiCA as it is designed and in any appropriately professional manner. Within that context, we are open to authorise firms in this new regulated sector. However, we are alive to the risks of exposure to unbacked crypto via inter-linkages within a group structure, for example, where there is insufficient firewall between a regulated entity and the exposure to unbacked crypto of other entities within the group structure.

While still at a relatively early stage of development, the technology underpinning crypto, blockchain and distributed ledger technology (DLT), has potential to deliver significant benefits as it evolves and is deployed to different purposes. The full range of benefits will only become apparent with ongoing use and evolution and with the further increased digitalisation of society and economy. Our challenge is to facilitate this happening, while ensuring that undue loss and damage to users or to the financial system does not occur in the meantime.

Noting the continuing development of this sector and the underlying technology, the Bank supports the European Commission’s plan to continue to monitor crypto and to consider possible further regulation in this area. Other authorities, such as the European Supervisory Authorities (ESAs), European Central Bank (ECB), International Organisation of Securities Commissions (IOSCO), FSB, BCBS, OECD continue to monitor and develop positions on crypto, thus informing the future direction of regulation in this area. Notably, in December 2022, the Basel Committee on Banking Supervision (BCBS) adopted standards for the prudential treatment of banks’ exposures to crypto assets.

In summary, within proper regulatory guardrails (including consumer warnings) and in the right regulated environment (initially MiCA and the standards adopted by BCBS and other authorities), the broader developments within crypto and underpinning technologies could potentially contain future benefit to improve the efficiency and delivery of financial services.

2. Introduction

'Crypto' is a broad term encompassing many highly innovative, disruptive technologies and activities, including 'Decentralised Finance'. Crypto are a type of private sector digital asset that depends primarily on cryptography and distributed ledger technology or similar technology, and have been designed to function as a medium of exchange without being issued by a central bank. The broader crypto ecosystem comprises the different types of crypto and the networks with which they interact. This ecosystem is growing rapidly as it reaches parts of society and economy at a pace and scale not seen by any other tech innovation. This is despite crypto being unregulated and the issuance of consumer warnings.

This paper highlights the Bank's view on crypto, presents an overview of the recent turmoil in the crypto eco-system, the risks that crypto presents, in particular to financial stability, crypto developments in the Irish market and the future regulatory framework under MiCA.

3. The Central Bank of Ireland's Position on Crypto

In the context of our mandate to protect consumers, safeguard financial stability and promote the sound functioning of financial firms, technological innovation is an important focus of attention for the Bank. We recognise that technological innovation is a key feature of the environment in which we seek to deliver this mandate. We are at a moment of significant technological transformation. The range and nature of financial services, and the manner in which they are provided to consumers and users, is rapidly changing - with all of the benefits and challenges that can bring.

With regard to crypto, the Bank takes a nuanced view:

- Cryptocurrencies: While the term **"cryptocurrencies" is often used, the Bank considers the term an unhelpful and misleading descriptor**. A currency has three key functions: a medium of exchange for purchasing goods and services, a unit of account and a store of value. The "currency" label implies that the characteristics of money exist when in fact they do not. The value of Bitcoin, for example, experiences massive fluctuations making it unsuitable as a store of value. It is not a useful medium of exchange or a unit of account given the limited number of businesses and individuals willing to use it for transactions.
- Backed Crypto and Unbacked Crypto: In considering crypto products, the Bank differentiates between backed crypto and unbacked crypto. **The Bank is positive towards the potential of backed crypto, including Electronic Money Tokens and Asset Reference Tokens** under MiCA, where appropriate reserves and controls are in place (as will be required under the MiCA regulatory framework). However, **the Bank has concerns about the considerable negatives associated with crypto that is unbacked (or poorly or unreliably backed)**, is **widely and intensively marketed and promoted for consumer purchase, and is increasing in their linkages to the wider financial system**. Consumers face risks from high price volatility, security issues and fraud, and have little or no protection in the face of "pump and dump" strategies and aggressive marketing. It is for these reasons that the Bank has issued several warnings about crypto, highlighting the significant risks

they pose to consumers. Further, the Bank, with the Department of Finance, is supporting the Competition and Consumer Protection Commission (CCPC) in the development of its 2023 consumer information campaign on crypto[1]. Differentiating between consumers and professional investors, we have adopted an approach where **QIAIFs can make a material investment in crypto-assets indirectly[2]**.

- Crypto Asset Services: **The provision of services related to crypto is now a feature of the financial system. Therefore, providers of such services should fall to be regulated and their users protected.** These firms provide a range of services to retail and institutional clients. The Bank's intelligence from its engagement with prospective Virtual Assets Service Providers (VASPs) via the Innovation Hub and the VASP Registration process, indicates that these activities are primarily associated with the exchange, transfer and custody of crypto and the issuance of different types of crypto including stablecoins. While there is prevalence of small – medium sized firms, a distinct trend is the increasing dominance of large-scale global players. While currently only regulated for AML/CTF purposes, the providers of these activities will fall to be authorised and regulated under MiCA. We expect that many of the VASPs in Ireland will seek Crypto Asset Service Provider (CASP) authorisation under MiCA. See Appendix 7.1 for a table illustrating the CASP business model. Additionally, business models based upon the issuance of stablecoins, crypto assets and utility tokens are growing.
- Blockchain and DLT: While the Bank has concerns about some elements of crypto, we **recognise that the underlying DLT technology has potential to deliver significant benefits as it evolves and is deployed to different purposes over time.** Blockchain, DLT and cryptographic technology have the potential to bring significant benefits to the economy and to the users of financial services. However, there are some important challenges that must be overcome and when addressed, can unlock significant benefits for the users of financial services (See Appendix 7.2 for a list of potential benefits that could be realised from DLT).
- Central Bank Digital Currencies: An important development to stem from the rise of crypto is the decisions by central banks to investigate introducing a digital representation of their own currencies. **The Eurosystem is currently in the investigative phase for a potential digital euro**. A digital euro (as central bank money) would provide a preferable alternative to crypto.

4. Turmoil in the Crypto Sector through 2022

4.1 Overview

The crypto sector has always exhibited extreme volatility but 2022 was particularly notable in this regard. While the global crypto market cap grew by 3.5 times in 2021 to $2.6 trillion, 2022 has seen a significant downturn in the crypto market with the overall global market cap now standing at (December 2022) $840~ bn, down c. 70% from its 2021 peak. However, even with the most recent down trend, the overall crypto market cap is up from $200bn in January 2020, a four times increase, which shows the overall growth of the sector over the more mid-term. Appendix 7.3 presents an overview of several notable crypto related failings

[1] In Q1 2023, the CCPC will publish a series of consumer videos on their website, promoted via targeted social media activities.

[2] Limits for indirect investment in crypto-assets set at 20% of net asset value where the QIAIF is open-ended, and 50% of net asset value where the QIAIF has either limited liquidity or is closed-ended.

in 2022 worth highlighting as they illustrate the manifestation of key risks within the crypto sector.

4.2 Impact in Ireland and EU from FTX collapse

[redacted]

While the FTX exchange had a large number of entities worldwide[3], the majority of customers were based in non-EU countries with a very low number of EU citizens registered with FTX. According to crypto data aggregator CoinGecko, most users were likely in non-EU countries, with only Germany, Italy, the Netherlands and France featured in their 30-country list[4].

[redacted] suggests that MiCA is already having a deterring effect and that existing national regulations in some European countries, such as Germany, France, Switzerland prevented FTX establishing a foothold in major European and EU countries.[5]

4.3 Key learnings from the 2022 crypto market

The 2022 crypto related crash of TerraLuna, and the failing of Celsius, 3AC and FTX through 2022 have been informative in that they have highlighted how key risks in the sector manifested.

Firstly, it is important to acknowledge the wider environment, including economic environment that contributed to the crypto bull market. With low interest rates prevailing for some time, a huge imbalance formed between extremely high levels of capital seeking out returns from a small number of crypto products / services within the crypto eco-system, which promised and often delivered high returns. This coupled with the almost celebrity status and significant political and social influence of some crypto leaders gave additional promise to investments.

Additionally, **key risk themes manifested** including:

Lack of Consumer Protection

While the protection of consumers is a crucial mandate of regulatory authorities, there are significant gaps and risks in this area within the crypto sector, due to their extreme price volatility, their highly speculative and risky nature and the **absence of investor protections**.

Aggressive Advertising

Aggressive and misleading advertising is prominent and we have seen the growth of "finfluencers" utilising social media to promote various crypto. In the case of FTX, prominent figures like [redacted] were all ambassadors/spokespersons for the exchange[6]. Often it is not clear that such

[3] Within the EU, FTX had a licence from the Cyprus' Securities and Exchange Commission (CySEC), to provide EU citizens with investment services in crypto-backed derivatives, although FTX was not allowed to conduct cryptocurrency trading. CySEC suspended FTX's licence on 9 November 2022.

[4] https://www.coingecko.com/research/publications/countries-impacted-ftx-collapse

[5] https://www.politico.eu/article/crypto-european-union-ftx-lawmakers-claim/

[redacted]

influencers are paid to advertise, for example, [redacted]

The rise of finfluencers is challenging, they hold great sway over ordinary consumers, in particular, consumers / investors with low levels of knowledge on the sector utilising prominent social media avenues that most people interact with, but avenues that regulatory bodies with cautious and protective messages do not. **This raises a question as to the need for a cross-authorities' response on crypto advertising via social media.**

SECTORAL CONTAGION

A key risk that manifested this year was **contagion risk**. The crypto model includes investment by the sector into the sector. The Terra LUNA collapse pulled Celsius, Voyager, BlockFi and more into bankruptcy. FTX acquired all of these businesses and kept accumulating shortfall.

The OECD in their recent report – Lessons from a Crypto Winter [7] highlighted that if the financial stability frameworks applicable to traditional financial systems were applied to the crypto sector, the **crypto sector would be prone to systemic risks due to increasingly high concentration risks, leverage, and high interconnectedness** within the eco-system.

GOVERNANCE AND CONDUCT

In the case of FTX, customer funds and **client assets were allegedly used inappropriately**. According to Reuters, FTX transferred at least $4 billion to Alameda (its sister firm), including some customer deposits, to prop up the trading firm after a series of losses.[8] [9] As a result, key FTX management are currently under investigation for fraud.

TRANSPARENCY

For the backed crypto market, **quality of reserves** is key. [redacted]

4.4 Additional Important Risks that Grew During 2022

FINANCIAL STABILITY

Identifying and mitigating financial stability risks arising from the crypto sector has been a key focus for international regulatory bodies. The FSB in their February 2022 report[10] highlighted the fast evolution of crypto markets and how they could reach a point of threat to global financial stability due to their scale, structural vulnerabilities and increasing interconnectedness with the traditional financial system. This rapid evolution could result in financial stability risks rapidly escalating, underscoring the need for timely and pre-emptive evaluation of policy responses. The recent turmoil has demonstrated these growing risks.

bankman-fried/

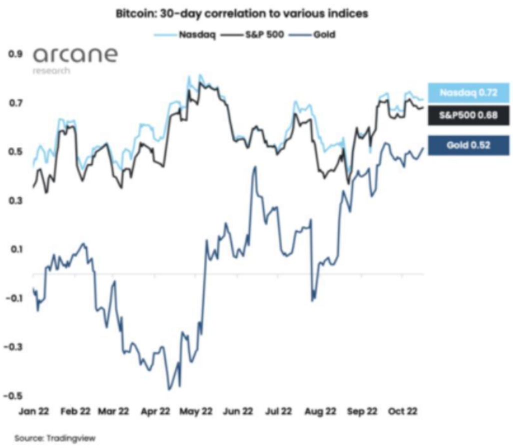
[7] https://www.oecd.org/publications/lessons-from-the-crypto-winter-199edf4f-en.htm

[8] https://www.reuters.com/technology/how-secret-software-change-allowed-ftx-use-client-money-2022-12-13/

[9] https://www.reuters.com/article/fintech-crypto-ftx-binance-collapse-idCAKBN2S00BD

[10] https://www.fsb.org/wp-content/uploads/P160222.pdf

In May 2022, the OECD published a study on the interconnectedness between the crypto eco-system and traditional finance.[11] The report highlighted a growing supply of regulated products referencing digital assets mainly driven by the interest from investors. It also highlighted an increased interest from, and participation of, institutional investors in the digital assets markets. This can lead to increased interconnectedness between traditional finance and the crypto eco-system risking spill-overs into the traditional financial system and the real economy.



In November, the OECD published a report looking at lessons from the Crypto Winter[12] and highlighted how the correlation between crypto and traditional markets is increasing. Their analysis demonstrated extremely strong correlation between the returns of Bitcoin and Ether. The short-term correlation of Bitcoin returns with that of equity markets seemed to increase during general market downturn periods, for example during Q1 2020, the first COVID-19 wave of infections, and again at the end of 2021 during a period of equity turbulence. In addition, **the correlation of Bitcoin with equity markets has been increasing over time.** Such correlation points to an increased interconnectivity between the two eco-systems.

From a Banking perspective a recently released, updated BCBS study on the banking sectors' exposure to crypto[13] estimates bank exposure to crypto at the end of 2021 at 9.4 billion euros ($9.32 billion), or 0.14% of the total exposure of banks reporting crypto holdings. That figure drops to 0.01% as the crypto exposure of all banks is monitored. Bitcoin and Ether made up almost 90% of that exposure.

However, while the connection is increasing, studies from the OECD, FSB and ESMA, and the above mentioned, BCBS study, reaffirm that the **interconnectedness of crypto markets and traditional financial markets remains limited** and that importantly, the recent turmoil in the crypto sector has not materially affected traditional financial markets due to the former's relatively small size. This comes with a caveat in that, **should these factors change, future turmoil in a larger crypto sector could have implications for financial stability**.

[redacted]

[11] https://www.oecd-ilibrary.org/docserver/5d9dddbe-en.pdf?expires=1671721261&id=id&accname=guest&checksum=EA5FD633C42A4EBFB3829332025BC711
[12] https://www.oecd.org/publications/lessons-from-the-crypto-winter-199edf4f-en.htm
[13] https://www.bis.org/bcbs/publ/d541_crypto.pdf

[redacted]

Monetary Policy

Currently, the presence of crypto is not a major concern for monetary policy implementation. Importantly, crypto do not currently fulfil the functions of money, and the impact on the real economy is negligible. It is very difficult to find reliable data to assess the use of crypto in the real economy. Crypto are mainly used for other use cases outside of the real economy for the purposes of speculation, in DeFi, and to buy NFTs. A recent ECB survey[14] confirmed the primary use for crypto holders was investment purposes with low or negligible use as a payment mechanism in the real economy (see chart to the right). However, backed crypto (stablecoins) are the most likely to be used in the real economy, particularly for cross border transactions.

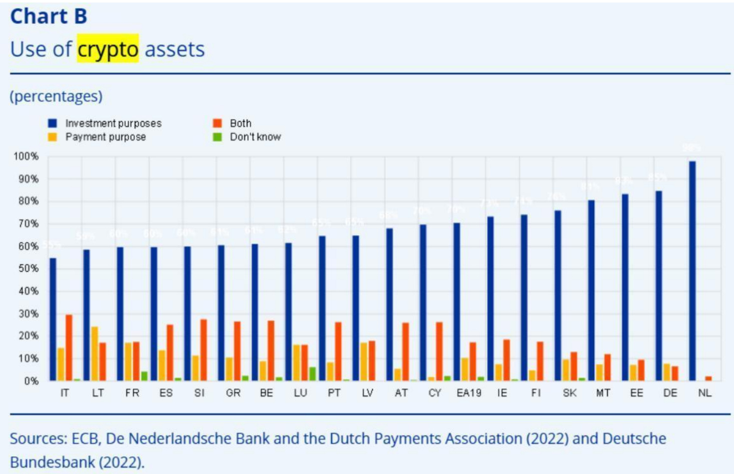


Chart B
Use of crypto assets

Sources: ECB, De Nederlandsche Bank and the Dutch Payments Association (2022) and Deutsche Bundesbank (2022).

Looking forward, growth in crypto use could have implications for monetary policy where they might offer credible substitution to cash or deposits.[15] Nonetheless, the high levels of price volatility observed for most crypto makes such a scenario unlikely. To offer a viable alternative, crypto would need wide acceptance by merchants as a means of payment. Without central bank backing and price volatility, merchants are unlikely to interact with such forms of payment, making it very difficult for crypto to fulfil monetary asset characteristics in the near future.

While crypto are not alternates to cash or deposits currently, their implications for monetary policy could be thought of in a similar manner to other asset markets (e.g. equity markets). Despite this, the relatively small size of the crypto market means it is of limited concern for monetary policy transmission. However, stablecoins could offer the very substantial reduction in price volatility that a wider substitution of crypto for cash or deposits would likely require, especially if sponsored by large companies with a sizeable potential user base.[16] Stablecoins could become less volatile if they were collateralised, e.g. by central bank reserves. Such collateralisation could result in additional demand for central bank reserves,

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[14] https://www.ecb.europa.eu/stats/ecb_surveys/space/html/ecb.spacereport202212~783ffdf46e.en.html
[15] ECB Crypto-Assets Task Force (2019)
[16] Assenmacher (2020)

which could have clear implications for the central bank balance sheet size and monetary policy transmission.

5. The Irish crypto ecosystem

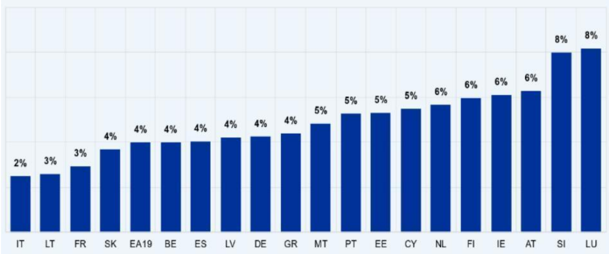
5.1 Usage by Irish consumers

A 2021 consumer survey from the CCPC on broader investment trends found that 10-12% of adults in Ireland own crypto. The CCPC survey found that this increases to 25% amongst those aged 25-34 years, the age group for whom crypto ownership is most popular[17].

More recently, the ECB study on consumers' payment attitudes found that approximately 6% of people owned crypto in Ireland. [18]

Chart A
Ownership of crypto assets

(percentages)

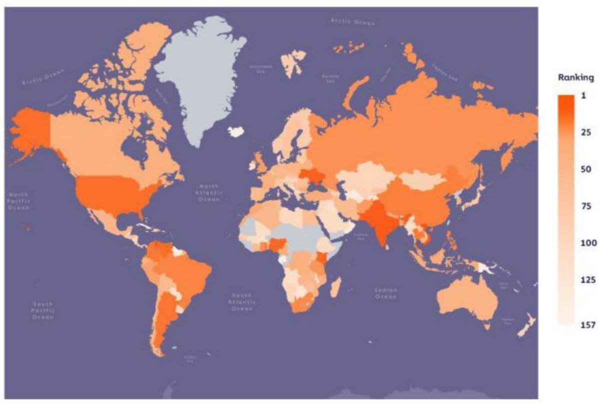


Sources: ECB, De Nederlandsche Bank and the Dutch Payments Association (2022) and Deutsche Bundesbank (2022).
Note: The question expected a straight yes or no to ownership of crypto assets and did not investigate the size of the holding in proportion to other assets (e.g. equities or fixed income) respondents may hold.

A Chainalysis report titled "Crypto Usage in Ireland" dated January 2022, ranked Ireland as 118th overall in the world for crypto currency adoption . As can be seen from the report, Ireland has a low adoption rate of crypto per capita relative to the world.

Ireland ranked 62nd on Chainalysis' DeFi adoption global index, which looked at on-chain value received, on-chain deposits and retail value transferred. According to the report, Ireland received $15 billion worth of on chain transaction volume to DeFi protocols. This data suggests that Irish people are using DeFi protocols. The Bank has prioritised research on DeFi and membership of IOSCO's Fintech Task Force and DeFi working group.

Global Cryptocurrency Adoption Index | July '20 - June'21



5.2 Insights from the Bank

The Bank has several avenues for insight into the Irish crypto eco-system including, our Innovation Hub, authorisation pipeline and VASP regime. Intelligence suggests that Ireland is becoming an EU hub for crypto services.

Innovation Hub

Over 2022, 34% of the Innovation Hub enquiries were received from the blockchain, DLT, crypto or digital asset sector. In particular, there has been an increase in enquiries from large, established crypto asset service providers. Many of these engagements focused on the VASP registration regime, but some related to other authorisations, including e-money and MiFID.

[redacted]

[17] CCPC, CCPC Investments Research; September 2021.
[18] https://www.ecb.europa.eu/stats/ecb_surveys/space/html/ecb.spacereport202212~783ffdf46e.en.html

[redacted]

VASP Regime [redact second paragraph from FSG paper]
All VASPs established in Ireland must register with the Bank for AML/CFT purposes only. Under this regime, we will assess a VASP's AML/CFT policies and procedures for effectiveness in combatting the MI and TF risks associated with its business model, and their management and beneficial owners to ensure they are fit and proper.[19] Our AML/CFT supervisory approach to VASPs replicates our existing approach to the AML/CFT supervision of credit and financial institutions under the CJA 2010 to 2021. There are no passporting provisions, so a VASP may be required to seek separate registration (to the Irish VASP registration) in an EU member state (MS), depending on legislation in the MS where the VASP wants to operate.

There are currently [redacted] in the Bank's VASP registration application process including [redacted]

6. Moving Forward: A Crypto Regulatory Framework - MiCA

Currently, crypto activities are mostly unregulated, except for AML purposes under the VASP Framework. This gap in regulation will be addressed via implementation of MiCA[20], which will put in place prudential and consumer requirements for issuers and CASPs. Appendix 7.5 sets out the key MiCA obligations and business models of the new regulated entities.

The intention of MiCA is to address the risks to consumer protection and market integrity from crypto along with specific risks to financial stability and monetary policy while also bringing regulatory clarity to the sector. It will provide a high quality, consistent framework across the EU for the ongoing development of this innovation, and bring much needed legal clarity to the market. The Bank welcomes this new framework and will implement it as designed.

MiCA will be a very important step forward in the regulation of crypto activities in Europe while also leading the way on the regulation of the crypto sector globally. As the regulated activities continue to evolve and change rapidly, post-MiCA, ongoing monitoring of the space will be required, with the potential for further policy development to capture new and innovative aspects of the crypto market, including NFTs.

[19] In July 2022, the Bank set out some key application issues in Anti-Money Laundering Bulletin.
[20] MiCA has been agreed by Council and will be voted on by the Parliament in February 2023 coming into effect in Q2 2023. The regulations will be applicable for issuers of Asset Reference Tokens and Electronic Money Tokens 12 months after coming into effect and for CASPs 18 months after coming into effect. A transition period is provided for CASPs operating within national law prior to the date of application (estimate Q4 2024), to continue to operate for up to 18 months or until authorisation has been granted, whichever is sooner.

7. Appendices:

Appendix 7.1 - CASP Business Models

Type	Risks
Order Book Exchanges These types of exchanges provide exchange order books that bring customers together to spot buy and sell crypto. [redacted] Many of these exchanges also provide on and off ramps to use fiat currencies to buy crypto through regulated e-money institutions.	These types of exchanges are subject to very similar risks to a regulated trading venue would be subject to such as: • Governance Risk • Investor/Customer Protection Risks • Operational Risks • Market & Liquidity Risks • AML/CFT Risks • Market Abuse Risks • Market Manipulation Risks
Non Order Book Exchanges [redacted]	• Governance Risk • Investor/Customer Protection Risks • Operational Risks • Market & Liquidity Risks • AML/CFT Risks.
Crypto Asset Custodians Simply, a crypto asset custodian provides a service to custody crypto assets on behalf of a 3rd party. There are two predominant types of custodian. 1) Most exchanges provide custody services for their customers to allow their customers to deposit crypto for trading purposes. These providers typically provider services to retail customers. 2) The second type of crypto asset custodian will only provide crypto custody services and this will typically be to institutional customers.	• Governance Risks • Investor/customer protection risks • Operational and cyber security risk • Safeguarding risks • AML/CFT risk.
Other CASP Activities Providing advice on crypto-assets Providing portfolio management on crypto-assets	• Governance Risks • Investor/customer protection risks • Operational and cyber security risk • Safeguarding risks • AML/CFT risk.

Appendix 7.2 - Potential benefits from developing DLT technology

Wide range of potential use cases. For example, it can streamline capital-raising processes, for them to be cheaper, less burdensome and more inclusive.[21] It is possible that when used as a means of payment, DLT, properly configured, governed and regulated, could present opportunities in terms of cheaper, faster and more efficient payments, in particular on a cross-border basis, by limiting the number of intermediaries.[1] Other use cases are still experimental and require imagination: machine to machine payments, streaming money, programmable money, and digital identity.

The cost efficiencies brought by DLT and blockchain: As described by [redacted] the invention of blockchain has "*enhanced DLT into a truly decentralised format that eliminates the need for a trusted intermediary to process and validate transactions between two parties.*"[22] Blockchain's transparency and immutability foster trust and by cutting out intermediaries could lead to faster, more direct and cost efficient processes and systems in financial services.

Increased access and participation brought by tokenisation: Tokens such as NFTs allow proof of ownership of unique digital things without the need of a central authority. As more real world assets are brought onto the blockchain and tokenised, this could allow for fractionalised ownership and deeper liquidity, with potential for increased access and participation for consumers in finance.[23]

Enhanced oversight and fairness from code based finance: The features of DLT allow authorities greater auditing and oversight capabilities as crypto networks are built in the open, with established transparent protocols built to common standards. The fact that crypto is based on code allows for transparency and rules that apply the same to everyone - a regulator can know how a transaction will play out in advance of its execution and for consumers, can reduce human error and bias.

However, **the full range of benefits of blockchain and DLT will only become apparent with ongoing use and evolution** and with the further increased digitalisation of our society and economy. The challenge for regulators is to facilitate this happening, while making sure that undue loss and damage either to users of the products or to the financial system do not occur in the meantime.

[21] EU Commission, MiCA Proposal, p. 15.
[22] Eswar S. Prasad, The Future of Money, p. 105.
[23] The market opportunity for NFTs is predicted to be very large, with the total addressable market estimated to be over $1 trillion, led in the first instance by categories such as art and collectibles. See: Yahoo.

Appendix 7.3: 2022: The Crypto Winter: A look at the most notable crypto crises

TerraUSD (UST) is an algorithmic stablecoin, whose algorithm was supposed to maintain a $1 peg supported through a dual token system between the stablecoin TerraUST and its LUNA token. Simply put, if the UST value went above $1, the equivalent value of LUNA would be burned, which minted more UST, making it less valuable. Whereas, if the UST price dropped below $1, they were swapped for LUNA, which in turn made UST more valuable. At its peak, the LUNA token hit a high of $119.18 on 5 April before retreating to $82.94 by May 6th This came against the backdrop of a bearish wider crypto market, with bitcoin hitting a 10-month low on 10 May 2022. The same day, LUNA saw its value plummet below $40. The cryptocurrency then plunged to its all-time low of $0.00001675 on 13 May. LUNA's depeg dismissed the argument that algo stablecoins were a secure and less volatile crypto investment.

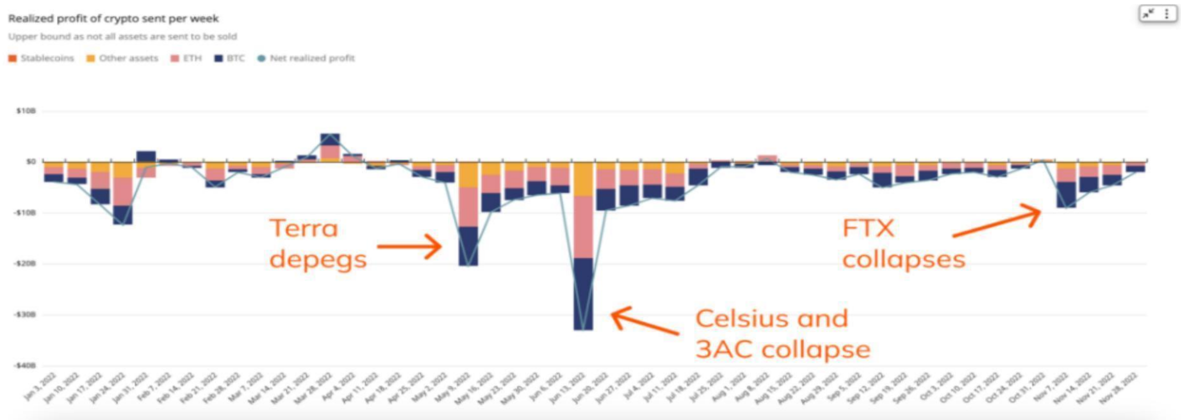
Celsius is a retail friendly crypto lending platform and one of the most popular platforms in the market who promised high returns and safe investments. Their model is simple, the take deposits, invest it in the crypto market, and participate in decentralized finance (DeFi) to earn yields for the user, while taking a small margin. 3 Arrows Capital (3AC) was a Singapore-based cryptocurrency hedge fund which, at its height managed about $10bn in assets. 3AC had a large list of counterparties that had invested with them including Celsius.

As crypto began to slump in early 2022 led by the slide in bitcoin and ethereum, investors such as Celsius or investors with concentrated bets on firms such as 3AC began to suffer losses. In the case of 3AC, they were unable to meet the margin calls. In the case of Celsius, investors sought safer havens and users pulled funds out of Celsius. Celcius were leveraged heavily with their investments focused on other crypto, as such, when crypto prices continued to fall, so did their ability to meet their own liabilities. Furthermore, interconnectivity between Celsuis, 3AC and Terra Luna proved disastrous. Celsius were active investors and users of the Terra protocol investing funds with 3AC for 20% yield. 3AC's 10.9 million locked LUNA that was worth $559.6m is now worth less than $1,000.

The latest crisis involved [redacted]crypto empire, officially in two parts. Firstly there was FTX [redacted] and secondly Alameda Research [redacted]). While two separate businesses, it emerged that the balance sheet of Alameda was primarily made up of FTX's own token FTT and not independent assets such as other crypto or fiat. This news led to Binance choosing to liquidate its FTT tokens (amounting to 17% of all FTT in circulation) which spurred on other traders to do the same. FTX rushed in to a liquidity crunch. As the FTX crisis unfolded, it transpired that following the Terra Luna crisis, FTX had (through Alameda Research), bought up the largest failed players such as Celcius, Voyager Digital and BlockFi. They did this as FTX was already deeply involved with these firms on the lending side and their collapse would have harmed FTX even more. To facilitate this buyout, Alameda Research used its own token FTT as collateral and used customer funds to cover the shortfall.

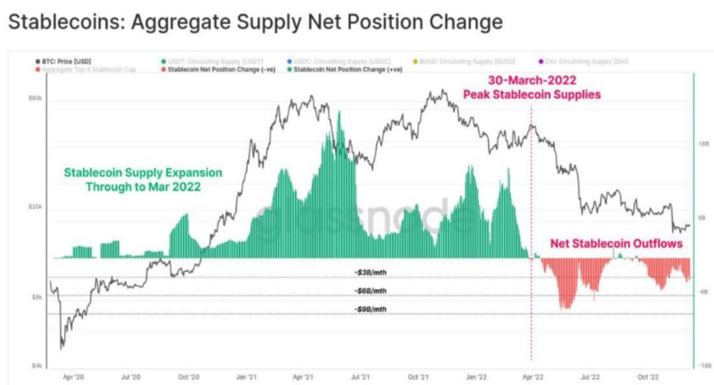
While the FTX crisis dominated the mainstream headlines, [redacted], [redacted] it was not the most impactful crisis – the Celsius and 3AC collapse took that prize in terms of losses to personal wallets. The chart below from Chainalysis illustrates the gains and losses to all personal wallets through

2022 noting these main market-moving events and highlights the types of asset driving these gains or losses.

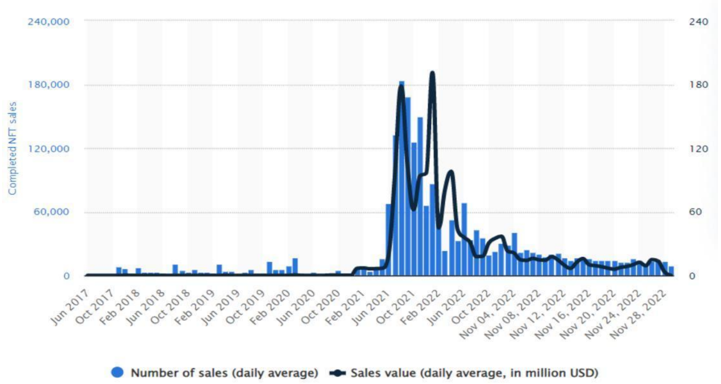


24

Stablecoins seek to mitigate volatility by pegging to a stable asset such as fiat, also saw their growth stunted. While the total value of all stablecoins increased 450%, from $28bn in January 2021 to $154bn in August 2022[25], the latter half of 2022 saw a reduction in volume. While Terra Luna proved that algo stablecoins were not immune to crashes, the market also continued to challenge Tether over the quality of its reserves. [redacted]



While 2021 saw huge growth in NFT's[27] with the market then estimated to have surpassed $40 Billion[28], 2022 is more muted. Given the diverse nature of NFTs and their growth over the last year, it is important that regulators and policy makers monitor the space and consider the characteristics and



[24] https://blog.chainalysis.com/reports/ftx-investor-impact-less-than-previous-crises/
[25] https://coinshares.com/research/stablecoins-cryptos-killer-app
[redacted]
[27] NFTs are digital tokens that are unique and are not interchangeable like other crypto assets. NFTs use a different token standard than fungible tokens, and can have a diverse range of use cases from digital collectibles, to the tokenisation of real world assets, to financial products.
[28] https://www.bloomberg.com/news/articles/2022-01-06/nft-market-surpassed-40-billion-in-2021-new-estimate-shows#xj4y7vzkg

function of the NFT and not the terminology used by the issuer.[29]

Appendix 7.4 - The VASP Pipeline – to be redacted from the paper submitted to FSG

There are currently [redacted] in the Bank's VASP registration application process or have been registered. The registered firms are Gemini Digital Assets Limited, Zodia Custody Limited and two Coinbase entities. Of the [redacted]

Under the Criminal Justice (Money Laundering and Terrorist Financing) Act 2010 (as amended), any VASP that was providing VASP services[30] prior to the requirement to register with the Bank coming into force (23 April 2021), can continue to offer VASP services pending the outcome of their VASP registration application (providing they applied to the Bank for registration before 23 July 2021).[redacted]

[redacted]

[29] https://www.fatf-gafi.org/media/fatf/documents/recommendations/Updated-Guidance-VA-VASP.pdf

[30] 1. The exchange between a virtual asset and fiat currencies; 2. The exchange of a virtual asset and another virtual asset; 3. The transfer of a virtual asset; 4. The custody of a virtual asset and participation in; 5. The provision of, financial services related to an issuer's offer or sale of a virtual asset or both, on or behalf of another person.

[redacted]

[redacted]

[redacted]

Appendix 7.5 - Key Obligations Placed on Crypto Firms by MiCA

Type	Use Case	Risks
Issuers of EMTs **An EMT issuer of an EMT is an** entity that seeks authorisation to issue "a type of crypto-asset that purports to maintain a stable value by referencing to the value of one official currency.	• Payments, in particular cross border payments, • as a trading assets to trade in and out of fluctuating crypto assets, • in Decentralised Finance (DeFi) for collateral, as a trading pair	• Governance Risks • Operational Risks • Consumer Protection • stabilisation Risk • Reserve Risk, • Market and Liquidity Risk • AML/CFT risk
Issuers of ARTs **An issuer of an ART is an entity** that seeks to offer "*a type of crypto-asset that is not an electronic money token and that purports to maintain a stable value by referencing to any other value or right or a combination thereof, including one or more official currencies*". These can be viewed as tokenised assets.	• enables the tokenisation of any asset type and the uses cases will grow once the regulations are clear, • some assets, in particular commodities are not a good medium of exchange and ARTs may address this, • enables the tokenisation of a basket of assets	• Governance Risks • Operational Risks • Consumer Protection • stabilisation Risk • Reserve Risk, • Market and Liquidity Risk • AML/CFT risk
Issuers of Crypto Assets *including Utility Tokens* **Under MiCA an "***issuer of crypto-assets means the natural or legal person or other undertaking who issues the crypto-assets*". An issuer of a utility token is an entity that is seeking to issue a "*Crypto-asset intended to provide digital access to a good or a service supplied by the issuer*" under MiCA.	• Means of payment within an issuers platform, • Can be the staking token of a blockchain and used to secure the blockchain network, • Can be used to incentivise consumer behaviour similar to points collects in stores, • Consumers could receive discounts and other benefits for using the utility token, • utility tokens have value and can be sold for fiat unlike for example Tesco club points,	• Governance Risks • Operational Risks • Consumer Protection • AML/CFT risk

Some of the key aspects of MiCA are the following:

Obligations on CASPs

MiCA will impose a mix of conduct and prudential requirements on CASPs. This will include, for example, trading platforms; exchanges; custody providers; execution firms; and advice providers. The issuance of Bitcoin and other unbacked crypto will not, because of their wholly intangible nature, be within MiCA's scope. However, CASPs - which provide the interface between the consumer and the product - will be regulated.

Some key obligations include:

- CASPs will be required to be authorised in an EU member state in order to operate within the EU. As part of that authorisation they will have to set out the crypto services they want to offer to EU consumers.
- Important consumer protection obligations, governance obligations, minimum capital requirements, and transparency requirements along with prohibitions on

insider dealing, market manipulation and the unlawful disclosure of inside information.

- Requirements for CASPs to issue consumer warnings where the consumer has not satisfied the conditions of the required appropriateness test along with the introduction of minimum standards for advertising and marketing.
- Maintaining segregated accounting practices to properly keep customer funds separate and suitably protected from incidents such as insolvency along with requirements to maintain a suitable insurance that will cover its exposures in case of a partial or total technical failure.

Obligations on issuers of EMT's and ART's

MiCA will impose a mix of conduct and prudential requirements on issuers of Electronic Money Tokens (EMTs) and Asset-referenced Tokens (ARTs) including.

- Consumer protection obligations to act fairly and in the best interests of EMT and ART holders.
- EMT issuers will offer redemption at par (1:1) while both EMT and ART issuers will have clearly disclosed redemption obligations.
- EMT and ART issuers will be required to provide clear and up to date information including updated whitepaper information, the disclosure of risk events, any conflicts of interest, and ensure there are clear procedures for complaints handling for consumers while ART issuers will additionally need to provide transparency on ARTs in circulation.
- Issuers of EMTs and ARTs will be subject to prudential requirements including capital requirements and reserves obligations including detailed policies and safe custody of same.
- For both EMT and ART issuers, there will be restrictions for investment of reserves and the expectation of robust governance, including business continuity, control and risk assessment, and appropriate 3rd party contractual agreements. For issuers of ART's there will be a ban on interest to ART holders.

Financial Stability Group	Discussion on Crypto – Paper from the Central Bank of Ireland
Date of meeting	January 18th 2023
Issue	The crypto sector in 2022 experienced an extended period of market turmoil with a number of high profile incidents. As such, it is timely to consider the current state of this sector and the risks therein.
Authors/Presenters	[redacted]

1. Executive Summary

The crypto sector in 2022 experienced an extended period of market turmoil with a number of high profile incidents, including the crypto crash of TerraLuna (decentralised stablecoin), and the failing of Celsius and BlockFi (Borrowing and Lending Platforms), 3AC (Hedge Fund), and FTX (Exchange). As such, it is timely to consider the current state and risks in the sector.

Regarding the FTX incident (currently under investigation as an alleged fraud), it appears that the European and Irish exposures to FTX were limited, as the majority of FTX customers were based outside of Europe. Notwithstanding this, FTX and other market failures highlighted how risks in the crypto sector could manifest. The new European Markets in Crypto Asset Regulation (MiCA) will bring some of the actors in the crypto ecosystem within regulation, some for the first time and in a manner convergent across the European Union (EU). This will help to address many of the current risks and importantly, ensure a consistent approach, across the EU, to regulation of this largely cross-border sector. It is important to note under MiCA, that customers will still be able to reverse solicit services from "unregulated" entities outside of the EU.

Regarding financial stability, studies from the Financial Stability Board (FSB)[1], Basel Committee on Banking Supervision (BCBS)[2], Organization for Economic Cooperation and Development (OECD)[3] reaffirm that the interconnectedness of crypto markets and traditional financial markets remains limited and the recent turmoil in the crypto sector has not materially affected traditional financial markets due to the former's relatively small size.

In considering crypto, the Central Bank of Ireland (the Bank) takes a differentiated position. Given the breath of crypto, the Bank adopts positions on the various elements (the products, the firms, the underlying technology), as opposed to one overall position.

In considering crypto products, the Bank differentiates between backed crypto and unbacked crypto. The Bank is positive towards the potential of backed crypto, including Electronic Money Tokens (EMTs) and Asset Reference Tokens (ARTs) under MiCA, where appropriate reserves and controls are in place. Whereas, regarding unbacked crypto (including poorly or unreliably backed), our position is one of concern and caution from a consumer protection

[1] https://www.fsb.org/wp-content/uploads/P160222.pdf
[2] https://www.bis.org/bcbs/publ/d541_crypto.pdf
[3] https://www.oecd.org/publications/lessons-from-the-crypto-winter-199edf4f-en.htm

perspective. In January 2023, ECB Executive Board member [redacted] highlighted that unbacked crypto are a speculative asset and do not present any socially or economically useful function and as a form of investment lack any intrinsic value (ECB, Jan 2023). From the Bank's perspective, we are concerned about the potential for investor/consumer harm and warn about the potential dangers of investing/ speculating in crypto. The manifestation of consumer risks was evident in the volatility in the crypto sector in 2022. As such, there is merit in continuing to warn/ discourage consumers from investing in such unbacked crypto. This period also highlighted the impact of "finfluencers" (often celebrities) on consumers' engagement with crypto, raising a question as to the need for a cross-authorities' response on advertising crypto via social media.

We operate in a jurisdiction where innovation is increasingly a feature of the financial system and the market generally. Therefore, firms providing crypto services, such as exchange, transfer, custody and issuance of crypto are present in the Irish market. The Bank's position is that these firms should be regulated, putting in place appropriate guardrails for this sector. MiCA will be a first step in regulating crypto and in addressing the potential risks therein. In this regard, the Bank will effectively implement MiCA as it is designed. Within that context, we are open to authorise firms in this new to be regulated sector, while alive to the risks of exposure to unbacked crypto via inter-linkages within a group structure.

While still at a relatively early stage of development, the technology underpinning crypto, blockchain and distributed ledger technology (DLT), has potential to deliver benefits as it evolves and is deployed to different purposes. The full range of benefits will only become apparent with ongoing use and evolution and with the further increased digitalisation of society and economy. The challenge is to not create undue barriers, while managing the risks appropriately and making sure that undue loss and damage either to users of the products or to the financial system do not occur in the meantime.

Noting the continuing development of this sector and the underlying technology, the Bank supports the European Commission's plan to continue to monitor crypto and to consider possible further regulation in this area. Other authorities, such as the European Supervisory Authorities (ESAs), European Central Bank (ECB), International Organisation of Securities Commissions (IOSCO), FSB, BCBS, OECD continue to monitor and develop positions on crypto, thus informing the future direction of regulation in this area. Notably, in December 2022, the BCBS adopted standards for the prudential treatment of banks' exposures to crypto assets.

In summary, within proper regulatory guardrails (including consumer warnings), in the right regulated environment (initially MiCA and the standards adopted by BCBS and other authorities) and with risks appropriately managed, the broader developments within crypto and underpinning technologies could potentially contain future benefit to improve the efficiency and delivery of financial services.

2. Introduction

'Crypto' is a broad term and one application of a blockchain or DLT platform. Crypto are a type of private sector digital asset that depends primarily on cryptography and distributed ledger technology or similar technology, and have been designed to function as a medium of exchange without being issued by a central bank. The broader crypto ecosystem comprises the different types of crypto and the networks with which they interact. This ecosystem is growing rapidly as it reaches parts of society and economy at a pace and scale not seen by any other tech innovation. This is despite crypto being unregulated and the issuance of consumer warnings.

This paper highlights the Bank's view on crypto, presents an overview of the recent turmoil in the crypto eco-system, the risks that crypto presents, in particular to financial stability, crypto developments in the Irish market and the future regulatory framework under MiCA.

3. The Central Bank of Ireland's Position on Crypto

In the context of our mandate to protect consumers, safeguard financial stability and promote the sound functioning of financial firms, technological innovation is an important focus for the Bank. We recognise that technological innovation is a key feature of the environment in which we deliver our mandate. We are at a moment of significant technological transformation. The range and nature of financial services, and the manner in which they are provided to consumers and users, is rapidly changing - with all of the benefits and challenges that can bring.

With regard to crypto, the Bank takes a differentiated approach:

- Cryptocurrencies: While the term **"cryptocurrencies" is often used, the Bank considers the term an unhelpful and misleading descriptor**. A currency has three key functions: a medium of exchange for purchasing goods and services, a unit of account and a store of value. The "currency" label implies that the characteristics of money exist when in fact they do not[4]. The value of Bitcoin, for example, experiences massive fluctuations making it unsuitable as a store of value. It is not a useful medium of exchange or a unit of account given the limited number of businesses and individuals willing to use it for transactions.
- Backed Crypto and Unbacked Crypto: In considering crypto products, the Bank differentiates between backed crypto and unbacked crypto. **The Bank is largely positive towards the potential of backed crypto, including Electronic Money Tokens and Asset Reference Tokens** under MiCA, where appropriate reserves and controls are in place. However, **the Bank has concerns about the considerable negatives associated with crypto that is unbacked (including poorly or unreliably backed)**, which is **widely and intensively marketed and promoted for consumer purchase, and is increasing in their linkages to the wider financial system**. Consumers face risks from high price volatility, security issues and fraud, and have little or no protection in the face of "pump and dump" strategies and aggressive marketing. Therefore, since 2017 and most recently in 2022, the Bank has issued several warnings about crypto, highlighting the significant risks to consumers. [5][6] The Bank differentiates between consumers and professional investors. The Bank is unlikely to approve a RAIF proposing exposure (direct or indirect) to crypto assets. In the case of a QIAIF seeking to gain exposure to crypto-assets, the relevant QIAIF would need to make a submission to the Central Bank

[4] Real world use cases, such as in Ukraine or Venezuela, where citizens use crypto to transfer value or make a payment when traditional frameworks have failed, are within unique and exceptional circumstances.

[5] https://www.centralbank.ie/news-media/press-releases/central-bank-warning-on-investing-in-crypto-assets-22-march-2022

[6] Further, the Bank, with the Department of Finance, is supporting the Competition and Consumer Protection Commission in the development of its 2023 consumer information campaign on crypto.

outlining how the risks associated with such exposures could be managed effectively by the AIFM.[7]

- Crypto Asset Services: **The provision of services related to crypto is now a feature of the financial system. Therefore, providers of such services should be regulated and their users protected.** These firms provide a range of services to retail and institutional clients, primarily associated with the exchange, transfer and custody of crypto and the issuance of different types of crypto including stablecoins. While there is prevalence of small – medium sized firms, there is increasing dominance of large-scale global players. Currently only regulated for AML/CTF purposes, the providers of these activities will be authorised and regulated under MiCA[8], with potential for them to seek Crypto Asset Service Provider (CASP) authorisation in Ireland under MiCA. See Appendix 7.1 for a table illustrating the CASP business model.
- Blockchain and DLT: While the Bank has concerns about some elements of crypto, we **recognise that the underlying DLT technology has potential to deliver benefits as it evolves and is deployed to different purposes over time.** Blockchain, DLT and cryptographic technology have the potential to bring benefits to the economy and to the users of financial services, where challenges are overcome. (See Appendix 7.2 for a list of potential benefits and risks from DLT).
- **Central Bank Digital Currencies:** An important development to stem from the rise of crypto is the decisions by central banks to investigate introducing a digital representation of their own currencies, including the **Eurosystem**. A digital euro (as central bank money) would provide a preferable alternative to crypto.

4. Turmoil in the Crypto Sector through 2022

4.1 Overview

The crypto sector has always exhibited extreme volatility but 2022 was particularly notable in this regard. While the global crypto market cap grew by 3.5 times in 2021 to $2.6 trillion, 2022 has seen a significant downturn in the crypto market with the overall global market cap now standing at (December 2022) $840~ bn, down c. 70% from its 2021 peak. However, even with the most recent down trend, the overall crypto market cap is up from $200bn in January 2020, a four times increase, which shows the overall growth of the sector over the more mid-term. Appendix 7.3 presents an overview of several notable crypto related failings in 2022 worth highlighting as they illustrate the manifestation of key risks within the crypto sector.

4.2 Impact in Ireland and EU from FTX collapse

Regarding exposure to the recent collapse of FTX, [redacted]. While the FTX exchange had a large number of entities worldwide[9], the majority of customers were based in non-EU countries with a very low

[7] See ID 1145 for Bank's position on RAIF's and QAIF's direct and indirect exposure to crypto https://www.centralbank.ie/docs/default-source/regulation/industry-market-sectors/funds/aifs/guidance/qa/aifmd-qa-edition-46.pdf?sfvrsn=ac4a981d_1

[8] The Bank will conduct an impact assessment of the final legal text.

[9] Within the EU, FTX had a licence from the Cyprus' Securities and Exchange Commission (CySEC), to provide EU citizens

number of EU citizens registered with FTX. According to crypto data aggregator CoinGecko, most users were likely in non-EU countries, with only Germany, Italy, the Netherlands and France featured in their 30-country list[10].

4.3 Key learnings from the 2022 crypto market

The 2022 crypto related crash of TerraLuna, and the failing of Celsius, 3AC and FTX through 2022 have been informative in that they have highlighted how key risks in the sector manifested.

Firstly, it is important to acknowledge the wider environment, including economic environment that contributed to the crypto bull market. With low interest rates prevailing for some time, a huge imbalance formed between extremely high levels of capital seeking out returns from a small number of crypto products / services within the crypto eco-system, which promised and often delivered high returns. This coupled with the almost celebrity status and significant political and social influence of some crypto leaders gave additional promise to investments.

Additionally, **key risk themes manifested** including:

Lack of Consumer Protection

While the protection of consumers is a crucial mandate of regulatory authorities, there are significant gaps and risks in this area within the crypto sector, due to their extreme price volatility, their highly speculative and risky nature and the **absence of investor protections**.

Aggressive Advertising

Aggressive and misleading advertising is prominent and we have seen the growth of "finfluencers" utilising social media to promote various crypto. In the case of FTX, prominent figures like [redacted] were all ambassadors/spokespersons for the exchange[11]. Often it is not clear that such influencers are paid to advertise.

The rise of finfluencers is challenging, they hold great sway over ordinary consumers, in particular, consumers / investors with low levels of knowledge on the sector utilising prominent social media avenues. **This raises a question as to the need for a cross-authorities' response on crypto advertising via social media.**

Sectoral Contagion

A key risk that manifested this year was **contagion risk**. The crypto model includes investment by the sector into the sector. The Terra LUNA collapse pulled Celsius, Voyager, BlockFi and more into bankruptcy. FTX acquired all of these businesses and kept accumulating shortfall.

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with investment services in crypto-backed derivatives, although FTX was not allowed to conduct cryptocurrency trading. CySEC suspended FTX's licence on 9 November 2022.

[10] https://www.coingecko.com/research/publications/countries-impacted-ftx-collapse

[redacted]

[12] https://www.oecd.org/publications/lessons-from-the-crypto-winter-199edf4f-en.htm

The OECD in their recent report – Lessons from a Crypto Winter [12] highlighted that if the financial stability frameworks applicable to traditional financial systems were applied to the crypto sector, the **crypto sector would be prone to systemic risks due to increasingly high concentration risks, leverage, and high interconnectedness** within the eco-system.

Governance and Conduct

In the case of FTX, customer funds and **client assets were allegedly used inappropriately**. According to Reuters, FTX transferred at least $4 billion to Alameda (its sister firm), including some customer deposits, to prop up the trading firm after a series of losses.[13] [14] As a result, key FTX management are currently under investigation for fraud.

Transparency

For backed crypto, **quality of reserves** is key. [redacted] Reserves are subject to market, credit and liquidity risks. Losses could be magnified due to high leverage often facilitated by CASP's.

Appendix 7.4 presents the **monetary policy** risks from a developing crypto ecosystem.

4.4 Financial Stability Risks from an Evolving Crypto Ecosystem

Identifying and mitigating financial stability risks arising from the crypto sector has been a key focus for international regulatory bodies. The FSB in their February 2022 report[15] highlighted the fast evolution of crypto markets and how they could reach a point of threat to global financial stability due to their scale, structural vulnerabilities and increasing interconnectedness with the traditional financial system. This rapid evolution could result in financial stability risks rapidly escalating, underscoring the need for timely and pre-emptive evaluation of policy responses. The recent turmoil has demonstrated these growing risks.

In May 2022, the OECD published a study on the interconnectedness between the crypto eco-system and traditional finance.[16] The report highlighted a growing supply of regulated products referencing digital assets mainly driven by the interest from investors. It also highlighted an increased interest from, and participation of, institutional investors in the digital assets markets. This can lead to increased interconnectedness between traditional finance and the crypto eco-system risking spill-overs into the traditional financial system and the real economy.

In November, the OECD published a report looking at lessons from the Crypto Winter[17] and highlighted how the correlation between crypto and traditional markets is increasing. Their analysis demonstrated extremely strong correlation between the returns of Bitcoin and Ether. The short-term correlation of Bitcoin returns with that of equity markets seemed to increase

[13] https://www.reuters.com/technology/how-secret-software-change-allowed-ftx-use-client-money-2022-12-13/
[14] https://www.reuters.com/article/fintech-crypto-ftx-binance-collapse-idCAKBN2S00BD
[15] https://www.fsb.org/wp-content/uploads/P160222.pdf
[16] https://www.oecd-ilibrary.org/docserver/5d9dddbe-en.pdf?expires=1671721261&id=id&accname=guest&checksum=EA5FD633C42A4EBFB3829332025BC711
[17] https://www.oecd.org/publications/lessons-from-the-crypto-winter-199edf4f-en.htm

during general market downturn periods, for example during Q1 2020, the first COVID-19 wave of infections, and again at the end of 2021 during a period of equity turbulence.

In addition, **the correlation of Bitcoin with equity markets has been increasing over time.** Such correlation points to an increased interconnectivity between the two eco-systems. In this context, it is important to note that evidence suggest that the causation is more likely from traditional assets and macroeconomic conditions affecting crypto markets, than the other way around.

From a Banking perspective a recently released, updated BCBS study on the banking sectors' exposure to crypto[18] estimates bank exposure to crypto at the end of 2021 at 9.4 billion euros ($9.32 billion), or 0.14% of the total exposure of banks reporting crypto holdings. That figure drops to 0.01% as the crypto exposure of all banks is monitored. Bitcoin and Ether made up almost 90% of that exposure.

However, while the connection is increasing, studies from the OECD, FSB and ESMA, and the above mentioned, BCBS study, reaffirm that the **interconnectedness of crypto markets and traditional financial markets remains limited** and that importantly, the recent turmoil in the crypto sector has not materially affected traditional financial markets due to the former's relatively small size. This comes with a caveat in that, **should these factors change, future turmoil in a larger crypto sector could have implications for financial stability**.

5. The Irish Crypto Ecosystem

5.1 Usage by Irish Consumers

A 2021 CCPC consumer survey on broader investment trends found that 10-12% of adults own crypto, increasing to 25% in those aged 25-34 years[19]. An ECB study on consumers' payment attitudes found that, in Ireland, approximately 6% of people owned crypto. [20]

A Chainalysis report titled "Crypto Usage in Ireland" dated January 2022, ranked Ireland as 118th overall in the world for crypto currency adoption. Per the report, Ireland has a low adoption rate of crypto per capita relative to the world.

Ireland ranked 62nd on Chainalysis' DeFi adoption global index, which looked at on-chain value received, on-chain deposits and retail value transferred. According to the report, Ireland received $15 billion worth of on chain transaction volume to DeFi protocols. This data suggests that Irish people are using DeFi protocols.

5.2 Insights from the Bank

Intelligence suggests that Ireland may become an EU hub for crypto services in the future. Our insight on how this sector is developing in Ireland comes from our Innovation Hub (34% of enquiries in 2022 were crypto-related[21]), our authorisation pipeline [redacted]

[18] https://www.bis.org/bcbs/publ/d541_crypto.pdf
[19] CCPC, CCPC Investments Research; September 2021.
[20] https://www.ecb.europa.eu/stats/ecb_surveys/space/html/ecb.spacereport202212~783ffdf46e.en.html
[21] Many engagements related to VASP registration, others related to e-money or MiFID authorisations.

[redacted] and through the VASP regime pipeline.

VASP Regime

All VASPs established in Ireland must register with the Bank for AML/CFT purposes only. Under this regime, we will assess a VASP's AML/CFT policies and procedures for effectiveness in combatting the MI and TF risks associated with its business model, and their management and beneficial owners to ensure they are fit and proper.[22] Our AML/CFT supervisory approach to VASPs replicates our existing approach to the AML/CFT supervision of credit and financial institutions under the CJA 2010 to 2021. There are no passporting provisions, so a VASP may be required to seek separate registration (to the Irish VASP registration) in an EU member state (MS), depending on legislation in the MS where the VASP wants to operate. [redacted]

[redacted]

6. Moving Forward: A Crypto Regulatory Framework - MiCA

Currently, crypto activities are mostly unregulated, except for AML purposes under the VASP Framework. MiCA[23] will seek to address this gap in regulation by putting in place prudential and consumer requirements for issuers and CASPs. Appendix 7.5 sets out the key MiCA obligations of the new regulated entities.

The intention of MiCA is to address the risks to consumer protection and market integrity from crypto along with specific risks to financial stability and monetary policy while also bringing regulatory clarity to the sector. It will provide a consistent framework across the EU for the ongoing development of this innovation, and bring much needed legal clarity to the market. The Bank welcomes this new framework and will implement it as designed.

MiCA will be a very important step forward in the regulation of crypto activities in Europe while also leading the way on the regulation of the crypto sector globally. As the regulated activities continue to evolve and change rapidly, post-MiCA, ongoing monitoring of the space will be required, with the potential for further policy development to capture new and innovative aspects of the crypto market, including NFTs. We are cognizant that as the market develops the regulatory framework will require revisions to capture and mitigate developing risks particularly around liquidity risks and cultural behaviour of the sector.

[22] In July 2022, the Bank set out some key application issues in Anti-Money Laundering Bulletin.
[23] MiCA has been agreed by Council and will be voted on by the Parliament in February 2023 coming into effect in Q2 2023. The regulations will be applicable for issuers of ARTs and EMTs 12 months after coming into effect and for CASPs 18 months after coming into effect.

7. Appendices:

Appendix 7.1 - CASP Business Models

Type	Risks
Order Book Exchanges These types of exchanges provide exchange order books that bring customers together to spot buy and sell crypto. [redacted] Many of these exchanges also provide on and off ramps to use fiat currencies to buy crypto through regulated e-money institutions.	These types of exchanges are subject to very similar risks to a regulated trading venue would be subject to such as: • Governance Risk • Investor/Customer Protection Risks • Operational Risks • Market & Liquidity Risks • AML/CFT Risks • Market Abuse Risks • Market Manipulation Risks
Non Order Book Exchanges [redacted]	• Governance Risk • Investor/Customer Protection Risks • Operational Risks • Market & Liquidity Risks • AML/CFT Risks.
Crypto Asset Custodians Simply, a crypto asset custodian provides a service to custody crypto assets on behalf of a 3rd party. There are two predominant types of custodian. 1) Most exchanges provide custody services for their customers to allow their customers to deposit crypto for trading purposes. These providers typically provider services to retail customers. 2) The second type of crypto asset custodian will only provide crypto custody services and this will typically be to institutional customers.	• Governance Risks • Investor/customer protection risks • Operational and cyber security risk • Safeguarding risks • AML/CFT risk.
Other CASP Activities Providing advice on crypto-assets Providing portfolio management on crypto-assets	• Governance Risks • Investor/customer protection risks • Operational and cyber security risk • Safeguarding risks • AML/CFT risk.

Appendix 7.2 - Potential benefits and risks from developing DLT technology

Benefits

Wide range of potential use cases. For example, it can streamline capital-raising processes, for them to be cheaper, less burdensome and more inclusive.[24] It is possible that when used as a means of payment, DLT, properly configured, governed and regulated, could present opportunities in terms of cheaper, faster and more efficient payments, in particular on a cross-border basis, by limiting the number of intermediaries.[1] Other use cases are still experimental: machine to machine payments, streaming money, programmable money, and digital identity.

The cost efficiencies brought by DLT and blockchain: As described by [redacted] the invention of blockchain has "*enhanced DLT into a truly decentralised format that eliminates the need for a trusted intermediary to process and validate transactions between two parties.*"[25] Blockchain's transparency and immutability foster trust and by cutting out intermediaries could lead to faster, more direct and cost efficient processes and systems in financial services.

Increased access and participation brought by tokenisation: Tokens such as NFTs allow proof of ownership of unique digital things without the need of a central authority. As more real world assets are brought onto the blockchain and tokenised, this could allow for fractionalised ownership and deeper liquidity, with potential for increased access and participation for consumers in finance.[26]

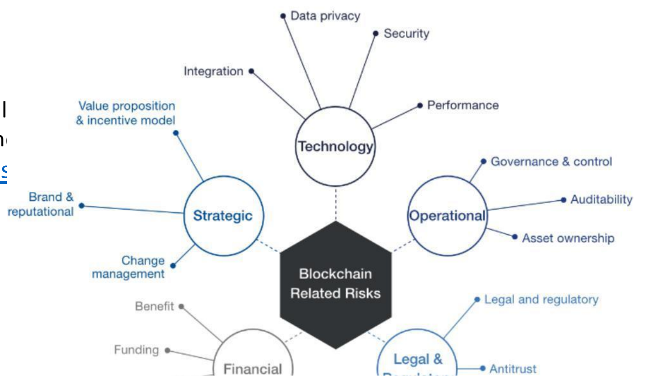
Enhanced oversight and fairness from code based finance: The features of DLT allow authorities greater auditing and oversight capabilities as crypto networks are built in the open, with established transparent protocols built to common standards. The fact that crypto is based on code allows for transparency and rules that apply the same to everyone - a regulator can know how a transaction will play out in advance of its execution and for consumers, can reduce human error and bias.

However, **the full range of benefits of blockchain and DLT will only become apparent with ongoing use and evolution** and with the further increased digitalisation of our society and economy. The challenge for regulators is to not create undue barriers, while managing the risks appropriately and making sure that undue loss and damage either to users of the products or to the financial system do not occur in the meantime.

Risks

While DLT and Blockchain technology has many potential benefits, there are also risks which should be considered. The World Economic Forum[27] highlights that there are risks around privacy of data and transactions on the blockchain, security risks, performance-related limitations of the underlying blockchain platform, and integration-related issues with other enterprise systems.

[24] EU Commission, MiCA Proposal, p. 15.
[redacted]
[26] The market opportunity for NFTs is predicted to be very l
trillion, led in the first instance by categories such as art an
[27] https://widgets.weforum.org/blockchain-toolkit/ris



Their helpful graphic outlines that risks can be grouped into five broad categories, including,

- Strategic risks
- Technology Risks
- Operational Risks
- Financial Risks
- Legal and Regulatory Risks

DLT Pilot Regime

On 2 June 2022, Regulation 2022/858 of the European Parliament and of the Council on a pilot regime for market infrastructures based on distributed ledger technology was published in the Official Journal of the European Union (**DLT Pilot Regime**).

The DLT Pilot Regime is part of a comprehensive package of measures (Digital Finance Package) introduced by the European Commission in 2020 to further enable and support the potential of digital finance in terms of innovation and competition, while mitigating associated potential risks.

The DLT Pilot Regime seeks to address the limited use to date by trading venues or central securities depositories of DLT. The regime seeks to provide authorisation to Multilateral Trading Facilities (**MTF**) and Central Securities Depositaries (**CSD**) to operate DLT financial market infrastructure and exempt these entities from certain existing requirements under financial services legislation (where these provisions potentially inhibit or limit the use of DLT). It provides for authorisation of new entrant firms as well as upgrading existing entities' scope of activities. ESMA has recently published its report on the DLT Pilot Scheme.

Appendix 7.3: 2022: The Crypto Winter: A look at the most notable crypto crises

TerraUSD (UST) is an algorithmic stablecoin, whose algorithm was supposed to maintain a $1 peg supported through a dual token system between the stablecoin TerraUST and its LUNA token. Simply put, if the UST value went above $1, the equivalent value of LUNA would be burned, which minted more UST, making it less valuable. Whereas, if the UST price dropped below $1, they were swapped for LUNA, which in turn made UST more valuable. At its peak, the LUNA token hit a high of $119.18 on 5 April before retreating to $82.94 by May 6th This came against the backdrop of a bearish wider crypto market, with bitcoin hitting a 10-month low on 10 May 2022. The same day, LUNA saw its value plummet below $40. The cryptocurrency then plunged to its all-time low of $0.00001675 on 13 May. LUNA's depeg dismissed the argument that algo stablecoins were a secure and less volatile crypto investment.

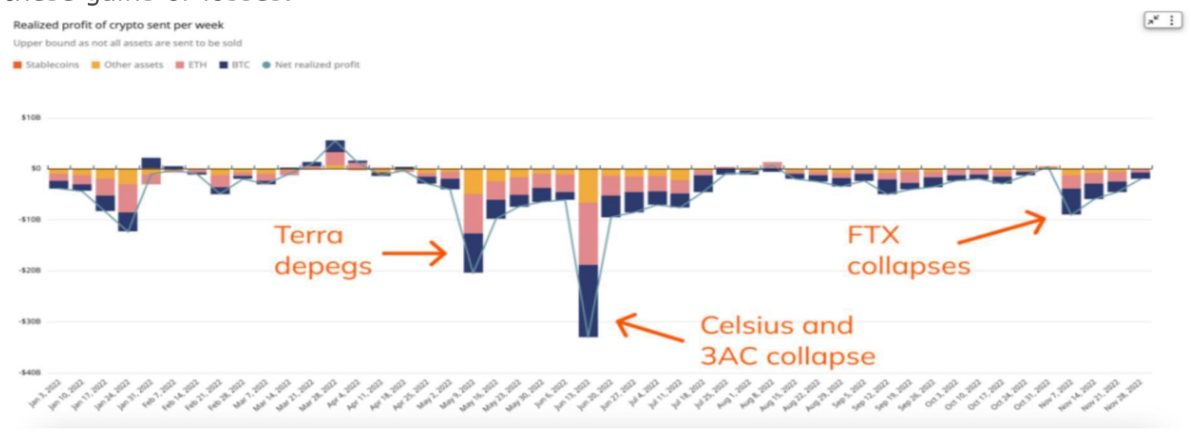
Celsius is a retail friendly crypto lending platform and one of the most popular platforms in the market who promised high returns and safe investments. Their model is simple, the take deposits, invest it in the crypto market, and participate in decentralized finance

(DeFi) to earn yields for the user, while taking a small margin. 3 Arrows Capital (3AC) was a Singapore-based cryptocurrency hedge fund which, at its height managed about $10bn in assets. 3AC had a large list of counterparties that had invested with them including Celsius.

As crypto began to slump in early 2022 led by the slide in bitcoin and ethereum, investors such as Celsius or investors with concentrated bets on firms such as 3AC began to suffer losses. In the case of 3AC, they were unable to meet the margin calls. In the case of Celsius, investors sought safer havens and users pulled funds out of Celsius. Celcius were leveraged heavily with their investments focused on other crypto, as such, when crypto prices continued to fall, so did their ability to meet their own liabilities. Furthermore, interconnectivity between Celsuis, 3AC and Terra Luna proved disastrous. Celsius were active investors and users of the Terra protocol investing funds with 3AC for 20% yield. 3AC’s 10.9 million locked LUNA that was worth $559.6m is now worth less than $1,000.

The latest crisis involved [redacted] crypto empire, officially in two parts. Firstly there was FTX [redacted] and secondly Alameda Research [redacted]. While two separate businesses, it emerged that the balance sheet of Alameda was primarily made up of FTX’s own token FTT and not independent assets such as other crypto or fiat. This news led to Binance choosing to liquidate its FTT tokens (amounting to 17% of all FTT in circulation) which spurred on other traders to do the same. FTX rushed in to a liquidity crunch. As the FTX crisis unfolded, it transpired that following the Terra Luna crisis, FTX had (through Alameda Research), bought up the largest failed players such as Celcius, Voyager Digital and BlockFi. They did this as FTX was already deeply involved with these firms on the lending side and their collapse would have harmed FTX even more. To facilitate this buyout, Alameda Research used its own token FTT as collateral and used customer funds to cover the shortfall.

While the FTX crisis dominated the mainstream headlines, [redacted] it was not the most impactful crisis – the Celsius and 3AC collapse took that prize in terms of losses to personal wallets. The chart below from Chainalysis illustrates the gains and losses to all personal wallets through 2022 noting these main market-moving events and highlights the types of asset driving these gains or losses.



[28]

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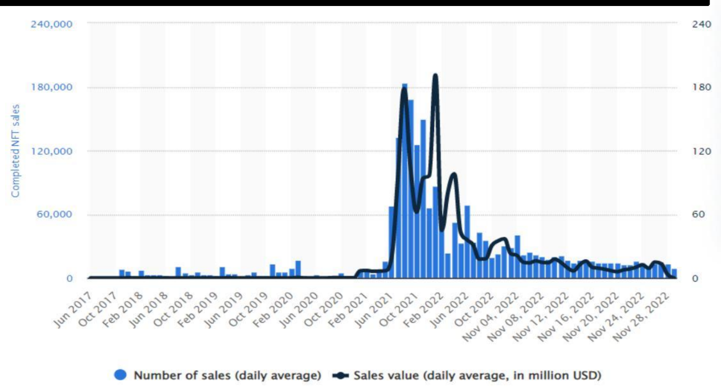
[28] https://blog.chainalysis.com/reports/ftx-investor-impact-less-than-previous-crises/

Stablecoins seek to mitigate volatility by pegging to a stable asset such as fiat, also saw their growth stunted. While the total value of all stablecoins increased 450%, from $28bn in January 2021 to $154bn in August 2022[29], the latter half of 2022 saw a reduction in volume. While Terra Luna proved that algo stablecoins were not immune to crashes, the market also continued to challenge Tether over the quality of its reserves.

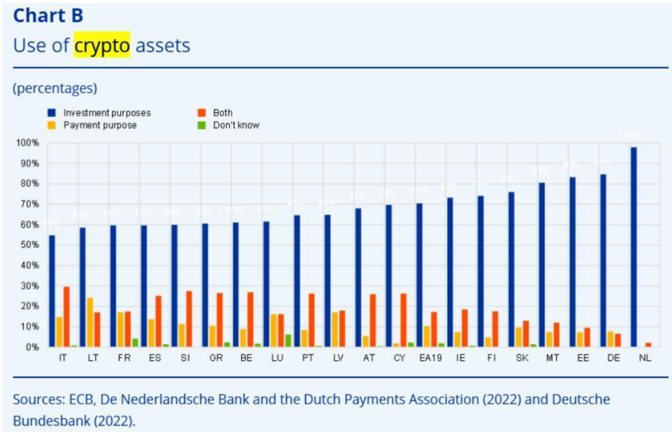
[redacted]

While 2021 saw huge growth in NFT's[31] with the market then estimated to have surpassed $40 Billion[32], 2022 is more muted. Given the diverse nature of NFTs and their growth over the last year, it is important that regulators and policy makers monitor the space and consider the characteristics and function of the NFT and not the terminology used by the issuer.[33]



Appendix 7.4 – Monetary Policy Risks

Currently, the presence of crypto is not a major concern for monetary policy implementation. Importantly, while there are some instances of real world use cases, such as in Ukraine or Venezuela, where citizens use crypto to transfer value or make a payment when traditional frameworks have failed, these examples are within unique and exceptional circumstances. In the main however, crypto do not currently fulfil the functions of money, and the impact on the real economy is small. It is very difficult to find reliable data to assess the use of crypto in the real economy. Crypto are mainly used for other use cases outside of the real economy for the purposes of speculation, in DeFi, and to buy NFTs. A recent ECB survey[34] confirmed the primary use for crypto holders was investment



[29] https://coinshares.com/research/stablecoins-cryptos-killer-app

[redacted]

[31] NFTs are digital tokens that are unique and are not interchangeable like other crypto assets. NFTs use a different token standard than fungible tokens, and can have a diverse range of use cases from digital collectibles, to the tokenisation of real world assets, to financial products.

[32] https://www.bloomberg.com/news/articles/2022-01-06/nft-market-surpassed-40-billion-in-2021-new-estimate-shows#xj4y7vzkg

[33] https://www.fatf-gafi.org/media/fatf/documents/recommendations/Updated-Guidance-VA-VASP.pdf

[34] https://www.ecb.europa.eu/stats/ecb_surveys/space/html/ecb.spacereport202212~783ffdf46e.en.html

purposes with low or negligible use as a payment mechanism in the real economy (see chart to the right). However, backed crypto (stablecoins) are the most likely to be used in the real economy, particularly for cross border transactions.

Looking forward, growth in crypto use could have implications for monetary policy where they might offer credible substitution to cash or deposits.[35] Nonetheless, the high levels of price volatility observed for most crypto makes such a scenario unlikely. To offer a viable alternative, crypto would need wide acceptance by merchants as a means of payment. Without central bank backing and price volatility, merchants are unlikely to interact with such forms of payment, making it very difficult for crypto to fulfil monetary asset characteristics in the near future.

While crypto are not alternates to cash or deposits currently, their implications for monetary policy could be thought of in a similar manner to other asset markets (e.g. equity markets). Despite this, the relatively small size of the crypto market means it is of limited concern for monetary policy transmission. However, stablecoins could offer the very substantial reduction in price volatility that a wider substitution of crypto for cash or deposits would likely require, especially if sponsored by large companies with a sizeable potential user base.[36] Stablecoins could become less volatile if they were collateralised, e.g. by central bank reserves. Such collateralisation could result in additional demand for central bank reserves, which could have clear implications for the central bank balance sheet size and monetary policy transmission.

There are additional risks from large systemic and powerful stablecoins, particularly for countries with weak institutions or currencies. There are risks around the potential to shift control of monetary policy from Central Banks to the systemically large stablecoin issuers. Should a stablecoin have a global nature it could also mean that capital controls may no longer be a policy response available to governments to prevent capital flight in times of stress.

[35] ECB Crypto-Assets Task Force (2019)

[redacted]

Appendix 7.5 - Key Obligations Placed on Crypto Firms by MiCA

Type	Use Case	Risks
Issuers of EMTs **An EMT issuer of an EMT is an** entity that seeks authorisation to issue "a type of crypto-asset that purports to maintain a stable value by referencing to the value of one official currency.	• Payments, in particular cross border payments, • as a trading assets to trade in and out of fluctuating crypto assets, • in Decentralised Finance (DeFi) for collateral, as a trading pair	• Governance Risks • Operational Risks • Consumer Protection • stabilisation Risk • Reserve Risk, • Market and Liquidity Risk • AML/CFT risk
Issuers of ARTs **An issuer of an ART is an entity** that seeks to offer "*a type of crypto-asset that is not an electronic money token and that purports to maintain a stable value by referencing to any other value or right or a combination thereof, including one or more official currencies*". These can be viewed as tokenised assets.	• enables the tokenisation of any asset type and the uses cases will grow once the regulations are clear, • some assets, in particular commodities are not a good medium of exchange and ARTs may address this, • enables the tokenisation of a basket of assets	• Governance Risks • Operational Risks • Consumer Protection • stabilisation Risk • Reserve Risk, • Market and Liquidity Risk • AML/CFT risk
Issuers of Crypto Assets *including Utility Tokens* **Under MiCA an "***issuer of crypto-assets means the natural or legal person or other undertaking who issues the crypto-assets*". An issuer of a utility token is an entity that is seeking to issue a "*Crypto-asset intended to provide digital access to a good or a service supplied by the issuer*" under MiCA.	• Means of payment within an issuers platform, • Can be the staking token of a blockchain and used to secure the blockchain network, • Can be used to incentivise consumer behaviour similar to points collects in stores, • Consumers could receive discounts and other benefits for using the utility token, • utility tokens have value and can be sold for fiat unlike for example Tesco club points,	• Governance Risks • Operational Risks • Consumer Protection • AML/CFT risk

Some of the key aspects of MiCA are the following:

Obligations on CASPs

MiCA will impose a mix of conduct and prudential requirements on CASPs. This will include, for example, trading platforms; exchanges; custody providers; execution firms; and advice providers. The issuance of Bitcoin and other unbacked crypto will not, because of their wholly intangible nature, be within MiCA's scope. However, CASPs - which provide the interface between the consumer and the product - will be regulated.

Some key obligations include:

- CASPs will be required to be authorised in an EU member state in order to operate within the EU. As part of that authorisation they will have to set out the crypto services they want to offer to EU consumers.
- Important consumer protection obligations, governance obligations, minimum capital requirements, and transparency requirements along with prohibitions on insider dealing, market manipulation and the unlawful disclosure of inside information.

- Requirements for CASPs to issue consumer warnings where the consumer has not satisfied the conditions of the required appropriateness test along with the introduction of minimum standards for advertising and marketing.
- Maintaining segregated accounting practices to properly keep customer funds separate and suitably protected from incidents such as insolvency along with requirements to maintain a suitable insurance that will cover its exposures in case of a partial or total technical failure.

Obligations on issuers of EMT's and ART's

MiCA will impose a mix of conduct and prudential requirements on issuers of Electronic Money Tokens (EMTs) and Asset-referenced Tokens (ARTs) including.

- Consumer protection obligations to act fairly and in the best interests of EMT and ART holders.
- EMT issuers will offer redemption at par (1:1) while both EMT and ART issuers will have clearly disclosed redemption obligations.
- EMT and ART issuers will be required to provide clear and up to date information including updated whitepaper information, the disclosure of risk events, any conflicts of interest, and ensure there are clear procedures for complaints handling for consumers while ART issuers will additionally need to provide transparency on ARTs in circulation.
- Issuers of EMTs and ARTs will be subject to prudential requirements including capital requirements and reserves obligations including detailed policies and safe custody of same.
- For both EMT and ART issuers, there will be restrictions for investment of reserves and the expectation of robust governance, including business continuity, control and risk assessment, and appropriate 3rd party contractual agreements. For issuers of ART's there will be a ban on interest to ART holders.

Briefing Note

Prepared by: [redacted]
Division: PRHT
Date prepared: 23/01/2023
Preparatory committee/WG:

Briefing Overview

This briefing sets out:

- The data the Central Bank has on crypto usage in Ireland
- An overview of the main areas of activity in Ireland including Virtual Asset Service Providers operating or seeking to operate in Ireland, and crypto exchanges that operate globally
- Crypto Asset Risks and the European Markets in Crypto Asset Regulations
- The Central Banks Innovation Hub and an overview of micro and small firms that have engaged with the Hub

Data on Crypto Usage by Irish consumers

For data on the use of crypto by Irish customers we rely on 3rd party data sources.

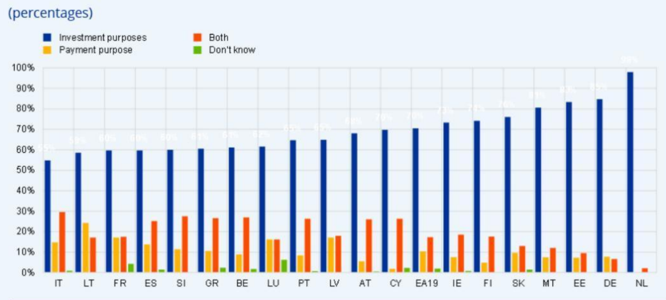
CCPC consumer survey

A 2021 consumer survey from the CCPC on broader investment trends found that 10-12% of adults in Ireland own crypto. The CCPC survey found that this increases to 25% amongst those aged 25-34 years, the age group for whom crypto ownership is most popular[1].

ECB Study

More recently, the ECB study on consumers' payment attitudes found that approximately 6% of people owned crypto in Ireland. [2]

Chart B
Use of crypto assets



Sources: ECB, De Nederlandsche Bank and the Dutch Payments Association (2022) and Deutsche Bundesbank (2022).

Chainalysis

A Chainalysis report titled "Crypto Usage in Ireland" dated January 2022, ranked Ireland as 118th overall in the world for crypto currency adoption. As can be seen from the report, Ireland has a low adoption rate of crypto per capita relative to the world.

[1] CCPC, CCPC Investments Research; September 2021.
[2] https://www.ecb.europa.eu/stats/ecb_surveys/space/html/ecb.spacereport202212~783ffdf46e.en.html

Ireland ranked 62nd on Chainalysis' DeFi adoption global index, which looked at on-chain value received, on-chain deposits and retail value transferred. According to the report, Ireland received $15 billion worth of on chain transaction volume to DeFi protocols. This data suggests that Irish people are using DeFi protocols. The Bank has prioritised research on DeFi and membership of IOSCO's Fintech Task Force and DeFi working group.

The Central Bank Innovation team is in the process of setting up a meeting with Chainalysis in March 2023 to gain further insights into crypto usage in Ireland.

Insights from the Innovation Hub

Intelligence suggests that Ireland may become an EU hub for crypto services in the future. Our insight on how this sector is developing in Ireland comes from our Innovation Hub (34% of enquiries in 2022 were crypto-related[3]), [redacted]

Activity in Ireland

Virtual Asset Service Providers (VASPs) in Ireland

Through the Virtual Asset Service Provider (VASP) regime in Ireland, we have sight of the VASPs that are operating from Ireland or seeking registration to operate from Ireland. Since the regime came into force, the Central Bank has approved 4 VASPs to date (Gemini Digital Assets Limited, Zodia Custody Limited and two Coinbase entities).

There are currently [redacted] in the Bank's VASP registration application process [redacted]

The VASPs regime came into force in April 2021 and VASPs established in Ireland, must register with the Bank for AML/CFT purposes only. Under this regime, the Central Bank will assess a VASP's AML/CFT policies and procedures for effectiveness in combatting the Ml and TF risks associated with its business model, and their management and beneficial owners to ensure they are fit and proper.[4] Our AML/CFT supervisory approach to VASPs replicates our existing approach to the AML/CFT supervision of credit and financial institutions under the CJA 2010 to 2021. There are no passporting provisions, so a VASP may be required to seek separate registration (to the Irish VASP registration) in an EU member state (MS), depending on legislation in the MS where the VASP wants to operate.

Global Crypto Exchanges

Global regulated and unregulated crypto asset exchanges can currently provide their services to Ireland customers, thus Irish customers are able to use the services of some of the largest crypto asset exchanges in world including Binance, Kraken, Kucoin, Bitfinex, Bybit[5]. As the global regulatory landscape for such exchanges is current very immature, customers may not be aware of the risks of using such services. (See risks section below)

[3] Many engagements related to VASP registration, others related to e-money or MiFID authorisations.
[4] In July 2022, the Bank set out some key application issues in [Anti-Money Laundering Bulletin](#).
[5] https://coinmarketcap.com/rankings/exchanges/

Crypto and Risks to Consumers

Central Bank concerns and Sector Risks

The Central Bank has concerns about the considerable negatives associated with crypto that is unbacked (or poorly or unreliably backed), is widely and intensively marketed and promoted for consumer purchase, and is increasing in their linkages to the wider financial system. Consumers face risks from high price volatility, security issues and fraud, and have little or no protection in the face of "pump and dump" strategies and aggressive marketing. It is for these reasons that the Bank has issued several warnings about crypto, highlighting the significant risks they pose to consumers. Further, the Bank, with the Department of Finance, is supporting the Competition and Consumer Protection Commission (CCPC) in the development of its 2023 consumer information campaign on crypto[6]. Differentiating between consumers and professional investors, we have adopted an approach where QIAIFs can make a material investment in crypto-assets indirectly[7].

Lack of Consumer Protection

While the protection of consumers is a crucial mandate of regulatory authorities, there are significant gaps and risks in this area within the crypto sector, due to their extreme price volatility, their highly speculative and risky nature and the absence of investor protections.

Aggressive Advertising

Aggressive and misleading advertising is prominent and we have seen the growth of "finfluencers" utilising social media to promote various crypto. In the case of FTX, prominent figures like [redacted] were all ambassadors/spokespersons for the exchange[8]. Often it is not clear that such influencers are paid to advertise, for example, [redacted]

The rise of finfluencers is challenging, they hold great sway over ordinary consumers, in particular, consumers / investors with low levels of knowledge on the sector utilising prominent social media avenues that most people interact with, but avenues that regulatory bodies with cautious and protective messages do not. This raises a question as to the need for a cross-authorities' response on crypto advertising via social media.

Sectoral Contagion

A key risk that manifested this year was contagion risk. The crypto model includes investment by the sector into the sector. The OECD in their recent report – Lessons from a Crypto Winter [9] highlighted that if the financial stability frameworks applicable to traditional financial systems were applied to the crypto sector, the crypto sector would be prone to systemic risks due to increasingly high concentration risks, leverage, and high interconnectedness within the eco-system.

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[6] In Q1 2023, the CCPC will publish a series of consumer videos on their website, promoted via targeted social media activities.

[7] Limits for indirect investment in crypto-assets set at 20% of net asset value where the QIAIF is open-ended, and 50% of net asset value where the QIAIF has either limited liquidity or is closed-ended.

[redacted]

[9] https://www.oecd.org/publications/lessons-from-the-crypto-winter-199edf4f-en.htm

Governance and Conduct

In the case of FTX, customer funds and client assets were allegedly used inappropriately. According to Reuters, FTX transferred at least $4 billion to Alameda (its sister firm), including some customer deposits, to prop up the trading firm after a series of losses.[10] [11] As a result, key FTX management are currently under investigation for fraud.

Transparency

For the backed crypto market, quality of reserves is key.[redacted]

The Market in Crypto Assets (MiCA_

The European Markets in Crypto Asset Regulations ("MiCA") is seeking to address many of the risks currently associated with crypto markets including putting in place prudential and consumer requirements for certain types of crypto issuers, including e-money tokens (EMTs), asset referenced tokens (ARTs) and other types of crypto assets, and Crypto Asset Service Providers (CASPs). The intention of MiCA is to address the risks to consumer protection and market integrity from crypto along with specific risks to financial stability and monetary policy while also bringing regulatory clarity to the sector. Once MiCA comes into force the Central Bank will be the NCA for the authorisation of issuers and Crypto Asset Service Providers under MiCA.

As MiCA will not be fully implemented until 2024, the main source of harm to consumers is the lack of regulations currently in place for the crypto asset sector. Appendix 1 sets out the obligations set out under MiCA for CASPS and issuers of EMTs and ARTs.

[redacted]

[10] https://www.reuters.com/technology/how-secret-software-change-allowed-ftx-use-client-money-2022-12-13/

[11] https://www.reuters.com/article/fintech-crypto-ftx-binance-collapse-idCAKBN2S00BD

[redacted]

Appendix 1- Key Obligations Placed on Crypto Firms by MiCA

Type	Use Case	Risks
Issuers of EMTs An EMT issuer of an EMT is an entity that seeks authorisation to issue "a type of crypto-asset that purports to maintain a stable value by referencing to the value of one official currency.	• Payments, in particular cross border payments, • as a trading assets to trade in and out of fluctuating crypto assets, • in Decentralised Finance (DeFi) for collateral, as a trading pair	• Governance Risks • Operational Risks • Consumer Protection • stabilisation Risk • Reserve Risk, • Market and Liquidity Risk • AML/CFT risk
Issuers of ARTs An issuer of an ART is an entity that seeks to offer "a type of crypto-asset that is not an electronic money token and that purports to maintain a stable value by referencing to any other value or right or a combination thereof, including one or more official currencies". These can be viewed as tokenised assets.	• enables the tokenisation of any asset type and the uses cases will grow once the regulations are clear, • some assets, in particular commodities are not a good medium of exchange and ARTs may address this, • enables the tokenisation of a basket of assets	• Governance Risks • Operational Risks • Consumer Protection • stabilisation Risk • Reserve Risk, • Market and Liquidity Risk • AML/CFT risk
Issuers of Crypto Assets including Utility Tokens Under MiCA an "issuer of crypto-assets means the natural or legal person or other undertaking who issues the crypto-assets". An issuer of a utility token is an entity that is seeking to issue a "Crypto-asset intended to provide digital access to a good or a service supplied by the issuer" under MiCA.	• Means of payment within an issuers platform, • Can be the staking token of a blockchain and used to secure the blockchain network, • Can be used to incentivise consumer behaviour similar to points collects in stores, • Consumers could receive discounts and other benefits for using the utility token, • utility tokens have value and can be sold for fiat unlike for example Tesco club points,	• Governance Risks • Operational Risks • Consumer Protection • AML/CFT risk

Some of the key aspects of MiCA are the following:

Obligations on CASPs

MiCA will impose a mix of conduct and prudential requirements on CASPs. This will include, for example, trading platforms; exchanges; custody providers; execution firms; and advice providers. The issuance of Bitcoin and other unbacked crypto will not, because of their wholly intangible nature, be within MiCA's scope. However, CASPs - which provide the interface between the consumer and the product - will be regulated.

Some key obligations include:

- CASPs will be required to be authorised in an EU member state in order to operate within the EU. As part of that authorisation they will have to set out the crypto services they want to offer to EU consumers.
- Important consumer protection obligations, governance obligations, minimum capital requirements, and transparency requirements along with prohibitions on insider dealing, market manipulation and the unlawful disclosure of inside information.
- Requirements for CASPs to issue consumer warnings where the consumer has not satisfied the conditions of the required appropriateness test along with the introduction of minimum standards for advertising and marketing.
- Maintaining segregated accounting practices to properly keep customer funds separate and suitably protected from incidents such as insolvency along with requirements to maintain a suitable insurance that will cover its exposures in case of a partial or total technical failure.

Obligations on issuers of EMT's and ART's

MiCA will impose a mix of conduct and prudential requirements on issuers of Electronic Money Tokens (EMTs) and Asset-referenced Tokens (ARTs) including.

- Consumer protection obligations to act fairly and in the best interests of EMT and ART holders.
- EMT issuers will offer redemption at par (1:1) while both EMT and ART issuers will have clearly disclosed redemption obligations.
- EMT and ART issuers will be required to provide clear and up to date information including updated whitepaper information, the disclosure of risk events, any conflicts of interest, and ensure there are clear procedures for complaints handling for consumers while ART issuers will additionally need to provide transparency on ARTs in circulation.
- Issuers of EMTs and ARTs will be subject to prudential requirements including capital requirements and reserves obligations including detailed policies and safe custody of same.
- For both EMT and ART issuers, there will be restrictions for investment of reserves and the expectation of robust governance, including business continuity, control and risk assessment, and appropriate 3rd party contractual agreements. For issuers of ART's there will be a ban on interest to ART holders.