Consumer attitudes on the risks and benefits of engaging with digital assets

A joint insights paper by the Information Commissioner's Office (ICO) and the Financial Conduct Authority (FCA)

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Summary

Digital assets are an increasingly popular product among UK consumers – seen as investment opportunities and as a means of electronic payment. As digital assets have become more widespread, and given their uptake could continue to grow, there are potentially new regulatory challenges in financial services and data protection. The 2023-24 Digital Regulation Cooperation Forum (DRCF) workplan set out a commitment to build a deeper understanding of the potential benefits and harms posed to consumers by digital assets. The FCA and ICO have progressed joint research that considers and explores both consumer attitudes towards digital assets and how they interact with these products – with Ipsos contracted to carry out one-to-one qualitative online interviews with a sample of 31 UK digital asset holders.

Overall, the digital asset holders interviewed expressed a view that digital assets offered the potential for high financial reward, while primarily considering risk in terms of the likelihood the price of a digital asset decreasing. Many consumers also demonstrated a strong affinity to wider digital assets culture, with demand often being deeply aspirational and driven by an attachment to this community.

The research also showed that many participants indicated a limited understanding of the distributed ledger technology that generally underpins digital assets, and a lack of awareness of the different implications this underlying technology could present for their personal data and information rights. When some participants did mention concerns around privacy and data security regarding digital assets, these would often be overridden in favour of the potential for significant financial return, or sometimes compared to similar considerations when engaging online generally, such as with a bank or retailer.

From the qualitative findings of this research, the FCA and ICO consider the following regulatory insights are worthy of further consideration and engagement with stakeholders:

- **Technology** underpinning popular digital assets and decentralised finance markets offers unique features that consumers can value. However, it can also pose novel challenges that need to be considered and addressed so consumers are appropriately protected.
- **Transparency** is vital for enabling consumers to understand the level of risk they may be exposed to when engaging with digital assets, how their data may be processed, and how they can exercise their rights. Without appropriate transparency, confidence in the technology and wider digital assets market could be undermined.
- **Trust** in how money and data is secured is fundamental to consumers when choosing and using traditional financial assets and institutions. While digital assets are a somewhat unique proposition, consumer trust will still be crucial to their wider adoption. Both financial services and data protection regulation provide guardrails that can support firms to foster this trust.

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1. Introduction

ICO and FCA interest in digital assets

Traditional financial services institutions such as banks operate as trusted, centralised intermediaries which facilitate transactions between parties. These organisations can conduct and verify financial transactions and are trusted to hold customer data securely. Digital assets, in contrast, are unique in that they can operate on a decentralised and distributed technology architecture without a central authority conducting verification checks on transactions. These technological features may be seen as beneficial by consumers – as they may feel empowered to be their own bank and manage their own identity. At the same time, these features can also lead to regulatory challenges, such as the risk of harm from not being able to exercise their information rights and financial harm from losing access to assets.

Today, digital assets represent only a small share of financial services market transactions[1] and remain volatile as investments.[2] Nevertheless, as of August 2022, around 10% of UK adults hold some form of digital asset[3] and the use of them – and the distributed ledger technologies that underpin them – has the potential to evolve and demand to grow further. This means that, in future, a larger volume of financial transactions could sit outside of traditional financial institutions. Understanding consumer attitudes and motivations to engage with digital assets is timely, as it is important for appreciating the unique benefits and risks these assets may present to the public both now, and into the future.

To better understand how consumers engage with digital assets, the UK Financial Conduct Authority (FCA) and the Information Commissioner's Office (ICO) have commissioned Ipsos, as part of a joint Digital Regulation Cooperation Forum (DRCF) research project, to qualitatively investigate consumer attitudes on the benefits and risks that digital assets might pose. Building a collective understanding of consumer attitudes and interactions with digital assets[4] will help support an informed regulatory approach, from both a financial and data protection regulation perspective.

Regulatory focus on digital assets

The FCA regulates the financial services industry in the UK and its role includes protecting consumers, enhancing and protecting market integrity, and promoting healthy competition between financial service providers. From the FCA's perspective, digital assets and the technology that underpins them have the potential to deliver future benefits in financial

[1] Financial Stability in Focus: Cryptoassets and decentralised finance | Bank of England
[2] Investing in crypto | FCA
[3] Individuals holding cryptoassets: uptake and understanding - GOV.UK (www.gov.uk)
[4] A 2023 insights paper set out the DRCF's emerging perspective on the concepts and technologies associated with Web 3.0, including digital assets. See: Insight paper on Web3 (publishing.service.gov.uk)

services and other sectors. Harnessing these potential benefits requires effective action to manage the range of risks observed in the current digital asset market. These risks may be particularly acute when UK consumers engage with services outside the UK. Qualitative consumer research can provide greater understanding of consumer experiences when interacting with digital assets, and insight into consumer attitudes and perceptions of risks they associate with of these assets and the benefits they gain from engaging with these products.

The ICO is the independent supervisory authority for data protection in the UK. It upholds information rights in the public interest, promoting openness by public bodies and data privacy for individuals. From the perspective of the ICO, the qualities of distributed ledger technologies that enable transparent, permissionless and permanent processing beyond centralised control structures can also present clear challenges for data protection compliance and how people exercise their information rights. Data protection laws and the ability of the public to exercise rights under those laws still apply no matter how new or novel a technology may be. The ICO's priority is to ensure that people are protected from harm, understand how their personal data will be used and that their rights are promoted and upheld, so trust in new technologies is fostered.

Increased adoption of digital assets could also have implications for other DRCF member regulators. For example, the Competition and Markets Authority (CMA) has an interest in understanding how consumers engage with products underpinned by distributed ledger technologies, such as digital assets, and how this technology can influence consumer protection and competition outcomes. The Office for Communications (Ofcom) also has a general interest in understanding developments in digital assets and potential risks and benefits for users of communications services.

Purpose of this paper

This paper provides an overview of the themes emerging from the qualitative research commissioned with Ipsos, and the insights it presents from a FCA and ICO perspective. These insights will help inform future regulatory approaches concerning digital assets. To this end, this paper sets out:

- An outline of factors driving demand for digital assets over time, including the technological features of digital assets.
- The FCA and ICO's regulatory interest in digital assets.
- An overview of the research commissioned from Ipsos, including the objectives, scope and methodology, limitations and key themes.
- Regulatory insights gained from the Ipsos qualitative research, from the perspective of the ICO and the FCA.

2. Background to digital assets

'Digital assets'[5] is a broad term which covers a variety of **'cryptographically secured'** non-tangible assets in digital form. These can include **'cryptoassets'** (such as Bitcoin and Ethereum), **'stablecoins'**, **'non-fungible tokens**' **(NFTs)** and other community or utility tokens. Demand for digital assets has increased sharply in recent years, with approximately 4.5m UK adults holding some form of digital asset as of August 2022.[6]

As a technology, the primary innovation associated with digital assets is the use of cryptographically secured **'distributed ledger technology' (DLT)**. A distributed ledger is a database which is typically publicly available, append only and immutable. New entries to the ledger are verified through a process called validation (commonly called 'mining'). This creates a database which is append only, meaning entries can be added but not changed. The Bitcoin **'blockchain'** is a well-known application of DLT, serving as a record of all previous Bitcoin transactions.

Digital assets represent entries in the distributed ledger, and can record representations of activities, ownership and transactions. The use of DLT solves the 'Double Spend' problem, which had previously limited use cases and adoption. While the use of DLT in this way is most associated with '**decentralised finance' (DeFi)**, several other applications such as payments, healthcare[7] and logistics[8] have been identified as potential use cases.

Double Spend Problem

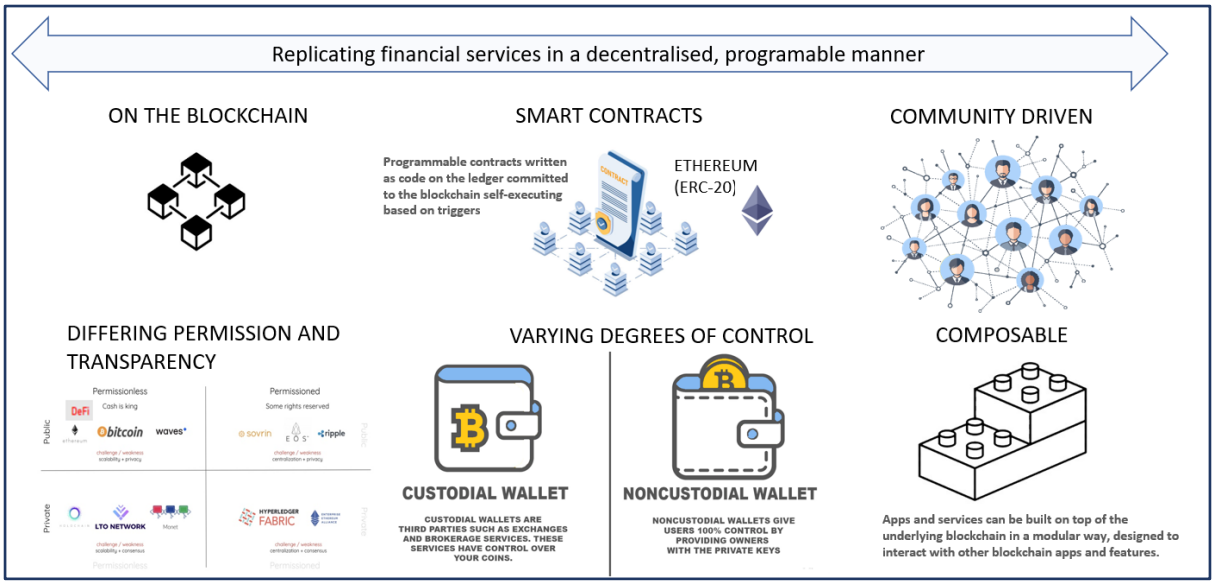
Digital objects such as files and text are typically easy to duplicate. While this is efficient in most contexts, it presents a challenge when trying to create a digital alternative to money or other object which derives value from its scarcity.

This is the Double Spend Problem: how can a receiver of a digital asset be sure that the asset they were sent was not simultaneously sent to someone else?

Bitcoin solves the double spend problem by using a cryptographically secured decentralised ledger, which all users can access. Because all members of the Bitcoin network can examine the full history of transactions, they can be sure that neither their coins nor any other coins have been spent previously, and that any wallet address sending them bitcoin has ownership of them.

A further innovation is the use of **'smart contracts'**, which are programmes stored on DLT which execute once certain conditions are met. The use of smart contracts can result in efficiencies and reduced reliance on intermediaries, through increased automation of existing processes.

[5] For reference, **bolded technical terms** in this report are defined in the Glossary.
[6] https://www.fca.org.uk/publication/research-notes/research-note-cryptoasset-consumer-research-2023-wave4.pdf
[7] https://reform.uk/wp-content/uploads/2018/12/Blockchain-in-the-NHS-VF_1.pdf
[8] http://blockchain.cs.ucl.ac.uk/dlt-in-the-supply-chain-report/



Source: [Why Decentralised Finance (DeFi) Matters and the Policy Implications (oecd.org)]

While cryptographically secured digital assets have been available since 2009, interest and motivations for purchase have varied over time, as set out below.

Initial demand was influenced by privacy concerns

Following increased adoption of the internet and other digital products, several options for developing a digital alternative to traditional currency were explored. This initial interest in a digital form of currency was primarily driven by a small number of early adopters, often referred to as 'Cypher-Punks'. Their demand for a digital currency was linked to a distrust of financial institutions as intermediaries, a preference for increased privacy over transactions and reducing their reliance on traditional financial systems.

Initial proponents of alternatives to traditional currency struggled with technological limitations of digital currency, in particular the 'Double Spend' problem (outlined above). These technological challenges limited take-up and use cases, although some products did enter the market – most noticeably Digi-Cash, an early form of electronic payment which was untraceable by the issuing bank through use of public encryption keys.[9]

Initial use cases were limited

The creation of Bitcoin in 2009 used a proof-of-work 'blockchain' to solve the Double Spend problem. Through cryptographically secure systems blockchain ensured that all Bitcoins could be traced through the spend history. This eliminated the need for intermediaries to verify transactions.

[9] https://ec.europa.eu/newsroom/cef/items/658303

Early demand was initially limited to the adopters who had sought out digital currencies as an alternative to traditional finance. As initial adopters began recording the price per Bitcoin based on reported transactions, several small bubbles occurred, driven by low liquidity and high asset price volatility. While a number of other rival products and complementary products were subsequently launched, the digital asset industry at this time remained very small, with key market participants, such as the exchange Mt Gox, often being run by a single individual.

As awareness and usage of alternative digital currencies increased, they also began to receive attention from criminal organisations, who valued anonymity features and the ability to bypass traditional financial institutions. This increased attention and awareness also attracted interest from technology entrepreneurs, who explored additional use cases, with many focusing on the potential of the underlying blockchain technology.

Increased awareness has led to speculative investment

Following increased awareness, sharp rises in price levels resulted in further demand, with many new entrants focusing on the potential of digital assets as investment product rather than as a medium of exchange or as an alternative to traditional finance. New products such as stablecoins and utility tokens offered additional use cases for digital assets and further increased demand. Criminal use also became more restricted as increased awareness and expertise in law enforcement agencies allowed them to use blockchain transaction histories to identify criminal groups.[10]

An initial speculative bubble in 2017 ended with a subsequent decline in asset prices, but also significantly increased awareness around digital assets. During this time, a large volume of firms established themselves to service demand in the sector and increase use cases through offering alternatives to traditional finance, including:

- Exchanges which offer ways for individuals to purchase and trade in digital assets.
- Lending and Staking platforms which offer consumers an opportunity to earn a return on their digital assets without selling.
- NFTs, which can offer a form of digital art and ownership.

Increased accessibility and demand for digital assets resulted in a significant increase in asset prices, further driving demand, and fuelling a further speculative bubble starting in the second half of 2020. Conversely, as digital asset prices began to decline in 2022, business models which were heavily dependent on continued growth resulted in significant firm failure, in what became known as the ‘Crypto Winter’.

At the time of publication (May 2024), digital assets are experiencing increased adoption from institutional investors and prices have recovered to a new peak.

[10] As of 2023, Chainalysis estimate that illicit transaction activity represented just 0.34% of on-chain transactions: https://go.chainalysis.com/rs/503-FAP-074/images/The%202024%20Crypto%20Crime%20Report.pdf?version=0

3. Regulating digital assets

FCA regulatory interest

The FCA's current regulatory remit toward digital assets covers the anti-money laundering (AML) and counter-terrorist financing (CTF) supervision of cryptoasset businesses registered in the UK under the Money Laundering, Terrorist Financing and Transfer of Funds (Information on the Payer) Regulations 2017 (MLRs). The FCA also regulates the financial promotions of cryptoassets.

Internationally, the FCA has conducted an extensive programme of work as a member of global standard setting bodies, including the Financial Stability Board (FSB) and the International Organization of Securities Commissions (IOSCO). In 2023, the FCA introduced the Travel Rule as per the Financial Action Task Force (FATF) recommendations, requiring digital asset service providers and other financial institutions to share relevant originator and beneficiary information from virtual asset transactions, with the aim of preventing money laundering, terrorist financing, and other fraud activity.

Regulatory interest in digital assets from the FCA is primarily driven by the objective to reduce consumer harm by way of:

- Ensuring the UK continues to have a safe and stable regulatory environment where digital assets firms protect consumers, markets operate with integrity, and foster innovation and competition among firms. This aligns with our commitment to deliver assertive action on market abuse and supporting the Consumer Duty.
- Ensuring digital assets firms provide services and products of appropriate standards, supporting our commitment to put consumers' needs first.
- Developing an environment that is safe, minimises harm from firm failure and where customers can have confidence when interacting with firms and the payment ecosystem. This aligns with our commitments to reduce harm from firm failure and minimise the impact of operational disruptions.
- Greatly reducing the amount of digital assets linked to illicit activities for authorised firms, in line with our commitment to reduce and prevent financial crime.
- Ensuring customers are given appropriate information in a non-technical and easily understandable format, enabling them to make good decisions about the purchase of stablecoins, in line with our commitment to enable consumers to help themselves.
- Promoting innovation involving, for example, the use of DLT or innovative products, in line with our commitment to shape digital markets to achieve good outcomes.

While regulation may be able to mitigate some of the harm, it will not be able to stop all risk in relation to digital assets, in particular, the risk of financial loss. Consumers who buy digital assets must still be prepared to lose all their money.

Beyond reducing harm, the FCA also has a secondary objective to increase UK growth and international competitiveness. Promoting innovation or innovative products, in line with our commitment to shape digital markets, helps contribute to this outcome.

ICO regulatory interest

Traditional financial services firms such as banks need to hold a lot of information about customers to run client accounts and to comply with legal obligations around aspects like money laundering and counter terrorism checks. Digital assets also involve the processing of personal information and data protection law applies to this processing.

A challenge – from a data protection regulation perspective – is presented by the DLT which can underpin digital assets. This is particularly the case for a public blockchain, for which there could be a transparent, permanent and unchanging log of transactions. These features of DLT can have potential benefits – such as promoting transparency and trust in data that is shared and accessed on the blockchain[11] and supporting data governance by providing a high level of security, authenticity and traceability of data.[12] However, these same features can also present clear challenges for privacy and compliance under data protection law, including concerns about the ability of people to exercise their information rights.

The ICO's 2022 Tech Horizons report noted that some unique data protection issues can emerge where digital assets are provided through decentralised finance systems and technology:

- **Permanent recording of transactions**: transactions are stored permanently on blockchains which raises questions around the ability for people to exercise their data rights[13] such as the Right to Rectification and Right to Erasure.[14]
- **Storage limitation:** the principle of storage limitation[15] under UK GDPR stipulates that personal data be retained for no longer than necessary to achieve the purposes of processing. With a feature of blockchains being the indefinite retention of data, this principle may be difficult to reconcile.
- **Risk of re-identification:** information recorded as part of blockchain transactions may be **'pseudonymised'** rather than strictly '**anonymous'**[16]. The risk of re-identification grows with the volume of pseudonymised data stored on the blockchain (e.g. via transactions). An increasingly detailed view of the wallet holder could be formed – potentially revealing someone's preferences or behaviours.
- **Controllership:** the decentralised nature of networks in the digital assets industry raises questions about who may be the controller or joint controller for the processing activity,

[11] EPRS_STU(2019)634445_EN.pdf (europa.eu), p. III.
[12] cipl_discussion_paper_on_digital_assets_and_privacy__19_jan_2023_.pdf (informationpolicycentre.com), p. 21.
[13] A guide to individual rights | ICO
[14] The ICO is aware that some technical approaches are being explored that may facilitate change or erasure without corrupting the chain. See: Blockchain Mutability: Challenges and Proposed Solutions (computer.org)
[15] Principle (e): Storage limitation | ICO
[16] chapter-3-anonymisation-guidance.pdf (ico.org.uk)

and so have obligations under UK GDPR. Similar issues arise when considering who may attract obligations as a data processor, where they are acting on behalf of, and only on the instructions of, the relevant controller or joint controllers under UK GDPR.[17]

- **Accountability**: as there may be no central authority within a blockchain, the ability to exercise information rights can be undermined with no single party being accountable for the correct information being held on the chain.[18]
- **Resilience and security**: digital assets can be susceptible to attack from hostile actors, with several well publicised hacks and compromises seen to date.[19] When these incidents take place, not only is currency lost, but personal information can also be exposed.

Given these above issues, it is important for regulators to build a strong understanding of the risks and benefits digital assets could pose for consumers. Understanding the nature of risks and benefits to consumers will support stakeholders to identify solutions that maximise privacy protections without compromising the utility and effectiveness of digital assets that consumers may value. It can also inform proportionate regulatory responses to any challenges, including future ICO guidance on data protection and distributed ledger technologies. Digital assets – and potentially other applications of DLT in decentralised finance – are likely to be use-cases that help shape this guidance. The ICO expects to consult on draft guidance later in 2024/25.

[17] What are 'controllers' and 'processors'? | ICO
[18] Accountability and governance | ICO
[19] Comprehensive List of DeFi Hacks & Exploits - ChainSec

4. Consumer Research

Background research

The FCA and ICO conducted background research to identify key themes and trends associated with digital asset demand across the UK, to allow us to identify key evidence gaps that would inform our subsequent Ipsos qualitative research. This background research included:

- Engagement with industry group UK Cryptoasset Business Council (UKCBC), who provided insight into consumer demand, benefits, and potential drivers of harm.
- Speaking to academic experts on digital assets and conducting a literature review of relevant published research papers.
- Quantitative analysis of existing data sources, including previous survey responses (e.g. the FCA's Cryptoasset research series), to develop further insight into factors affecting consumer demand.

Key themes which emerged from this background research – and helped shape the objectives, scope and approach for our qualitative research – are set out below.

Two broad groups of digital assets consumers: Insiders (High Information) and Outsiders (Low Information)

- Digital asset products and consumers differ substantially, which results in diversity of demand across products and the sector. However, two distinct groups of consumers can be considered; High Information and Low Information. This is a similar distinction as the 'Insider' and 'Outsider' groups identified in our commissioned qualitative research (see: Key themes and findings).
- High Information consumers are typically invested for the longer-term. They have more understanding of digital assets and use products primarily due to underlying technology potential. This group represents a minority of overall demand.
- Low information consumers tend to be newer to the market and may be attracted to digital assets due to excitement around prices and a 'fear of missing out'. Many also purchase digital assets as a speculative gamble which may or may not lose money. These consumers aren't as knowledgeable on the technology and as a result may be more vulnerable to harm. These consumers represent the majority of overall demand.

Consumers of digital assets share common demographics characteristics

- Our background research highlighted that demand for digital assets tended to be concentrated amongst younger users, particularly men under the age of 40.
- Our engagement highlighted that while older people are less likely to be involved, those who are involved are more likely to be actively engaged.

- Given the age demographic of consumers, digital asset holders may be more vulnerable to financial losses (as younger individuals tend to have lower levels of savings and higher outstanding credit balances).

Narrative plays an important role in driving demand

- Speculative returns and fear of missing out played a large role in driving demand. Interest in the technology and the narrative around digital assets replacing existing financial institutions usually comes after investment. The initial primary motivation is financial return.
- There's a role of community in shaping direction and demand. Wanting to belong to a certain group may play a role in demand for certain digital asset products such as Dogecoin or NFTs, where ownership relates more to social status than to a specific functionality.
- Potential of Web 3.0 is a key driver of demand.[20] Consumers may be purchasing digital assets with an expectation of them being increasingly important and functional in a Web 3.0 future.

Qualitative research approach and objectives

The FCA and ICO commissioned Ipsos to conduct qualitative research. Ipsos carried out one to one in-depth online interviews with 31 digital asset holders in the UK and follow-up ethnographic research with 5 of these digital asset holders. UK digital asset holders were defined as adults who, at a minimum, actively engaged with their digital asset portfolio and held the assets for at least one year in the last decade.

The qualitative research was commissioned to build a deeper collective understanding of the interviewed digital asset holders' views and attitudes towards digital assets and how they interact with these products. The qualitative research has focused on the potential benefits and harms digital assets can pose for consumers, from both a financial services regulation and data protection regulation perspective.

The **objectives of the research** have been to:

- Generate a detailed understanding of the risks, harms and benefits consumers may experience when purchasing digital assets.
- Understand how digital asset holders research and/or engage with these risks, harms, and benefits prior to purchase and how this subsequently affects their investment decisions.
- Identify key risks, harms and benefits to different digital asset holders' groups, from a financial services and data protection regulation perspective.

[20] For DRCF insights on Web 3.0 see: Insight paper on Web3 (publishing.service.gov.uk)

Research scope

To better understand consumer attitudes to digital assets, some key product and service focus areas were identified prior to the qualitative research for greater investigation and insight:

- **'Cryptoassets'** and the financial system products and services within cryptocurrency
- **'Distributed ledger technology' (DLT)**
- **'Non-fungible tokens' (NFTs)**
- **'Decentralised autonomous organisations'**.

Topics of interest in scope for qualitative research related to the:

- Motivating factors that drive the purchase of digital assets.
- Data protection, privacy and financial benefits sought by consumers.
- Consumer identified harms when purchasing digital assets, from both a financial and data protection perspective.
- Consumer awareness of potential risks when engaging with digital assets, both financially and in the context of data protection.
- Identified use cases of digital assets by retail consumers.
- Variation in consumer attitudes to and views of digital assets across consumers.

A discussion guide[21] was developed which divided the interview process into three key areas:

- Investment attitudes and habits.
- Early digital assets pre-purchase and early journey.
- Experience with digital assets.

The approach to conduct online in-depth interviews with discussion guides ensured that the interviews were conducted in line with the research objectives and that the information gained from participants was sufficiently detailed to enable insights to be gained.

Ethnographic research took place at the end of the interview process with 5 participants, allowing for a deep dive into their lived experience with digital assets. This provided an opportunity to understand how digital assets had impacted the lives of these participants in both a positive and negative way, in a real-world setting.

Limitations

The commissioned research was designed to discover what consumers think and why they hold the views they do about digital assets, however there were limitations:

[21] Discussion guide can be found in Annex 1.

- Qualitative research is reflective of the views of those selected to take part in the research, rather than being statistically representative of any population. This must be considered when interpreting the findings of this research.
- The project selected participants from the research pool by using an agreed qualification criterion.[22] For example, digital asset holders not actively managing their digital assets were excluded so this meant that there is a limit to the generalisability of the findings to the broader digital asset holder community. Furthermore, Ipsos sought to recruit participants from across the UK. However, the 31 qualifying participants meeting all recruitment criteria came from various parts of England.
- During recruitment for qualifying participants, there was a lower-than-expected number of digital asset holders with a financial vulnerability in the selection pool. While there is no recorded data known on the proportion of UK digital asset holders who are vulnerable, this research sought an even split of vulnerable and non-vulnerable digital asset holders, but out of the sample of 31, only 7 identified as vulnerable.[23]

Key themes and findings

Key themes identified by the commissioned research have been grouped into four key areas of interest, set out below. All of the quotes *(highlighted)* and findings are drawn from the Ipsos qualitative research interviews and ethnographic research.

Participant views of digital assets as an investment

'When I really started taking notice was when Bitcoin really went massive and it was all in the media. It was like, wow I didn't even realise that this had gone to such a point.'

'I just thought, well imagine finding the next Bitcoin, making that kind of money.'

- Digital assets were viewed as high risk and high reward by most of those interviewed, with cryptocurrencies being identified as the most popular digital asset. Mentioned benefits to engaging with these assets included potential financial returns, watching the value increase in 'real-time' and being part of a future technology.
- Most interview participants indicated that they hold onto their digital assets, while a minority would actively trade in these products. Only one participant indicated that their assets were ever used for real-world purchases.
- Risks identified by interview participants included human error when trading on exchange platforms, the real risk of financial lows and the understanding that there was limited regulatory protection.
- Most of those interviewed voiced the view that if something went wrong with their digital assets, they believed that the government, regulators and their bank would most likely not be able to assist (but this was not all participants).

[22] These qualification criteria can be found in Annex 1.
[23] According to the latest research published by the FCA, 52% of adults showed one of more characteristics of vulnerability. See: Financial Lives cost of living (Jan 2023) recontact survey | FCA

Participant views on the digital asset community

'It was mainly through word-of-mouth. A couple of my friends were getting into it (crypto).'

'To be honest, I didn't really do much research. We have like a group, a WhatsApp group where we all, we're talking about it.'

- Most interview participants had first heard of digital assets by word-of-mouth, suggesting the community that has built up around digital assets is a key part of the market landscape for these products.
- Being part of a community of like-minded individuals engaged with these assets was mentioned favourably by several interview participants.
- The research indicated that the digital asset holders interviewed exist on a spectrum, and can be split into community 'Insiders' and 'Outsiders'. The Insiders were more sceptical of tighter regulation and its impact on digital asset culture, while Outsiders were less involved in broader digital asset communities and less sceptical of regulation.
- Most interview participants purchased their digital assets on well-known exchange platforms and this decision was driven mostly by recommendations from peers.

Participant views on digital assets regulation

'They should introduce protection in case the provider goes away, at the same level as with the traditional accounts in banks.'

'They offer you regulation on one hand and what they're taking away from you is actually your privacy in return, the government would have access to that.'

- The proposition of regulation of digital assets was welcomed by some interview participants as this was seen as potentially providing greater investor protection, a reduction in digital asset market volatility and a perception that regulation could lead to an increase in asset value.
- Negative impacts of regulation mentioned by interview participants included the risk of increased tax liability, the loss of privacy and an increase in market instability as well as the generation of a false sense of financial security.
- There was a perception voiced by some interview participants that the introduction of regulation would go against the 'ethos of decentralised finance'.

Participant views on data security and privacy

'I'm aware of, just you know, my personal data is everywhere and I'm trusting (platform provider) to protect that.'

'The [data] security is not a big concern, it might be about 20% of my whole concern.'

- While most interview participants would highlight the financial risks involved in engaging with these assets, most had a low awareness of the potential data protection

and privacy implications these assets could pose. However, no participant indicated a disregard for personal information security or privacy in general.

- Most interview participants assume they can make a subject access request[24] to find out what information digital asset providers hold on them. Most participants also believe that information can be deleted at their request, thanks to data protection laws.[25]
- Often, where there was some awareness of potential privacy and data security risks, these would then be overridden in favour of the potential for large financial return for the majority of digital asset holders interviewed.
- Some interview participants compared sharing personal information in the course of purchasing a digital asset as being similar to engaging with online banking or making purchases on well-known online retailers.
- The majority of interview participants did not investigate the types of data protection or security a platform offered when purchasing a digital asset. Some participants held the view that they would not be targets of data security attacks, as the value of their digital assets was low compared to others.

[24] Right of access | ICO

[25]The right to erasure is also known as 'the right to be forgotten', and gives individual's a right to have personal data erased. The right is not absolute and only applies in certain circumstances. See: Right to erasure | ICO

5. FCA insights

Currently, firms' activities in relation to digital assets are regulated in the UK only for money-laundering, countering the financing of terrorism and financial promotion. The FCA and HM Treasury have indicated they intend to further regulate activities in the digital assets sector.[26] As regulation is introduced, we will look to balance between encouraging innovation while also effectively mitigating consumer harm. Our consumer research focused on understanding the key factors driving consumer demand for digital assets, the benefits they receive, and any the risks and harms they are exposed to because of participating in the market.

Demand concentrated as a speculative investment

Consumer views and attitudes

Ipsos research participants indicated that the primary motivation for purchasing digital assets was the opportunity to earn a high financial return on their initial investment. Consumer demand for digital assets has increased sharply in recent years, over a time period that has correlated with rising asset prices. The share of UK adults holding digital assets increased from 3% in 2020 to 10% in 2022, with much of this increase in demand likely explained by rising prices.[27] Increased accessibility has also likely played a role, with consumers now able to invest through their existing financial service providers or easy-to-use digital asset apps.

The research conducted by Ipsos indicated that an expected high return on investment could be the primary motivating factor for most consumers who purchase digital assets. Many consumers may see digital assets as an opportunity to earn high financial returns, which they believe they would not be otherwise able to, if relying on traditional financial products. Most consumers interviewed invest a small amount (relative to their income), which they are generally comfortable losing, but anticipate very high rates of return, with many referencing previous asset price growth (such as Bitcoin) as their expectation.

Many interview participants expressed that investment in digital assets is a fun and exciting activity which may suggest how demand may also be driven and sustained. Some participants interviewed reported feeling competent and a sense of community as a result of their investment. While the volatility of digital asset prices is often highlighted as a challenge, many participants saw this instead as a feature. Some also saw digital assets as a substitute for gambling, seeing it as a repeated game where they would eventually 'win' in the long-run through holding on to their asset while it hopefully increased in value.

'I like a gamble, I like the flutter… horse racing, it's very similar. You can do all the research that you want but you know, I don't go to the horse racing and gamble money that I can't afford. Same with crypto, so I'm willing to have that risk.'

[26] https://www.fca.org.uk/publications/discussion-papers/dp23-4-regulating-cryptoassets-phase-1-stablecoins and https://www.gov.uk/government/consultations/future-financial-services-regulatory-regime-for-cryptoassets
[27] https://www.fca.org.uk/publication/research-notes/research-note-cryptoasset-consumer-research-2023-wave4.pdf

For some research participants, demand was also motivated in part by consumer dissatisfaction with more traditional financial products and institutions. Much of the online media and discourse relating to digital assets has focused on perceived unfairness of the existing financial system (particularly relating to house prices and average salaries) and certain firms within the sector have used this dissatisfaction as a key marketing tool (i.e. Celsius: Banks are not your friends). Our background research suggested that demand in part could be explained by the low interest rate environment between 2009-2021, which limited returns to savers and pushed consumers to higher risk financial products. In this way, younger consumers may view digital assets as an alternative investment product.

'It's about generational wealth. Time goes so fast, doesn't it? We work and we earn a salary, but you want different streams of revenue. You don't just want a normal pay-check.'

In addition to demand being driven mostly by financial returns and increased accessibility, the qualitative research highlighted that many of the UK digital asset holders interviewed have a limited understanding of digital assets products. Among those interviewed, few demonstrated detailed knowledge of DLT, or of its innovation potential. Instead, most people interviewed talked more generally about digital assets being new and exciting, sometimes repeating the same examples of how they could be used, but without demonstrating a clear understanding of use cases or factors affecting prices. This may suggest that while digital asset holders are potentially engaged with the sector, this tends to come after their initial investment, and the primary driver of demand is speculation

Our qualitative interviews also highlighted that most digital asset consumers, despite self-identifying as savvy and risk-averse, tend to conduct minimal research prior to their investment.

FCA Insight

The qualitative research conducted by Ipsos indicates most digital asset holders interviewed were primarily motivated by expected high returns on their investment. This highlights the limited use cases for digital assets currently. Rather than buying for payment services or to diversify their investment portfolio, many participants interviewed are buying digital assets as a 'speculative bet' with the hope that the price of the asset will increase significantly over a short period of time. As digital asset prices can be highly volatile, this creates potential for harm if consumers have limited information and understanding of factors affecting prices for digital assets. Due to the high-risk nature of digital assets, consumers should be prepared to lose all their money.

Our qualitative research also highlighted the importance of the 'narrative' in shaping demand. For many interview participants, choosing to purchase digital assets was motivated not just by financial returns but also the idea they represent, in terms of an alternative to the traditional financial system. These interviewed consumers expressed that they felt part of a 'digital asset community', felt competent from seeing the value of their investment increase and saw digital assets as a way for them to build generational wealth. This suggests that

digital assets may represent an atypical investment, and consumers who choose to invest for these reasons may not respond to messaging and guidance in the same way as for more traditional financial products.

Consumers want protection to reduce the risk of them losing their assets

Consumer views and attitudes

In terms of changes consumers would like to see in the market, many research participants expressed a preference for increased financial protections which would protect them from losing access to their assets. These protections related to both firm failure and avoiding scams:

- **Protections against firm failure:** according to the Ipsos research, most UK digital asset holders interviewed rely on large exchanges to hold their assets and are typically not aware of alternatives for storage. Of the research participants who were aware of alternatives such as self-custody or cold storage, these interviewed participants often still preferred to rely on large exchanges for convenience. Some research participants recognised the risk in relying on large, unregulated exchanges to hold their assets, and pointed to the example of FTX failing as an example of how things could go wrong. These research participants would value a degree of financial protection and many would appreciate having reassurance that their assets are protected on exchanges (e.g. knowing that exchanges actually have the deposits/assets to support the assets deposited on them and insurance against loss of any assets held/stored on them).
- **Protection against scams:** Most UK digital asset holders interviewed were aware of how prevalent scams are within the market, either from experience, word-of-mouth or through learning about it on social media. Many interview participants also expressed the view that within the digital asset community, there is an emergent belief that 'rug-pulls' and 'scams' are part and parcel of the market volatility. Our wider background research highlighted a common theme of expecting people to 'Do Your Own Research' and putting the responsibility of avoiding the scam on the individual. However, most research participants welcomed the idea of protections to avoid the prevalence of scams, and stopping these products entering the market.

FCA Insight

In terms of the type of protection from harm digital asset consumers would like, many of those interviewed expressed a preference for protection similar to that provided for other investment products, with some directly referencing FSCS. Introducing protections can result in trade-offs and as stated previously, compensating consumers where they have chosen to engage in higher risk services or products (which may be appropriate in some, but not all, circumstances) may create the wrong incentives among consumers and firms.

Certain participants interviewed recognised that there would be trade-offs associated with increased protections, which could reduce their opportunity to earn high financial returns. The qualitative research highlighted diverging views across 'Insider' and 'Outsider' interview

participants in terms of attitudes towards increased protections. Some Insider participants, who are more involved in digital asset communities, expressed some concern that regulation would potentially reduce volatility within the market and the opportunity for them to earn outsized financial returns. In addition, some Insiders interviewed also expressed concerns that regulation was against the ethos of crypto, particularly as it related to decentralised finance.

'Regulation is kind of good to an extent, where you know the exchange is abiding by the rules… But that wasn't the purpose of cryptocurrency in the first place, to be regulated, that kind of goes against the ethos of bitcoin and cryptocurrency. It's supposed to be decentralised, so no government ruling over what happens with crypto.'

Outsiders interviewed, who are newer and invested primarily because of speculation, did not have strong views concerning the ethos or original purpose of digital assets and mostly welcomed the idea of increased financial protection.

Some evidence that consumers could be influenced by behavioural biases when investing in digital assets

Consumer views and attitudes

Across the interviews conducted by Ipsos, the FCA consider that many consumers expressed attitudes and expectations towards digital assets which the FCA finds were consistent with certain behavioural biases.[28] These behavioural biases could influence their decision-making in terms of how and when to invest and may result in sub-optimal outcomes for consumers.

'Optimism bias' refers to the tendency people have towards overestimating the likelihood of a positive event happening, and as a result, underestimate the likelihood of a negative event. Optimism bias is common in financial investing, particularly amongst retail consumers, who may overestimate the likelihood of earning a high financial return.

Within the context of digital assets, although most digital asset holders interviewed recognised the potential for financial loss, most also assumed that over time the value of their digital asset portfolio would continue to increase. The qualitative research highlighted how many participants often relied on previous price growth as an indication of future asset prices. The volatility of the market also played a role in setting expectations, with many viewing the large swings in asset prices as a normal function of the market. Similarly, among those interviewed, many also recognised the potential for scams, but saw these as less likely to affect them in the future, so long as they interacted with only reputable and established digital asset firms.

[28] For further FCA research on how consumers choose and use financial products, and how behavioural biases can lead to firms competing in ways that are not in the interests of consumers, see Occasional Paper: 1: Applying behavioural insights at the Financial Conduct Authority

'I think anyone that's willing to invest into things such as crypto and NFTs, due to the volatility and the unreliability of the market, is pretty much seen as someone who is risky. But obviously, we know your returns can be massive, which is why we do it.'

Across the interviews, many digital asset consumers exhibited a high degree of trust toward digital asset firms, despite them being unregulated. Most of those interviewed assumed that if they were to face problems with their digital assets, the platforms where their digital assets were purchased/are stored would be expected to offer help: most would contact them using their 'contact us' page. These interview participants expressed significant trust toward exchanges, which are mostly seen as trustworthy: their longevity, large user numbers and user-friendly interface contribute to this.

A further cognitive bias which the FCA consider to have been demonstrated by some of those interviewed by Ipsos is 'herding', which occurs when investors following others in their investment choices rather than conducting their own research and analysis. Within financial markets, herding can lead to large volatility separate from economic fundamentals, such as unfounded market rallies and significant sell-offs.

Many of the UK digital asset holders interviewed purchased assets based on word-of-mouth recommendations from friends or colleagues. Some participants saw digital assets not purely as an investment product, but also as an asset allowing them entry into a community and culture. For these investors, there is a belief in positivity, optimism, sense of community and trust in other consumers.

In addition to reliance on word-of-mouth recommendations, many digital asset holders interviewed also made strong use of social media and online forums for investment advice. Many interview participants mention that WhatsApp groups, often introduced through word-of-mouth, also function as platforms for knowledge sharing among friends while YouTube provides easily digestible information on the workings of digital assets.

FCA Insight

The aforementioned behavioural biases highlight risks consumers may be exposed to as a result of investing in digital asset products. Optimism bias may result in consumers underestimating the risk of financial loss when investing in digital asset products, while herding may push consumers towards higher risk products or scams, rather than conducting their own research. These biases together with a 'Fear of Missing Out' can also exacerbate volatility in the market, as during an upturn, consumers undertake excessive risk taking, while in the downturn it can result in fire sales and crystallising financial losses.

Within recent FCA publications, including Discission Paper 23/6: Regulating Stablecoins and Policy Statement 23/4: Financial Promotions rules for Cryptoassets, we outlined how these behavioural biases could lead to inefficient decision making by consumers and ultimately result in consumer harm. For example, rising prices for digital assets has led to a culture of optimism in the wider sector, and consumers may underestimate the likelihood of harm and engage in unintended or inappropriate levels of risk-taking. More generally it has been

observed that consumers considering purchasing high-risk investments (such as digital assets) may suffer from overconfidence, 'myopia' or 'herding', which can drive harm through consumers investing without understanding the risks, or without considering their long-term interests.

The qualitative research demonstrates evidence of these behavioural biases within the interviewed digital asset holders. As highlighted above, many of those interviewed had confidence that the value of their digital assets would continue to increase and saw themselves as unlikely to be affected by scams or fraud. These behavioural biases create a risk of consumer harm due to poor decision-making, and a potential role for increased regulation to improve outcomes for consumers.

However, the research also indicated that increased regulation could create risks and other downsides for consumers. The research has highlighted how financial returns, enhanced by the volatility of the market, were a key driver of demand for the digital asset holders interviewed. Furthermore, some consumers interviewed by Ipsos enjoyed the decentralised nature of digital assets and were happy to continue trading in the market unregulated. As such, while introducing regulation could help mitigate against certain harms, it could also shift demand and push consumers toward other High Risk Investments (HRI) or unregulated markets.

6. ICO insights

This joint consumer research with the FCA has allowed the ICO to hear about UK digital asset holders' views and perceptions of digital assets in their own words and from a broad financial and data protection perspective. Listening to how consumers may feel empowered by digital assets, and learning about what might concern them, deepens our understanding of data protection considerations and the harms they may experience. This helps inform where further ICO focus could support responsible and privacy-friendly innovation in this market. These areas of focus are set out below.

Promoting consumer understanding about information rights and enabling informed choices about how personal information is used

Consumer views and attitudes

Most research participants interviewed by Ipsos did not mention data privacy and security concerns spontaneously. When these subjects were raised for discussion, the majority of interview participants demonstrated a limited understanding of how blockchain technology worked, with most not aware that transactions data may be stored permanently on the chain, or that transactions might be visible to anyone with access to that chain.

According to the Ipsos qualitative research, there was a general assumption among most participants interviewed that they could exercise their information rights with digital asset platforms in the same way they can with a traditional bank, and they saw similarities concerning the information they share with a bank and these platforms. Some interview participants would also equate digital asset engagement as having the same, or at least similar, data security and privacy implications as engaging with any other online activity such as shopping with an online platform.

'Loads of different things that we're not told about, data stored permanently in the NHS, data stored permanently in, other things. I'm not concerned about that. My bigger concern will be [digital platform], they know where you are, who you are, what you're doing, what you're buying, what you're selling, your bank account details.'

'I understand a little bit about data protection and there's nothing that should be stored permanently.'

ICO Insight

Consumer awareness and understanding of the benefits and risks to their personal data and privacy is shaped by the information they receive about how their personal data is processed. Article 5(1)(a) of UK GDPR, the 'Transparency Principle'[29], requires organisations processing personal data to be clear, open and honest from the start about how and why personal data is processed. Under Articles 12, 13 and 14 of UK GDPR, people also have the 'Right to be Informed'[30] about the collection and use of their personal data. Consumers must

[29] Principle (a): Lawfulness, fairness and transparency | ICO
[30] Right to be informed | ICO

be provided privacy information that is easily accessible and easy to understand at the outset, so they have all the information they need to decide about whether to proceed with data processing. Providers of digital assets must ensure that people are able to make an informed decision about data processing taking place, and any associated risks, when engaging with their technology and services.

There is potential for novel data protection issues and risks for people engaging with digital assets, for example, concerning the possibility people could be identified from any pseudonymised information on a public blockchain, and face challenges exercising their 'Right to Erasure' or 'Right to Rectification'.[31] The ICO's Accountability Framework supports firms to assess how they are effectively informing consumers about data processing in line with their legal obligations.[32] It sets out ways to meet ICO expectations for giving individuals information about their rights and how to exercise them, as well as ICO expectations for meeting transparency requirements through privacy information.

Proactively manage and mitigate the risks of data protection harms

Consumer views and attitudes

The Ipsos qualitative research showed that most participants do have some awareness of data privacy and security risks in their everyday lives. For example, many participants interviewed highlighted risks they saw from general internet use. This could indicate that digital assets holders are more attuned too and concerned about these harms than the wider population. Previous general ethnographic consumer research recently commissioned by the ICO revealed that these research participants often do not identify personal data risks, and may be unaware of latent or abstract privacy harms.[33]

In the minority of cases, where data security and privacy concerns about digital assets were spontaneously mentioned by those interviewed by Ipsos, concerns were focused on vulnerability to online scams and the possibility of identity theft because of hacking. Most interview participants did not investigate the specific types of data protection or security risks a digital asset type or platform posed.

'I think the biggest risk is that I'm going to lose all my money doing bad transactions rather than (the risk of) someone going to hack my account.'

'I was a bit worried actually (when I gave my information to [crypto platform]), because you do think um, oh no, like they have this information, but then because so many people, I guess recommended it and used it, it gives you a level of feeling like, oh it might be okay.'

ICO Insight

Most of the digital asset holders who took part in the qualitative interviews and the ethnographic research demonstrated a high tolerance and acceptance of risk. It is, however,

[31] Right to erasure | ICO; Right to rectification | ICO.
[32] Accountability Framework | ICO
[33] ICO Data Lives Year 1 Report (ico.org.uk)

also important to recognise that this attitude to risk will not necessarily be the case across all consumers, particularly if digital assets become more widespread and popular in future.

Crucially, the possibility of a higher risk appetite from consumers does not absolve firms from upholding their data protection obligations. Firms providing digital asset products and services to consumers must ensure that they meet their obligations relating to 'data protection by design and default' (Article 25 UK GDPR), with organisations required to put in place appropriate organisational and technical measures to implement the data protection principles[34] effectively and safeguard individual rights across all personal data processing activities.[35] Firms should also consider how **'Privacy Enhancing Technologies' (PETs)** can assist in complying with their data protection by design obligations.[36] Upholding these obligations is crucial to putting privacy at the heart of responsible innovation, to the benefit of people using an innovative technology such as DLT based digital assets.

'Data Protection Impact Assessments' (DPIAs) are also a helpful risk management tool that can support the design and implementation of novel technology. The ICO's guidance sets out what to consider when assessing whether processing is high risk and legally requires a DPIA prior to its commencement. Considerations include whether:

- there is processing of sensitive or highly personal data;
- the use of technology involves novel forms of data collection and usage; and
- the processing in itself prevents or makes it more difficult for people to exercise a right, including their information rights.[37]

Process personal data in a way that is fair

Consumer views and attitudes

Most participants interviewed by Ipsos viewed digital assets as high risk, high reward. Privacy and data security issues were not top of mind for most participants, and the technology and systems underpinning digital assets were not seen as a risk (albeit that specific knowledge of how blockchain works – and its implication for personal data – was very limited). According to the Ipsos qualitative research, there was a sense of acceptance among many that online activity in general is inherently risky, with digital assets presenting a similar level of risk to other online activity.

'A few of my friends were saying they bought a particular crypto and then they sold it and they made a bit of money so I just kind of piggy backed off the back of what they were doing because I didn't know what I was doing.'

[34] The data protection principles are: a) Lawfulness, fairness and transparency; b) Purpose limitation; c) Data minimisation; d) Accuracy; e) Storage limitation; f) Integrity and confidentiality (security); and g) Accountability. See: A guide to the data protection principles | ICO
[35] Data protection by design and default | ICO
[36] PETs link closely to the concept of privacy by design and are a means of implementing data protection by design on a technical level. See: Privacy-enhancing technologies (PETs) | ICO
[37] DPIAs can help anticipate, identify, record and minimise data protection risks incurred during processing. This includes compliance risks, but also broader risks to the rights and freedoms of individuals. Completing a DPIA is a legal requirement where data processing is likely to result in a high risk. See: Data protection impact assessments | ICO

'I mean I don't have a problem with it (transactions data being stored permanently and visible on the blockchain) because it doesn't identify, it's you know, it says who's transferred what from where and how much for, and you can obviously find out how much money, somebody has in a certain wallet, but you don't really know who that person is.'

ICO Insight

Even if digital asset consumers may generally have a higher risk appetite regarding use of their personal data, it remains the case that – under data protection law – personal data processing must always be fair to people, and people's information rights must be respected. Upholding these standards provides confidence to consumers and is crucial to responsible innovation that respects privacy, prevents data protection harms and fosters trust.

The 'Fairness Principle'[38] provided for in Article 5(1)(a) of UK GDPR, means that those handling personal data must not do so in a way that is unduly detrimental, unexpected or misleading to the individuals concerned. ICO guidance on fairness notes that in order for an organisation to assess whether or not they are processing personal information fairly, they must consider how it affects the interests of the people concerned, as a group and individually. In particular, organisations should only handle personal data in ways that people are reasonably expecting, and ensure individuals are treated fairly when they seek to exercise their rights over their data. This ties in with obligations to facilitate the exercise of individuals' rights.

As noted in the ICO's 2022 Tech Horizons report, organisations exploring innovations in decentralised finance are invited to work with the ICO's innovation services such as our Regulatory Sandbox, to help ensure data protection is being engineered into these technologies.[39]

Furthermore, innovators with a query that goes beyond data protection, and spans the regulatory remits of multiple DRCF member regulators, can lodge this with the recently launched DRCF AI and Digital Hub pilot service.[40] More information on this service can be found on the DRCF's website.

[38] Firms must be able to demonstrate how they are complying with the principle of fairness, as well as all other data protection principles, as part of their broader accountability requirements under Article 5(2) of UK GDPR. See: Principle (a): Lawfulness, fairness and transparency | ICO; Guide to accountability and governance | ICO

[39] ICO Innovation Services | ICO

[40] The DRCF launches informal advice service to support innovation and enable economic growth | DRCF

7. Conclusion

Value of this consumer research

The qualitative research commissioned by the FCA and ICO – through the DRCF – focused on deepening our knowledge of consumer attitudes towards digital assets. It did this by gaining real-life insight into the experiences that research participants have when engaging with this technology and community. It has strengthened the FCA's and ICO's collective understanding of how our data protection and financial services regulation can work together to support consumers who engage with digital assets.

Areas of FCA and ICO understanding

Digital assets technology poses some unique benefits, and challenges. The nature of the distributed ledger technology that supports decentralised finance systems has the potential for consumers to access innovative disintermediated financial products. However, this novel technology can also pose potential harms, such as exposing personal data, presenting challenges for people to exercise their information rights, risk of high price volatility or consumers losing access to their assets.

Transparency will support consumer understanding, ensuring they are aware of the benefits and risks of digital assets. Transparency of information and supporting consumer understanding is a shared objective of both the FCA and the ICO. The FCA Consumer Duty requires firms to ensure their communications meet the information needs of consumers while transparency of personal data processing activities is a foundational principle of data protection law. High standards of transparency about an investment or data processing is critical to consumers understanding the potential benefits and risks when engaging with digital assets.

Fostering consumer trust is crucial to the continued adoption and growth of digital assets. Consumer trust underpins financial transactions and investment decisions. Further development and adoption of digital assets in the future will depend on consumers trusting that their investment and their personal data will be treated appropriately. Both financial services and data protection regulation provide firms with a framework that can guide product development, helping to foster this consumer trust.

Next steps

The recently published 2024/25 DRCF Workplan includes a commitment for the FCA and ICO to continue to collaborate to deepen our shared understanding of consumers' attitudes towards digital assets. Our planned activities over the next year are two-fold:

- Engage with the digital asset industry and other interested stakeholders on the regulatory insights gained from our joint consumer research on digital assets.
- Work together to align future ICO guidance on data protection and distributed ledger technologies (DLT) and FCA work on Decentralised Finance (Defi) and Tokenisation.

Stakeholders interested in engaging with us about these activities can get in touch at:

DRCF-DigitalAssets@fca.org.uk

Annex 1 – IPSOS Technical Note and Discussion Guide

Technical note

On behalf of the FCA and ICO, Ipsos carried out one to one qualitative interviews, via Microsoft Teams, with a sample of 31 digital asset holders in the UK, who actively engage with their digital assets and have held them for a sustained period of at least a year in the last decade. The fieldwork was carried out between December 2023 and January 2024 by trained qualitative moderators in accordance with the MRS Code of Conduct.

Participants chose to participate in the research, and they were screened by Ipsos approved recruiters from criteria to provide a cross section of digital asset holders in terms of age, gender, educational attainment, portfolio size, location, digital assets held/involved in (among cryptocurrencies, NFTs, DAOs) and timeframes for when they acquired their digital assets (all had had their digital assets for a sustained period of at least a year in the last decade).

Recruitment also aimed for representation of the spectrum of vulnerability across four key drivers of health, life events, resilience, and capability, as outlined by the FCA. The qualitative research aimed for an even split of vulnerable and non-vulnerable digital holders. However, this was not achieved: in total, out of a sample of 31, 7 identify as vulnerable. This might suggest low vulnerability among digital asset holders who actively engage with their digital assets. This recruitment outcome suggests there might be an opportunity for future research, to specifically explore the behaviour of vulnerable people within the digital asset holder community. For this research, Ipsos sought to recruit participants from across the UK. However, qualifying participants meeting all recruitment criteria came from various parts of England.

In addition to the qualitative interviews, Ipsos conducted ethnographic research with five participants, reconvened from the qualitative interviews stage. Participants for the ethnographic research were selected based on their interest in participating in the research, and their ability to represent the experience of digital asset holders more broadly. Ethnographic research took place for two weeks in January 2024, and it involved short online interviews and video tasks, submitted to Ipsos online.

Ipsos was responsible for the study design, sample design, recruitment, discussion guide design, moderation, interpretation, and reporting. The FCA and ICO are responsible for the writing of this paper, having analysed the research report provided by Ipsos.

Qualitative research was considered to be the most appropriate methodological approach to support and explore in more depth the range of views of UK digital asset holders on the perceived risks, harms, and benefits of holding digital assets. Qualitative research is designed to be illustrative in nature and tells us what people think and why they hold these views. However, qualitative research is reflective of the views of those selected to take part in the research rather than being statistically representative of any population and does not look to produce statistics. This needs to be taken into account when interpreting the research

findings. In addition, it is important to bear in mind that qualitative research deals with perceptions rather than facts (though perceptions are facts to those that hold them).

Discussion guide

OVERVIEW OF THE DISCUSSION FLOW

5 mins	**Introduction and warm-up**: - Get to know the participant, ensure they are comfortable with the interview format - Introduce Ipsos, moderator & MRS code of conduct
10 mins	**Investment attitudes and habits:** - Build an understanding of the participant's attitudes to investing and using assets, their investment history and current investing habits
20 mins	**Early digital assets pre-purchase and early journey:** - Explore the participant's motivations to engage with digital assets, research conducted, and pre-purchase journey (personal information privacy and freedoms, as well as financial motivations) - Explore their understanding of risks, harms and benefits at this early stage across financial and data protection matters.
20 mins	**Experience with digital assets:** - Explore the participant's current use of digital assets, exploring their understanding of risks, harms and benefits and how this has evolved over time
5 mins	**Wrap up:** - Thank participant for their time - Provide an opportunity to wind down and a platform for any final thoughts and questions

Moderator Notes: *Black font, italics*

Moderator Script: Black font

I. WARM UP & INTRODUCTION 5 MINS

Objective: Introduce the moderator and participant, thank participant for taking part, explain the research process and guidelines

MODERATOR INTRODUCTION

- Thank the participant for taking part
- Introduce Ipsos and yourself (professional researchers). Please discuss any relevant research Codes of Conduct (e.g. MRS, ESOMAR)

- Mention that client is viewing the session (if applicable) – completely confidential, they are here to hear what you have to say, won't be interacting directly with them
- Purpose of the research; to explore your thoughts and experiences with digital assets like cryptocurrencies, NFTs etc
- Understanding your personal views around personal data protection and your information rights in the context of digital assets
- Explain we are professional researchers, not experts in the field of digital assets, so might ask questions that seem basic: this is to help us build our understanding
- Go over rules of the session – not to take calls on the mobile/mobile off, to make sure they are comfortable, notifications disabled so that we are not disturbed, camera on. Right to withdraw at any point, if they wish to
- Seek audio and video recording permission – press record after this is given
- Note 1-hour duration
- Explain that we are interested in their personal opinions and experiences, there are no 'right' or 'wrong' answers. This is a judgment-free zone and a safe space for them to share
- Topic might be sensitive: thank participants for being open, ask them to let us know if they feel uncomfortable
- Explain that this discussion will remain confidential and that they will remain anonymous

RESPONDENT INTRODUCTION

- Please tell me a bit about yourself:
  - First name, what you do, and a fun fact about you

II. INVESTMENT ATTITUDES & HABITS 10 MINS

Objective: To explore attitudes to investing and gain an understanding of the participant's investment history and current habits

- Today, we'll be spending some time talking about your attitudes and experiences with using digital assets products/services. We'll be focusing on digital assets like cryptocurrency, NFTs and so on, but before we do, I'd love to know a bit more about the issues you took into account when deciding to use the products more broadly.

- To get us started, what role do investments play in your life? What do they give you?
- What one word would your friends and family use to describe the type of investor you are? *Moderator to probe as needed*
- Generally, how do you go about choosing what types of assets to use/invest in?
    - What kind of things are important to you when going through that decision-making process? What are your key criteria when you choose your investments/assets?
    - What kind of things are not very important? How come?
    - *Moderator to listen out for mentions of data privacy and interest in how distributed ledger tech provides benefits/barriers in relation to this data: where is this placed and why?*
- Let's look back at your investment journey. When did you first start investing?
- What types of assets did you get first? How did you land on those types of assets/investments? *Listen out for the role of word-of-mouth, social media, professional advice etc.*
    - *Probe on awareness of digital assets at the time: were they aware of digital assets when they first started investing?*
    - *If they were aware of digital assets but chose not to invest in them at the time – how come?*
    - *What information did they take into consideration which made them decide against using/ investing in a digital asset (seeking data protection, privacy, information rights angle/view/perspective)?*
- And what types of investments and assets do you currently hold? What type of assets do you have/use?
    - *Moderator to probe for each type of asset/investment:* What made you gravitate towards those?
- *If participants use both digital and non-digital assets:* how come? What is the benefit of using both? *Moderator to probe to establish if the participant uses digital or non-digital assets more and the rationale behind this, exploring consumer perception on data protection and privacy benefits of digital assets compared to traditional finance institutions*
- Roughly speaking, which of these do you use more? How come?
- In your view, what's a 'safe' investment? What's a 'risky' investment? No right or wrong answers here, and these definitions can vary from person to person – *seeking to understand risk/benefit analysis by the participant and which weighs more when making an investment decision – better returns/personal data security for example.*

III. DIGITAL ASSETS PRE-PURCHASE & EARLY JOURNEY 20 MINS

Objective: To explore participant's motivations to engage with digital assets, research conducted, and pre-purchase journey, exploring their understanding of risks, harms and benefits

- Let's zoom into your experience with the digital assets you mentioned, like (*XYZ – list digital assets the participant has mentioned*).
- *Moderator to probe for each digital asset. If multiple assets are listed, moderator to prioritise those the participant has had for over a year (moderator to have checked screener responses prior to the interview):*
    - When and where did you first hear about (this type of asset)? *Moderator to probe, if needed: did you see any advertising or promotions prior to purchase? What were those about, and what did you do after seeing those, if anything?*
    - How did you get your (digital asset)? Walk me through it. *Moderator to probe as needed – e.g. if digital asset was received as a value-add*
    - What made you gravitate towards (this type of asset)?
    - What did you think would be good about this type of asset before getting it? What kind of benefits did you think this type of asset would give you? *Moderator to listen out and probe for perceived benefits: e.g. financial incentives/increases in value, access to products/investments they wouldn't be able to access differently, perceived control over their personal data, social status/'cool points', ability to purchase anonymously, other)*
    - What did you think would be better about (this type of asset) vs. something you get from a traditional bank, if anything?
    - What about the downsides: what kind of things did you think might be less good about (this type of asset) vs. something you get from a traditional bank, if anything? *Listen out and probe around any risks/harms, from a financial or data protection perspective*
    - How did you feel about the possibility of using (this type of asset)?
    - What types of questions did you have? Anything you were unsure or unclear about?
    - What kind of concerns did you have, if any? *Moderator to listen out and probe as needed: lack of regulation, scams on social media etc.*
    - And how would you rank those concerns, from most to least important to you personally? How come?
    - How did you address those concerns, if at all?
    - Walk me through what happened next: what type of research did you do, if any?
    - What kind of sources did you go to for information?
    - How credible did you feel these were, if at all, really? How come?
    - Who did you discuss this with, if anyone?

- How long was it between you finding out about (this type of asset) and first using it/investing in it?
- How did you go about deciding how much to spend on this? Walk me through that decision-making process.
- What kind of concerns did you have before first using (XYZ)? How did you resolve this?

- Are there any digital assets (e.g. NFTs etc.) that you had before, that you no longer hold/use/invest in? How come*? Moderator to probe on what drove this change in behaviour – e.g. personal information or data security considerations if a participant opted to withdraw investment in a digital asset?*

IV. EXPERIENCE WITH DIGITAL ASSETS 20 MINS

Objective: To explore the participant's current use of digital assets, exploring their understanding of risks, harms and benefits and how this has evolved over time

- Thanks for all your feedback so far, really appreciate your openness.
- Thinking about the present then, you've got (*XYZ – list digital assets the participant has mentioned*). Let's talk about those a bit more. *Moderator to explore for each digital asset – focusing on those the participant has had for over a year (moderator to have checked screener responses prior to the interview):*
  - First things first: after deciding to use (XYZ), how did you go about it? Walk me through the process: *moderator to probe as needed on potential concerns about the technology, use of data and financial risks along the way*
  - Where did you get your (XYZ digital asset)? How come? What was the benefit of getting it this way?
  - How would you sum up what a (XYZ digital asset) is and how it works to someone who's never heard of it before?
  - To what extent do you trust those firms to look after and return your crypto assets? How come?
  - If decentralised exchanges are mentioned: what factors are most important when selecting an exchange (fees/costs, product choice, user experience, regulated status, reputation, privacy etc)
  - How do you use this? What do you do with your (XYZ digital asset)? By this, I mean whether you trade, hold on to it, something else? *Probe on how digital assets are used – e.g. purchasing crypto to trade regularly in the markets, to hold for long-term investment purposes, something else?*
  - You've had (XYZ digital asset) for X amount of time. What is it that keeps you using it/investing in it?

- How has this changed over time, if at all? What is it that prompted this change?
- What do you get out of having (XYZ digital asset)? What's the benefit of investing in/using something like this, in your experience? *Probe on whether perceptions have changed over time: if so, how come?*
- Have you heard of Staking? If so have you used it and why/ why not?
- How do your store your crypto assets? E.g. Self-Custody/ Third Party/ Exchange/ Tech Provider? What are the pros and cons of this?
- Broadly speaking, if you were uncomfortable or unsure about anything related to your (XYZ digital asset), who would you go to for support, advice or information? How come?
- Has anything ever gone wrong when it comes to your (XYZ digital asset)? If so, what did you do? Who did you go to for help/support, if anyone?
- And if something were to go wrong with your (XYZ digital asset), who might offer you support, if anyone? *Moderator to probe to understand the participant's perceived level of protection and who would offer it – e.g. FSCS, ICO, FCA, government, etc.*
- What is it that tells you they'd be able to support you with this?
- If you wanted to find out what personal information the providers of (XYZ digital asset) hold on you, how would you go about it? What if you wanted the personal information they hold on you deleted – how would you do that? *Moderator to probe on who they would contact and how.*
- To what extent is this a consideration for you when deciding to use this (type of digital asset), if at all, really? How come?
- You've had your (XYZ digital asset) for over a year. What are the potential risks to having (XYZ digital asset), if any, in your experience? *Moderator to first listen out on potential risks and harms and probe on those mentioned organically.*
- *Moderator to probe selectively on risks the participant did not list as risks/harms they were aware of prior to using/ investing in this specific digital asset earlier on:* it sounds like you became aware of this after investing in this. How do you feel about that?
- In hindsight, is there anything you wish was clearer to you about those risks earlier on? *Probe as needed.*

- *If not mentioned, moderator to then probe at the end (once all digital assets have been covered):*
  - With digital assets like (XYZ digital assets mentioned), transactions data could actually be stored permanently on the chain exactly as they are. How do you feel about that? *Moderator to probe: to what extent is this a concern, if at all? If not, how come? Moderator to probe, if needed: Does the participant think that this is a benefit or downside when compared to a traditional financial institution when they could more easily exercise their data protection rights?*

- This might also mean that you can be re-identified based on your transaction data. What are your thoughts on this? *Moderator to probe: to what extent is this a concern, if at all? If not, how come?*
- Your transactions might also be visible to anyone with access to the chain. How do you feel about that? *Moderator to probe: to what extent is this a concern, if at all? If not, how come?*

- Currently, digital assets like cryptocurrencies are less regulated than other types of investments: at the moment, there are only regulations about making sure that crypto firms comply with anti-money laundering and counter-terrorism legislation. There are also regulations to ensure only authorised people can communicate an invitation to engage in investment activity. How do you feel about that?
  - What if digital assets like those were to be more regulated, to protect against things beyond money laundering, terrorism and unauthorised people encouraging others to invest? What would you make of that?
  - What might be good about that, if anything?
  - What might not be good about that, if anything?
  - If these were to be more regulated, what would that mean to you personally, in terms of how you invest in assets like those? *Moderator to probe on any anticipated behaviour change: e.g. using companies that operate outside of the UK etc.*

V. WRAP UP 5 MINS

Objective: To wrap up the discussion and provide participants with a platform for any final thoughts and questions

- Thanks again for all your help today, your feedback has been extremely valuable. We're close to the end of our discussion, but before we wrap up, I have a few final questions for you.
- Taking everything we've talked about today into consideration, what is the number one concern you might have about digital assets like (XYZ) that you'd like to have addressed?
- What would you say a regulator/the government might need to do differently to ensure you are protected when you invest in digital assets?
- Thank you for your time and thoughtful responses today. As part of this research, there is also a follow-up stage, which would involve completing some short activities online. Might you be open to participating to that? *Moderator to note yes/no response.*
- *Moderator note: if participant has expressed negative emotions during the interview, offer to share relevant resources for support.*

Thank and close.

Glossary

This glossary should not be considered to be an indication of regulatory definitions. The definitions and explanations contained herein are only to clarify references to the associated concepts in the paper.

Anonymous data	Anonymisation of data means that steps have been taken to strip data of elements which means that individuals are no longer identifiable and cannot be re-identified by any means reasonably likely to be used (i.e. the risk of re-identification is sufficiently remote). Personal data which has been anonymised is not subject to UK data protection law.
Blockchain	The most popular and widely known application of distributed ledger technology (DLT). Each transaction processed in a blockchain carries a cryptographic hash of the block before it, seeking to provide a permanent, secure, unalterable chain of data which can be verified.
Cryptoassets	Cryptoassets are cryptographically secured digital representations of value or contractual rights that use some type of distributed ledger technology (DLT) and can be transferred, stored or traded electronically.
Cryptographically secured	The process of securely writing, transmitting and reading enciphered text in such a way that adversaries are unable to decrypt and read it.
Decentralised autonomous organisations (DAOs)	DAOs are organisations that decentralise decision making, replacing traditional centralised decision making with token-holding users voting on proposed changes. DAOs use decentralised ledger technologies (DLTs) to encode the decisions and rules of the DAO into Smart Contracts.
Decentralised Finance (DeFi)	Decentralised Finance (DeFi) is an umbrella term for a variety of financial applications such as lending, borrowing, tokenisation and trading of digital assets developed using a decentralised technology such as DLT. It is a peer to peer financial network that works separately from the legacy systems such as banks, traditional exchanges or hosting providers. This technology aims to forgo intermediaries in a traditional financial system to provide a more open financial system without any central authority.
Digital assets	Digital assets are uniquely identifiable, cryptographically secured assets which can be created, transferred, stored, or traded

	digitally. The technology used to create these assets and the characteristics of each asset can vary greatly.
Distributed ledger technologies (DLT)	A distributed ledger is a type of append-only data storage mechanism in which data is stored at multiple locations on a shared network. A distributed ledger will often store data in the form of a blockchain (a type of data structure consisting of blocks of data with a strict sequential ordering) but not all distributed ledgers use a blockchain as their underlying data structure.
Non-fungible token (NFT)	A unique digital identifier that cannot be substituted, changed or erased and is typically used to assert ownership of a virtual asset or status on a blockchain.
Personal Data	Personal data means any information relating to an identified or identifiable natural person. An identifiable natural person is one who can be identified, directly or indirectly, in particular by reference to an identifier such as a name, an identification number, location data, an online identifier or to one or more factors specific to the physical, physiological, genetic, mental, economic, cultural or social identity of that natural person.
Privacy Enhancing Technologies	Privacy-enhancing technologies or PETs are technologies that embody fundamental data protection principles by minimising personal data use, maximising data security, and empowering individuals.
Pseudonymised data	Pseudonymised data is data that cannot be attributed to a specific individual without the use of additional information. Pseudonymisation is a technique that replaces or removes information in a data set which identified the individual. Where this is applied it means that individuals are not identifiable from the dataset itself, but can be identified by referring to other information held. Pseudonymised data is therefore still personal data and remains within the scope of UK data protection law.
Smart Contracts	Smart contracts are self-executing programs on the blockchain which trigger when certain conditions are met (for example, automatically providing payment when goods are sent), and are used to control and document actions resulting from those conditions.
Stablecoins	A category of cryptoassets that aim to maintain a stable value relative to a specified asset, or basket of assets, providing perceived stability when compared to the high volatility of unbacked cryptoassets.