

**Bank of England**

# Financial Stability in Focus: Cryptoassets and decentralised finance

**Financial Policy Committee**

March 2022



# Financial Stability in Focus

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The primary responsibility of the Financial Policy Committee (FPC), a committee of the Bank of England, is to contribute to the Bank of England's financial stability objective. It does this primarily by identifying, monitoring and taking action to remove or reduce systemic risks, with a view to protecting and enhancing the resilience of the UK financial system. Subject to that, it supports the economic policy of Her Majesty's Government, including its objectives for growth and employment.

The Financial Stability in Focus sets out the FPC's view on specific topics related to financial stability. It complements the Financial Stability Report, which is published twice a year, and sets out the FPC's overall view of the outlook for UK financial stability, including its assessment of the resilience of the UK financial system and the main risks to UK financial stability, and the action it is taking to remove or reduce those risks.

## The Financial Policy Committee:

Andrew Bailey, Governor

Jon Cunliffe, Deputy Governor responsible for financial stability

Ben Broadbent, Deputy Governor responsible for monetary policy

Dave Ramsden, Deputy Governor responsible for markets and banking

Sam Woods, Deputy Governor responsible for prudential regulation

Nikhil Rathi, Chief Executive of the Financial Conduct Authority

Colette Bowe

Jon Hall

Anil Kashyap

Elisabeth Stheeman

Carolyn Wilkins

Charles Roxburgh attends as the Treasury member in a non-voting capacity.

The report was finalised on 9 March 2022. This document, unless otherwise stated, uses data available as at 2 March 2022.

PowerPoint™ versions of the charts in this document and Excel spreadsheets of the data underlying most of them are available at [www.bankofengland.co.uk/financial-stability-in-focus/2022/march-2022](http://www.bankofengland.co.uk/financial-stability-in-focus/2022/march-2022).

For the avoidance of doubt, the Financial Stability in Focus is not intended to satisfy the requirements of Section 9W of the Bank of England Act 1998.

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Cryptoasset technology is creating new financial assets, and new means of intermediation. Many services now facilitated by this technology mirror those available in the traditional financial sector, including lending, exchange, investment management and insurance. That activity is currently concentrated in cryptoassets, and is small compared to that of the overall financial sector.

However, if the pace of growth seen in recent years continues, interlinkages with the traditional financial sector are likely to increase. Moreover, the new technology has the potential to reshape activity currently taking place in the traditional financial sector, through either the migration of that activity or the widespread adoption of the technology.

The technology underpinning this innovation could bring a number of benefits including lower transaction costs, higher payment system interoperability and more choice for users. Those benefits can only be realised and innovation be sustainable if it is undertaken safely and accompanied by effective public policy frameworks that mitigate risks and maintain broader trust and integrity in the financial system. As such, the global and domestic regulatory frameworks will need to adapt.

The Financial Policy Committee (FPC) aims to ensure that the UK financial system is prepared for, and resilient to, the wide range of risks it could face. With respect to cryptoassets, their associated markets and activities (such as cryptoasset derivatives), including decentralised finance (DeFi) – henceforth ‘cryptoassets and DeFi’ – this means the FPC will seek to ensure that risks to financial stability arising from those markets and activities are mitigated. It will do so by undertaking regular assessments of both the potential risks posed by cryptoassets and DeFi, and the regulatory initiatives that are currently under way to mitigate them, as well as making Recommendations where appropriate.

The FPC continues to judge that direct risks to the stability of the UK financial system from cryptoassets and DeFi are currently limited, reflecting their limited size and interconnectedness with the wider financial system. However, if the pace of growth seen in recent years continues, and as these assets become more interconnected with the wider financial system, cryptoassets and DeFi will present financial stability risks.

As cryptoasset technology grows in importance, risks could potentially arise from: interlinkages between cryptoassets and the traditional financial sector; new forms of financial and operational risk for financial institutions; a growth in activity outside of the existing regulatory perimeter; and challenges in regulating new forms of entities and business models.

The FPC is monitoring a number of channels through which risks to financial stability could arise: risks to systemic financial institutions; risks to core financial markets, risks to the ability to make payments, and the impact on real economy balance sheets.

The FPC is of the view that as cryptoassets and DeFi grow and develop, enhanced regulatory and law enforcement frameworks are needed, both domestically and at a global level. These frameworks should address developments in cryptoasset markets and activities, to encourage sustainable innovation, and maintain broader trust and integrity in the financial system.

Where crypto technology is performing an equivalent economic function to one performed in the traditional financial sector, the FPC judges this should take place within existing regulatory arrangements, and that the regulatory perimeter be adapted as necessary to ensure an equivalent regulatory outcome. This would likely require the expansion of the role of existing macro and microprudential, conduct, and market integrity regulators, and close co-ordination among those regulators. The FPC will continue to assess and advise on the regulatory perimeter, consistent with its statutory responsibilities. Any decisions on adapting the regulatory perimeter and framework would be for the Government to take.

The FPC supports international work on these issues, including the Financial Stability Board (FSB) in its role co-ordinating the international approach to unbacked cryptoassets. CPMI-IOSCO has clarified that stablecoin arrangements that perform systemically important payment system functions should meet the existing Principles for Financial Market Infrastructures (PFMIs) and is consulting on how the PFMIs should apply to such stablecoin arrangements. Work is also under way internationally to clarify the treatment of cryptoassets under the prudential regime for banks.

Domestically, the FPC supports the work of the HM Treasury-Financial Conduct Authority (FCA)-Bank Cryptoassets Taskforce on assessing the regulatory approach to unbacked cryptoassets and associated markets.

Alongside the system-wide view contained in this Financial Stability in Focus report, the Bank is publishing a [summary of responses](#) to its [Discussion Paper on new forms of digital money](#). The FPC also welcomes the [Dear CEO letter](#) issued by the Prudential Regulation Authority (PRA) reminding firms of their obligations with respect to cryptoasset exposures, and the [FCA statement](#) reminding firms of their obligations when interacting with or exposed to cryptoassets.

# 1: The role of cryptoassets and decentralised finance in the financial system

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**This Financial Stability in Focus report provides an assessment of the role that cryptoassets and associated markets and activities, including DeFi ('cryptoassets and DeFi') currently play in the UK and globally, and how this could develop as these markets continue to evolve.**

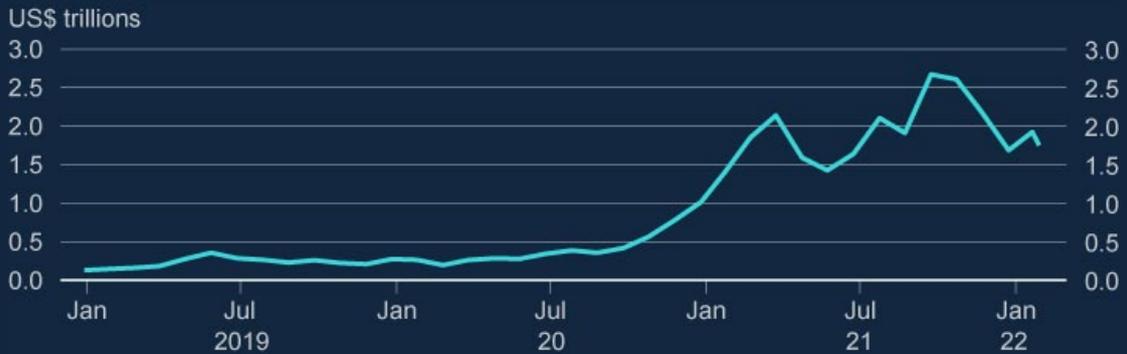
Cryptoassets are a digital representation of value or contractual rights that can be transferred, stored or traded electronically, and which typically use cryptography, distributed ledger technology (DLT) or similar technology.<sup>1</sup>

The global market for cryptoassets has grown and developed rapidly in recent years. The outstanding value of cryptoassets grew around tenfold between early 2020 to November 2021, peaking at US\$2.9 trillion. The market capitalisation has since fallen back to around US\$1.7 trillion in the first week of March 2022, so that it now represents around 0.4% of global financial assets (Chart 1).<sup>2</sup> There are currently over 17,000 different cryptoasset tokens in circulation – meaning the market now comprises a very broad spectrum of products beyond those most commonly known (such as Bitcoin) (Chart 2).

<sup>1</sup> DLT is a set of technological infrastructure and applications. It allows simultaneous access, validation, and record updating in a secure and unchangeable way across a network spread across multiple entities or locations (as opposed to a central ledger, where a single entity records transactions and ownership). Cryptography is a technique for protecting information by transforming it into a secure format.

<sup>2</sup> Market capitalisation data correct as of 8 March 2022.

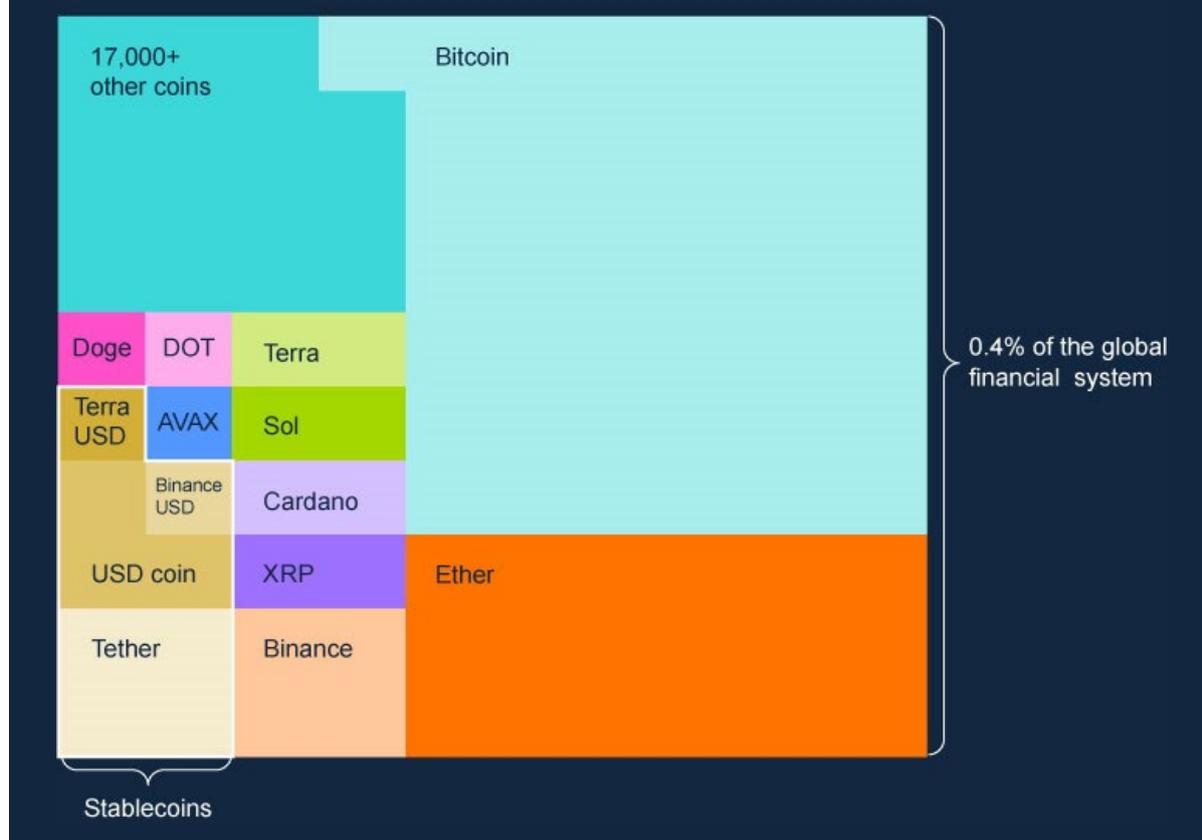
**Chart 1: Global cryptoasset markets have grown rapidly in recent years**  
Total market capitalisation of cryptoassets



Source: CoinMarketCap.

This growth has been supported by the concurrent development of a broader set of cryptoasset markets and activities (Figure 1). This has recently grown to include a range of DeFi applications replicating services such as borrowing, lending and market-making in cryptoasset markets (see Box A).

**Chart 2: Cryptoasset markets now comprise a broad spectrum of coins**  
Breakdown of total cryptoasset market capitalisation <sup>(a)</sup>



Source: CoinMarketCap.

(a) Stablecoins refer to cryptoassets that claim to maintain a stable value, primarily against existing national fiat currencies.

**Currently, the vast majority of cryptoasset activity is driven by the use of highly volatile unbacked cryptoassets as speculative investment assets.**

Unbacked cryptoassets are non-replicable strings of computer code that can be owned and transferred without intermediaries, and have no underlying assets. Such cryptoassets (the most commonly known being Bitcoin and Ether) comprise around 90% of the total market capitalisation of cryptoassets (Chart 2).

Unbacked cryptoassets establish no claim on future income streams or collateral, meaning they have no intrinsic value. Although they tend to be based on technology which could bring benefits to the financial system, their value is not directly tied to the technology. These characteristics make them vulnerable to major price corrections that mean investors may lose the entire value of their investment. Bitcoin returns are three times as volatile as the S&P 500. Large daily swings in value are

common – Bitcoin prices have fallen by 10% or more in a single day around 25 separate times over the past five years, on one occasion falling 27% in a single day. This price volatility makes unbacked cryptoassets unsuitable to be widely used as money, for example as a means of exchange or a store of value.

**As they have become more popular, new means of gaining exposure to cryptoassets have emerged.**

Direct investment in cryptoassets can be facilitated by spot trading of cryptoassets on crypto-exchanges – platforms and applications that allow individuals and institutions to buy, sell and exchange cryptoassets, as is commonplace for equities trading. These exchanges typically carry out a broader range of activities than those used for other financial instruments. Not only do they facilitate trading between buyers and sellers in exchange for fees, some offer custody, clearing and settlement facilities too.

Cryptoasset derivatives – financial contracts whose value is based on the value of underlying cryptoassets – have grown in popularity in recent years. These products make it possible for investors to take highly leveraged positions, thereby amplifying market movements in cryptoassets. Given their volatility and complexity, the FCA took the decision to ban the sale and exchange of derivatives and exchange traded notes that reference certain types of unregulated, transferable cryptoassets to retail investors in the UK from January 2021.

Cryptoasset exchange-traded funds (ETFs) – funds that track the price of a basket of cryptoassets – also allow investors to gain indirect exposure to cryptoassets, potentially with additional leverage. The first cryptoasset ETF started trading in Canada in February 2021, and their growing popularity has led to interest from established financial service providers. Total cryptoassets under management of investment funds – including ETFs – currently stand at US\$118 billion.

**Other cryptoassets – mostly known as ‘stablecoins’ – claim to maintain a stable value, primarily against existing national fiat currencies.**

A number of cryptoasset models have emerged that hold backing assets intended to stabilise their value against existing national fiat currencies or other assets. This is typically intended to allow the user to redeem the cryptoasset in fiat currency.<sup>3</sup> Given their perceived or purported relative stability in value, stablecoins may have greater potential to become widely used in payments, compared to unbacked cryptoassets.

<sup>3</sup> Fiat currencies are a medium of exchange established as money, often supported by a central bank that is mandated by a government to protect its value over time (such as Pound sterling or US dollar).

As described in Section 3.3, if appropriately designed, stablecoins could offer lower cost, real-time payments services, while also maintaining a reliable store of value.

Custodial stablecoins – the largest being Tether – have predominantly fiat-based backing assets (such as cash and short-dated securities) that are controlled by the stablecoin issuer. For example, if a coinholder deposited £100,000 with the stablecoin issuer, they would receive an equivalent value of stablecoins in return (minus fees). The stablecoin issuer would then invest these funds in backing assets. In theory, if the coinholder later chose to redeem their stablecoin for fiat currency, the backing assets would be sold, and the £100,000 returned to the investor. The ability of the stablecoin issuer to meet all redemptions at par value requires that the value of the stablecoins' backing assets remains in line with the stablecoins in issue, and that their liquidity matches their possible redemptions (similar to money market funds).<sup>4</sup>

Non-custodial stablecoins are backed by cryptoassets instead of traditional securities. Rather than use a backing asset model, some non-custodial stablecoins use other means to keep the price of the coin at a stable value. For example, some stablecoins – known as algorithmic stablecoins – destroy some of the coin supply in order to create scarcity and drive the value up to the required level. These stablecoins are currently very limited in scale.

### **Stablecoins underpin activity on many centralised cryptoasset exchanges and DeFi applications.**

Around 75% of cryptoasset trading on centralised exchanges involves a stablecoin, which are intended to act as a stable store of value relative to fiat currency and other assets. Stablecoins also play a key role in DeFi applications, with some DeFi applications issuing their own currencies (Box A).

<sup>4</sup> This paragraph describes the primary market for the stablecoin. Stablecoins also have a secondary market (between coinholders). Deviations from the peg in the secondary market create arbitrage incentives to bring the price back to par, so long as coinholders maintain confidence in the value and liquidity of the backing assets.

**Figure 1: Cryptoassets and associated markets are small but growing rapidly – they provide similar services to the traditional financial sector**



Cryptoasset markets	Interlinkages	Traditional financial system
Underlying assets	Investors may have exposures to both sets of assets leading to contagion.	Underlying assets
Mostly unbacked cryptoassets		Predominantly real economy assets
Stablecoins backed by assets may become more important	Investors can borrow in one system and invest proceeds in the other.	Activities
Activities		Trading
Trading		Lending
Lending	Activity could migrate from traditional system to cryptoasset markets and vice versa.	Asset management
Asset management		Payments
Payments		Insurance
Insurance		Key providers of services
Key providers of services	Traditional providers may move into cryptoasset markets and vice versa.	Banks
Decentralised finance		Insurers
Unregulated centralised exchanges		Financial Market Infrastructure
Cryptoasset operators		Asset managers and investment firms
Wallet providers		

Sources: CoinMarketCap, Financial Stability Board and Bank calculations.

## 2: Financial stability implications of cryptoassets and associated markets

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### **The technology underpinning cryptoassets has the potential to reshape activity in the traditional financial sector.**

The activities set out in Section 1 are creating new financial assets and new means of intermediation. Many services now facilitated by crypto technology mirror those available in the traditional financial sector, including lending, exchange, investment management and insurance. These services are currently concentrated in cryptoasset markets, which are small compared to that of the overall financial sector.

But cryptoassets and associated markets – including cryptoasset derivatives and cryptoasset funds – have grown rapidly over recent years, and should they continue to do so, interlinkages with the traditional financial sector are likely to increase. Moreover, the new technology has the potential to reshape activity currently taking place in the traditional financial sector, through either the migration of that activity or the widespread adoption of the technology.

### **Innovation in cryptoassets and the technology underpinning them could bring a number of benefits.**

Provided that they are safe and stable in value, cryptoassets and the technology underpinning them could reduce the cost, and increase the speed of cross-border payments by allowing transactions to take place directly between individuals ('peer-to-peer') and reducing the need for centralised intermediaries. If undertaken within a well-designed and proportionate regulatory regime, this technology could increase competition in the UK financial system, further lowering costs to end-users.

Furthermore, DLT could potentially be used to make financial market infrastructure (FMI) processes (in particular settlement) more efficient, transparent and resilient. The Bank is working with HM Treasury and the FCA on the development of a new FMI Sandbox, which would allow firms to experiment with technologies such as DLT in the provision of FMI services.

New forms of digital money could also increase the resilience of the financial system by providing an alternative to traditional modes of payment. And there is a possibility in the future that new technology to support new forms of digital money could be designed to be more operationally resilient than existing technology. For example, the decentralised nature of DLT removes the central point of failure associated with

traditional payment systems, which could enable high levels of availability and resilience.

Outside payments, decentralised networks used for lending could in time reduce the reliance on existing intermediaries if done safely. Furthermore, some DeFi applications could potentially benefit financial market participants in terms of speed of execution and transaction costs by removing the need for intermediaries (Box A).

**The mitigation of financial stability risks from cryptoassets and associated markets is essential to ensuring the benefits from new technologies can be realised sustainably.**

The FPC aims to ensure that the UK financial system is prepared for, and resilient to, the wide range of risks it could face – so that the system can serve UK households and businesses in bad times as well as good. Consistent with its primary objective of supporting UK financial stability, this means ensuring that cryptoassets and associated markets do not increase risks to financial stability. Given the global nature of cryptoassets and associated markets, international co-operation among regulatory authorities will be essential to achieve this (see Section 6).

The FPC has a secondary objective to support HM Government's economic policy, which includes encouraging competition and innovation in financial services, irrespective of the underlying technology. The FPC will seek to ensure that risks to UK financial stability from cryptoassets and associated markets are mitigated, allowing developments that are beneficial to competition or economic welfare to be more effectively realised.

**The FPC has identified the key risk channels that could stem from cryptoassets and associated markets.**

The use of cryptoasset technology can bring risks. These include: financial risks arising from direct exposures or spillovers between markets; operational risks arising from the use of new technology; and regulatory and stability challenges as activity migrates or new forms of entities and business models emerge. These risks are likely to increase as cryptoassets and associated markets grow, and as links with the traditional financial system increase.

The FPC has identified the key channels through which these risks could affect financial stability. They include:

- Risks to systemic financial institutions.
- Risks to core financial markets.
- Risks to the ability to make payments.

- Impact on real economy balance sheets.

These channels are summarised in Figure 2 at the end of this section.

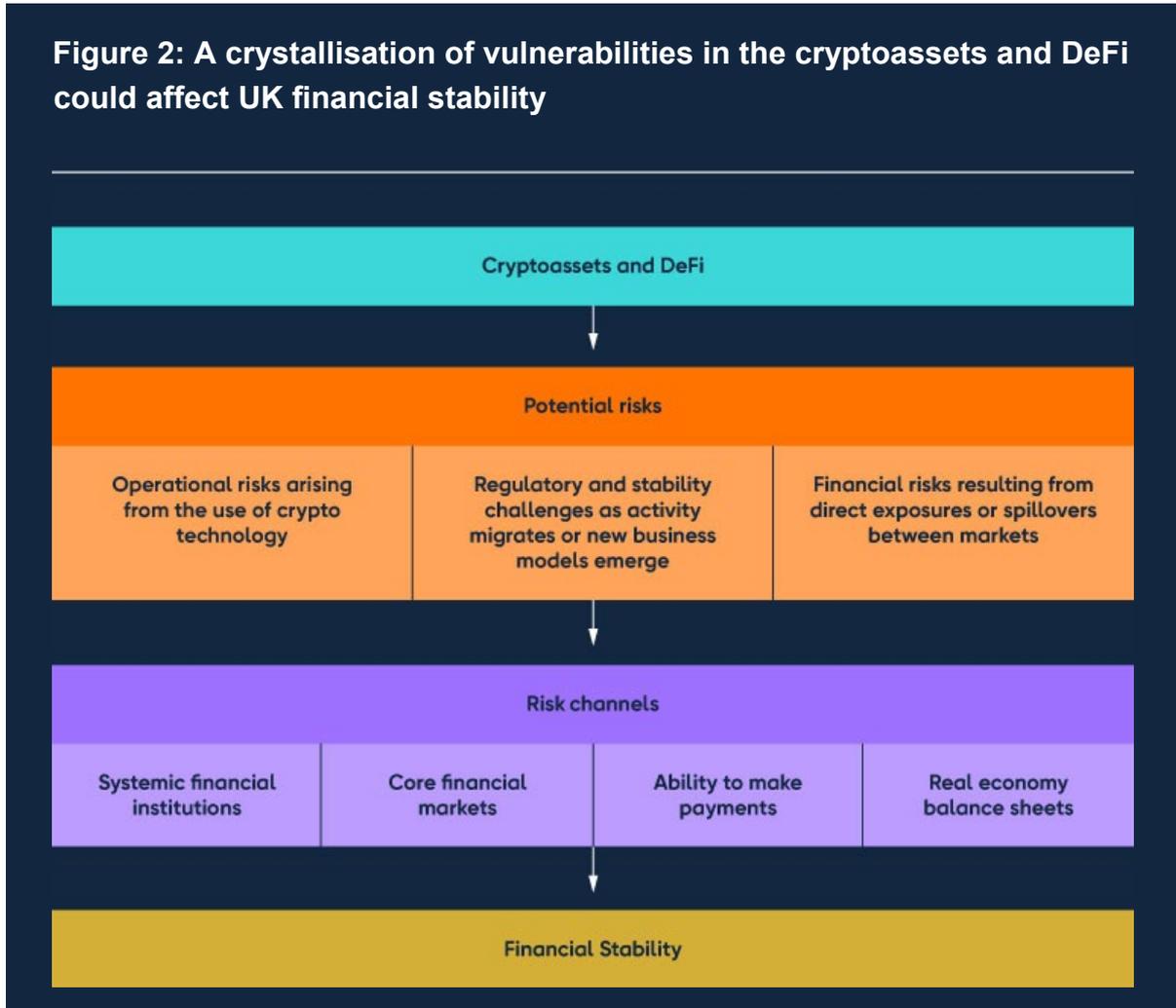
Furthermore, a crystallisation of risks in cryptoasset and associated markets could lead to a loss of confidence. This could weaken broader trust and integrity in the financial system.

Many of the risks posed by cryptoassets and DeFi are similar to those managed by the existing regulatory framework in other parts of the financial system. In some cases, the existing regulatory framework can be used to manage the risks. In other cases, further development of the regulatory framework might be needed to reflect the differing nature of the underlying technology and its impact on business models or the system more generally.

Section 3 of this report sets out an initial view of how the risks could propagate through the key channels the FPC has identified. Section 4 outlines the FPC's approach to monitoring risks in the cryptoassets and DeFi, and how this will evolve as these markets develop. Section 5 summarises the FPC's view of risks, and sets out the need for regulatory frameworks to keep pace with market developments. Section 6 outlines existing regulatory initiatives related to the cryptoassets and DeFi.

There is a broader set of risks posed by cryptoassets and DeFi beyond financial stability, relating to consumer protection, market integrity, money laundering and terrorist financing. While the FCA have primary responsibility for these risks, they nonetheless have the potential to pose indirect risks to UK financial stability through their impact on confidence (see Box B). The FPC supports the FCA's work to understand and address these risks.

**Figure 2: A crystallisation of vulnerabilities in the cryptoassets and DeFi could affect UK financial stability**



## 3: Risks to financial stability

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### 3.1: Risks to systemic financial institutions

**Direct involvement in cryptoasset and associated markets by UK banks has been limited to date, but further involvement could increase the risk of financial losses and operational disruption.**

Where banks have begun to cater to cryptoassets and associated markets, it has mostly been international banks facilitating client trading in cryptoasset derivatives – though this activity is currently very limited. Banks plan to undertake cryptoasset market-making activities, thereby providing liquidity to cryptoasset markets. This is likely to lead to a growth in direct cryptoasset exposures, which could create financial risks to these banks, depending on their positioning and hedging strategies.

No major UK bank has reported direct exposures to cryptoassets as yet. However, some are seeking to offer cryptoasset custody services in the near future. Traditional custody services provide the settlement, safekeeping and reporting of customers' securities and cash. The main role of cryptoasset custody services is to ensure that private keys – which allow users to access their digital assets – are secure. This creates new operational risks for banks to manage. A security breach could have harmful reputational ramifications, which could in turn reduce the overall level of confidence in those banks.

**Involvement in cryptoassets and associated markets by insurers is currently very limited.**

Insurers' balance sheet exposures to cryptoassets are negligible at present. Supervisory intelligence suggests that insurers are unlikely to increase their exposures markedly in the short term, and there is limited appetite for writing insurance contracts covering cryptoassets (eg covering wallet theft or fraud, or hacks of digital assets). However, new products, similar to insurance, have begun to develop in the DeFi ecosystem to provide cover against risks from 'smart contract failure' (see Box A).

**The growth of stablecoins for payments could increase the role of non-banks in the financial system, and opportunities for regulatory arbitrage could arise.**

Stablecoins could emerge as an alternative to commercial bank deposits, or grow in importance as a means of transacting as DeFi grows. As set out in the Bank's [Discussion Paper on new forms of digital money](#), a range of different backing models could be used for stablecoins. If stablecoins that are backed by central bank reserves substantially increase in popularity, then there could be a substantial shift

away from household wealth being held as deposits at commercial banks to central bank reserves, via stablecoin providers.<sup>5</sup>

Such a shift could reduce the proportion of money in the economy that is backed by loans issued by commercial banks to the real economy. This means banks would instead need to seek alternative sources of funding, which may be more expensive (for example, long-term wholesale funding) and could reduce the efficiency with which commercial banks extend credit. This is discussed in more detail in the Bank's [Discussion Paper on new forms of digital money](#), and the [Summary of Responses](#).

A shift from commercial bank deposits to stablecoins would be a concern if stablecoin business models are subject to looser regulation for the same level of risk – a form of 'regulatory arbitrage'. For example, in the UK banks are currently subject to rules governing the assets they can use to back the commercial bank money they provide to the economy, but no such rules exist for stablecoins. This could allow stablecoins to offer higher returns to coinholders than banks could to depositors, for example by holding a riskier set of backing assets rather than safer assets such as central bank reserves. This could potentially increase the risk that coinholders would not be able to redeem their coin at par. Box C sets out regulatory considerations relevant to mitigating these potential risks from systemic stablecoins.

## 3.2: Risks to core financial markets

**While current holdings are small, investments related to cryptoassets are starting to become integrated into the portfolios of institutional investors.**

The Fidelity Institutional Investor Digital Assets Survey suggests that as of September 2021, 13% of US and 23% of European 'traditional' hedge funds held cryptoassets in their funds.<sup>6</sup> However, given that cryptoassets currently account for only 0.4% of global financial assets, in aggregate, they are likely to represent only a small fraction of these investor portfolios. Exposures of other institutional investors are reportedly small. The survey indicates 3% of US and European Union (EU)

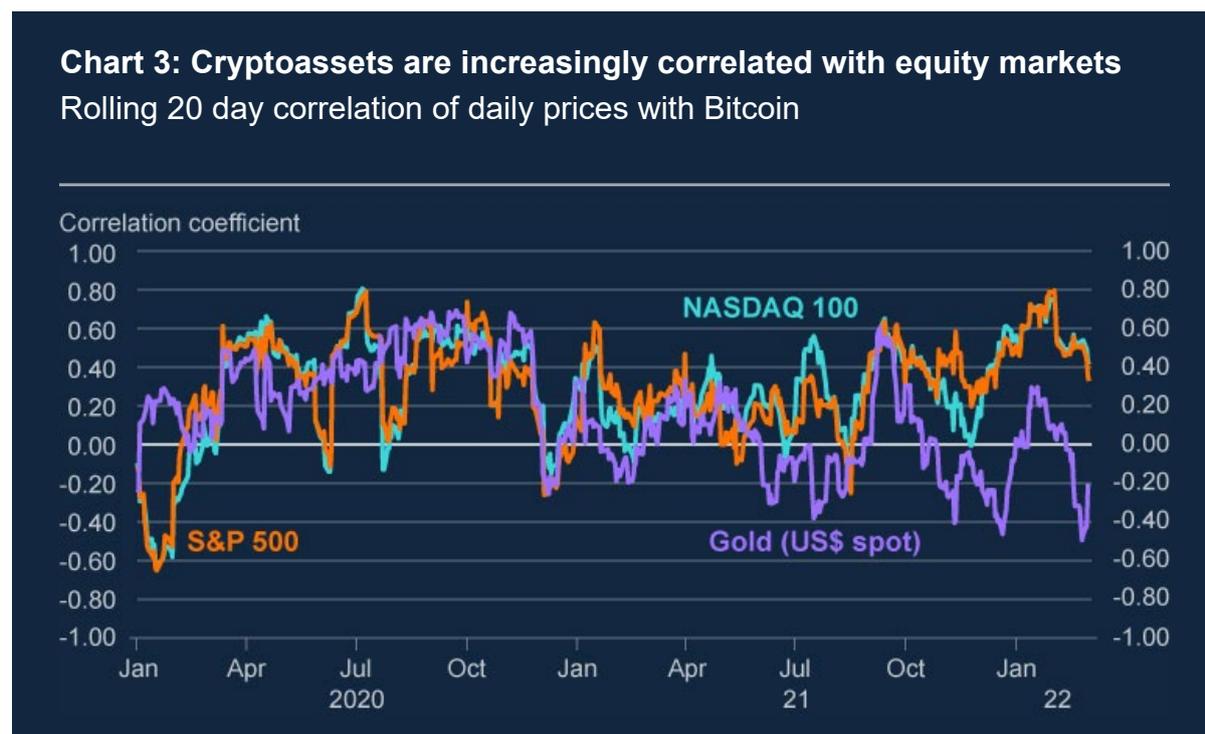
<sup>5</sup> If stablecoins were instead backed by other high-quality liquid assets (HQLA), issuers would need to purchase the required HQLA, thereby returning the deposits to the banking system. If stablecoins were backed by commercial bank deposits, bank retail deposits would simply be replaced by deposits held on behalf of stablecoin issuers. See the [Bank's Discussion Paper on new forms of digital money](#) for more information.

<sup>6</sup> In this Financial Stability in Focus report 'traditional' hedge funds refer to funds that typically invest in assets such as equities and bonds, in contrast to crypto hedge funds that primarily invest in cryptoassets and associated markets.

pension funds and endowments are either directly or indirectly invested in cryptoassets and associated markets.

Cryptoassets' correlation with other asset classes – such as gold or equities – has varied over time. As cryptoassets started to be more integrated in investors' portfolios, market movements had generally become increasingly correlated with conventional risky assets, such as equities (Chart 3). But the relationship between cryptoassets and other asset classes remains unstable, as highlighted by their relative price movements since the start of the Russian invasion of Ukraine.

Further institutional involvement is constrained by the current insufficiency of the necessary infrastructure (eg. custodians, liquid regulated exchanges and investment products) to support participation in cryptoasset markets, combined with the high level of risk and regulatory uncertainty. But as barriers to institutional investment diminish or risk appetite increases, investors may increase their exposures and embed cryptoassets as a core part of their portfolios, including with the use of leverage.



Sources: Bloomberg Finance L.P. and Bank calculations.

**Spillovers to core financial markets from cryptoassets and associated markets have been limited to date, but may arise through familiar channels as they become embedded in institutional investors' portfolios.**

Given cryptoassets currently represent only a small fraction of institutional investor portfolios, they are unlikely to present a risk to UK and global financial stability in and

of themselves. However, spillovers could still materialise as a result of an increase in investors holding more cryptoassets – for example, a large fall in cryptoasset valuations may cause investors to sell other financial assets (for example as part of a portfolio reallocation), causing contagion to the traditional financial system.

Similarly, cryptoasset derivatives that are traded on regulated markets – currently a small proportion – give rise to margining requirements for institutional investors that hold them. Given the volatility of cryptoassets, margin calls on cryptoasset derivatives could be very large under stress. This could intensify the demand for liquidity across the financial system in the event of a market stress. And these spillover risks will increase as cryptoassets and associated markets become more integrated with the traditional financial system.

**The composition of stablecoin backing assets may in some cases not be sufficient to cope with mass redemptions, which could create risks for the wider financial system.**

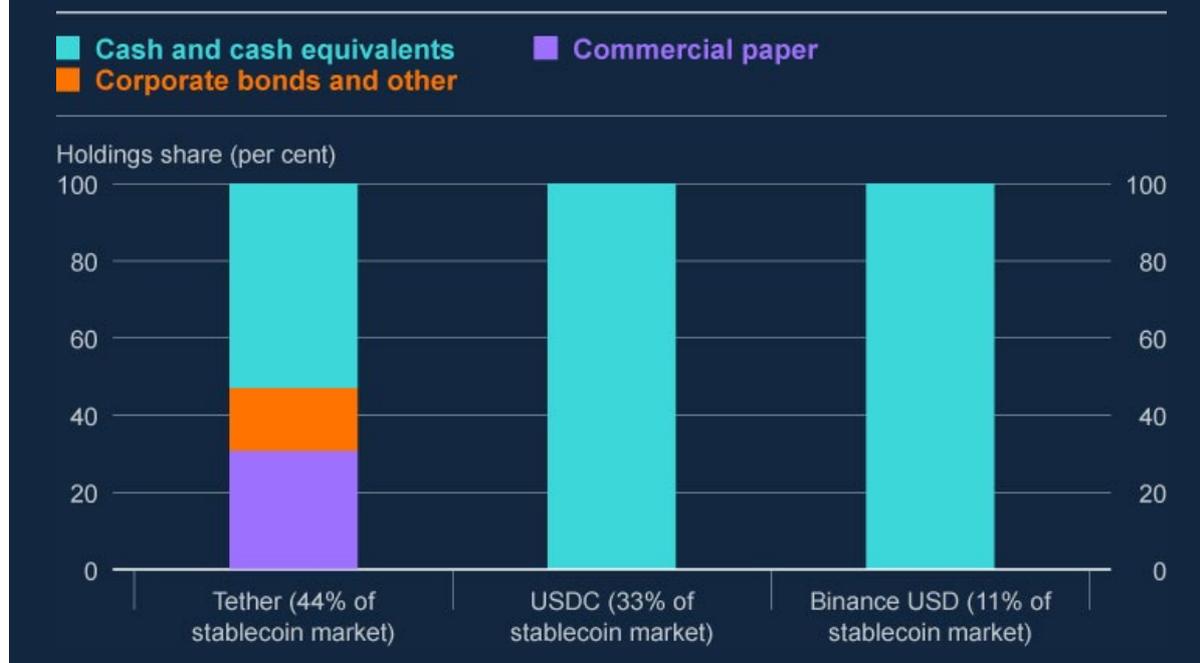
The composition of backing assets is key in determining the riskiness of a stablecoin, and varies considerably across popular stablecoins (Chart 4). Some are entirely backed by cash or short-term, highly liquid assets. This means that while redemption at par cannot be guaranteed under all scenarios, the value of the backing assets is less likely to fall below their corresponding fiat value, and can be more reliably realised in the event of a mass redemption of the stablecoin.

But some purported stablecoins hold assets significantly less liquid and stable than cash, leaving a risk of them being unable to liquidate enough backing assets if it were to face mass redemptions. This could make these stablecoins vulnerable to runs, and could precipitate a loss in confidence in stablecoins more generally, which would in turn encourage further redemptions.<sup>7</sup>

<sup>7</sup> For example, in June 2021, Iron Finance – a stablecoin – saw its governance token (TITAN) become worthless, after an investor run, driven by its partially collateralised stablecoin (IRON) moving away from its peg.

#### Chart 4: Some large stablecoins are backed by assets of varying liquidity and credit risk, while others are backed by cash <sup>(a)</sup> <sup>(b)</sup>

Backing asset structure of major stablecoins



Sources: Binance.com, Circle.com, Tether Holdings Limited Consolidated Reserves Report and Bank calculations.

(a) Cash and cash equivalents includes: cash and bank deposits, reverse repo notes, money market funds and Treasury bills.

(b) Other includes: secured loans to non-affiliated entities, investment on funds, precious metals, and other investments such as digital assets.

**While stablecoins' backing assets represent a small proportion of financial market assets, a fire sale of backing assets could disrupt the functioning of certain markets if they were to grow materially.**

Stablecoins currently account for under 0.1% of the total financial system. But appropriately liquid backing assets could become concentrated in a small number of core markets. As stablecoins continue to grow, it is more likely that a forced liquidation of their backing assets would have the potential to cause some disruption to the functioning of these markets.

### 3.3: Risks from use for payments

**Stablecoins could play an increasingly important role in payments.**

Currently stablecoins are not used to make mainstream payments. But as cryptoasset markets develop, there could be potential for a stablecoin to launch and scale up rapidly, becoming a systemic payment system.

**Public confidence in money and payments could be undermined if a systemic stablecoin used for payments fails to meet its obligations.**

Unlike unbacked cryptoassets, stablecoins claim to maintain a stable value against a fiat currency by holding a pool of backing assets, in a bid to make them more suitable for payment and settlement purposes. If a systemic stablecoin were to fail to honour its obligations, or suffer an operational failure such as a breach of privacy, this could undermine public confidence in money and payments, and in the financial system more broadly. In the UK, this risk is currently limited as stablecoins are not widely used for payments, but the market could evolve quickly.

**The FPC has previously set out expectations that systemic stablecoins would need to meet before they could be acceptable for widespread adoption as a means of payment.**

Some stablecoins intend to replace or substitute existing payment systems, and would transact in their own coin issuance rather than central or commercial bank money. Consistent with this intention, the [FPC's expectations](#) outline that stablecoins used in systemic payment chains as money-like instruments should be regulated to standards equivalent to traditional payment chains. The expectations would also ensure that systemic stablecoins are regulated and supervised to deliver the same level of public confidence as commercial bank money. The Bank, alongside other UK and international regulatory authorities, is considering the optimal regulatory model for systemic stablecoins (Box C).

### 3.4: Impact on real economy balance sheets

**The risk from cryptoassets and associated markets via household spending and business investment is currently limited.**

If retail holdings of cryptoassets were to grow significantly – especially if funded by debt – a sharp correction in valuations could have a negative impact on consumer spending or their ability to service other debt.

Ownership of cryptoassets by UK retail investors has increased significantly in recent years – a survey by YouGov suggests approximately 9% of people in the UK had personally bought cryptoassets as of January 2022, up from 5% a year earlier. Some retail investors make these purchases using debt, amplifying the risks from a fall in price. An FCA survey in January 2021 found that 14% of people who held cryptoassets in the UK had used debt to facilitate their cryptoasset purchases. However, cryptoasset holdings remain very limited as a share of UK net financial wealth. As a result, the financial stability risks that could currently arise directly from household losses are also limited.

In principle, a similar channel could apply to UK businesses if they were to increase their ownership of cryptoassets considerably. A fall in the value of cryptoassets or the crystallisation of operational risk could create direct losses to businesses and reduce investment. Vulnerabilities could also arise if corporate borrowing were to take place via cryptoasset markets in the future. However, real economy corporate activity in cryptoasset markets is currently limited.

## 4: The FPC's approach to monitoring risks from cryptoassets

**To help monitor the risks associated with cryptoassets and DeFi, the FPC has identified a range of indicators.**

The global and largely unregulated nature of cryptoassets and DeFi can hinder authorities' efforts to identify and quantify risks associated with them. The FSB has published currently available metrics and data limitations when evaluating financial stability risks in these markets. But as cryptoassets and DeFi continue to evolve rapidly, the data that are needed to adequately monitor them will change.

The FPC uses a range of tools and approaches to assess financial stability risks. One of the steps the FPC is taking to monitor the evolution of risks from cryptoassets and DeFi is to identify a range of indicators across the main risk channels outlined in Section 3. These are outlined in Table A.

There are currently significant data gaps related to cryptoassets and DeFi that impede a fuller assessment of risks, including how the possible risks to the global financial system may affect the UK financial system specifically. The PRA is issuing a Dear CEO letter reminding firms of their obligations with respect to cryptoasset exposures (discussed in Section 6). Alongside this letter, the Bank is requesting information on certain firms' current cryptoasset exposures and business activities in associated markets – this will help fill some of the existing gaps. Going forward, work will be needed to enhance the transparency of institutional investor holdings as cryptoassets and DeFi continue to grow. International effort and co-operation will be essential to remediating these data gaps and monitor risks building across jurisdictions. The indicators set out in Table A will continue to be reviewed and adapted as the market and data availability develops.

Even as the availability of data improves, some indicators may be harder to monitor than in the traditional financial sector, underscoring the continued importance of gathering intelligence from market participants to supplement these indicators.

**Table A: Example indicators for monitoring risks from cryptoassets and DeFi**

<b>Risk channel</b>	<b>Example indicators</b>
Risks to systemic financial institutions	<ul style="list-style-type: none"> <li>• Nature of current bank and insurer activities (eg size of direct exposures, custody services and market-making).</li> </ul>
Risks to core financial markets	<ul style="list-style-type: none"> <li>• Institutional adoption of cryptoassets, including the funds invested in major cryptoassets.</li> <li>• The backing asset composition of major stablecoins.</li> <li>• Measures of price correlation and volatility of major cryptoassets compared to other asset classes.</li> <li>• Total value locked in DeFi applications, and lending rates on lending platforms.<sup>(a)</sup></li> </ul>
Risks to the ability to make payments	<ul style="list-style-type: none"> <li>• Extent to which the existing UK payment system architecture supports cryptoasset payments.</li> <li>• Size and nature of cryptoasset payments in the UK.</li> </ul>
Impact on real economy balance sheets	<ul style="list-style-type: none"> <li>• Size and distribution of cryptoasset holdings across UK households and businesses based on survey data.</li> <li>• Data on payments to crypto-exchanges.</li> </ul>

(a) 'Total value locked' refers to the aggregate amount that DeFi applications report as held in their applications.

## 5: The FPC's assessment of financial stability risks from cryptoassets and DeFi

**The FPC continues to judge that direct risks to the stability of the UK financial system from cryptoassets and DeFi are currently limited. But the pace of growth and potential for interconnections with the wider financial system mean that they will present a number of financial stability risks in the future.**

Cryptoasset markets are currently small, and there is limited interconnectedness with the traditional financial system. However, as the FPC has noted, risks to financial stability will increase as cryptoassets and DeFi continue to grow, especially at the pace seen in recent years and as they become more connected to systemic financial institutions and markets.

**Where crypto technology is performing an equivalent economic function to one performed in the traditional financial sector, the FPC judges this should take place within existing regulatory arrangements, and that the regulatory perimeter should be adapted as necessary to ensure an equivalent regulatory outcome.**

Many of the potential financial stability risks posed by cryptoassets and DeFi highlighted in Figure 2 are similar to those already managed by the existing regulatory framework in other parts of the financial system. For example, the risk of direct losses to banks can be managed within the existing capital framework. A materialisation of cryptoasset-related operational risks for a bank or stablecoin operator could have reputational ramifications – as is the case for other forms of operational risk. And amplification channels from risks in cryptoassets and associated markets arise through similar channels to other parts of the financial system, such as the use of leverage and the impact on confidence.

But as cryptoassets and DeFi develop, new, unforeseen vulnerabilities may emerge. And in the absence of an updated regulatory framework, risks outside the regulatory perimeter could grow.

While the existing regulatory framework should be adapted to ensure an equivalent regulatory outcome for equivalent risks, the regulatory measures used to achieve these outcomes may need to be tailored to the new technologies and platforms that underpin them.

Several initiatives are already under way domestically and internationally to begin to adjust regulatory frameworks so that they can mitigate risks and support innovation. These regulatory initiatives are outlined in Section 6.

**Enhanced regulatory and law enforcement frameworks, both domestically and at a global level, are needed to address developments in these markets and activities, and encourage sustainable innovation as well as maintain broader trust and integrity in the financial system.**

The benefits from innovation in cryptoassets and DeFi can only be realised and innovation can only be sustainable if undertaken safely and accompanied by effective public policy frameworks that mitigate risks.

Work to mitigate the full range of potential risks from cryptoassets and DeFi is still at an early stage, and it will take time for any international standards to be implemented in domestic frameworks. Given this, there is currently scope for regulatory arbitrage, and there is a danger that risks grow rapidly before an internationally agreed framework is in place. The FPC considers that financial institutions should take an especially cautious and prudent approach to any adoption of these assets until such a regime is in place.

The existing regulatory framework, with some adjustment, can sufficiently mitigate certain risks, such as the risk of financial losses to banks. In other cases, there is a need for the regulatory community to work towards expanding or strengthening the regulatory framework to mitigate the risks identified by the FPC.

While a number of initiatives are in train, the FPC considers that as cryptoassets and DeFi grow and develop, further development of the regulatory framework will be needed to support safe innovation in relation to them. This will likely require the expansion of the role of existing macro and microprudential, conduct, and market integrity regulators, and close co-ordination among those regulators. Any decisions on adapting the regulatory perimeter would be for the Government to take.

**The FPC will continue to pay close attention to developments in cryptoassets and DeFi and will seek to ensure that the UK financial system is resilient to systemic risks that may arise.**

## 6: Regulatory initiatives to mitigate risks from cryptoassets and DeFi

### **The FPC supports the FSB in its role co-ordinating the international approach to unbacked cryptoassets.**

This year, the FSB will explore potential regulatory and supervisory implications of unbacked cryptoassets. The FSB will also work with international standard-setting bodies to review its [high-level recommendations](#) on global stablecoin arrangements, and how any gaps identified could be addressed by existing frameworks. Given the global nature of risks related to cryptoassets and DeFi, the Bank will work closely with international counterparts on the mitigation of risks to financial stability through international forums. The FSB is also carrying out further work to deepen its understanding of the financial stability risks associated with cryptoassets and DeFi. The FPC supports the FSB in its role co-ordinating the international approach to unbacked cryptoassets. In 2022 Q1, the FSB published a [report](#), endorsed by the G20, assessing the risks to financial stability from cryptoassets.

### **Internationally agreed standards for systemic stablecoin providers are currently being established.**

The FPC supports the work by CPMI-IOSCO on how internationally agreed standards for payment systems should apply to systemic stablecoin arrangements used for payments. In October 2021, CPMI-IOSCO set out that stablecoin arrangements that perform systemically important payment system functions should meet the existing PFMI and is consulting on how the PFMI apply to such stablecoin arrangements. Once published, the final guidance will help to support the regulation and supervision of systemic stablecoin operators in the future.

### **Work is also under way internationally to clarify the treatment of cryptoasset exposures under the prudential regime for banks.**

In June 2021, the Basel Committee on Banking Supervision (BCBS) published a [consultation](#) on preliminary proposals for the prudential treatment of banks' cryptoasset exposures. The Bank is engaging closely with this work to develop agreed standards for the prudential treatment of cryptoasset exposures. Consistent with the treatment of other bank exposures, this will ensure that as banks' involvement in cryptoassets and associated markets grows, it is met with capital and liquidity requirements that are appropriate given the level of risk being taken.

**The FPC welcomes the Dear CEO letter issued by the PRA reminding firms of their obligations with respect to cryptoasset exposures.**

There is a risk that exposures to cryptoassets grow rapidly before internationally agreed standards are integrated into the UK regulatory framework. To help ensure prudent treatment in the meantime, the PRA has issued a Dear CEO letter – which has the FPC’s support – reminding banks of their obligations with respect to risk management and capital requirements applicable to cryptoasset exposures within the current regulatory framework. The FPC also welcomes the [statement](#) issued by the FCA reminding firms of key existing obligations when interacting with or exposed to cryptoassets and related services, given the risks they present to both market integrity and consumers.

**Work underway to deal with the vulnerabilities exposed in the ‘dash for cash’ could help to manage some risks related to cryptoassets.**

In March 2020, vulnerabilities in market based finance amplified the initial market reaction to the pandemic to create a severe liquidity shock (the ‘dash for cash’), disrupting market functioning. The FPC has since worked closely with the FCA and international regulators to understand, and where possible, remediate these underlying vulnerabilities.

The [July 2021 Financial Stability Report](#) summarised progress to date, and planned action going forward. This includes international work led by BCBS-CPMI-IOSCO on demands for liquidity to service margin calls in derivatives, and managing risks from liquidity mismatches in open ended funds.<sup>8</sup> International work in this area will help mitigate risks where cryptoasset derivatives and funds that invest in cryptoassets are captured under these initiatives, for example cryptoasset derivatives that are traded on regulated venues.

**The FPC welcomes HM Treasury’s proposal for a regulatory regime for stablecoins, including bringing systemic stablecoins into the Bank’s regulatory remit.**

The rapid growth of stablecoins suggests it could be possible for stablecoins to be widely adopted in a short space of time, so it is important that work on the regulatory framework proceeds at pace.

<sup>8</sup> The BCBS-CPMI-IOSCO’s examination of the frameworks and dynamics of margin calls in centrally cleared and non-centrally cleared derivatives and securities markets is aimed at helping the financial system manage the demands for liquid assets that might arise due to margining. IOSCO’s work to assess liquidity risk and its management in open ended funds might help manage the risks related to maturity mismatch.

In 2021 the Bank published a [Discussion Paper on new forms of digital money](#), in which it set out a number of possible models for regulating stablecoins. The Bank has now published a [summary of responses](#) to the Discussion Paper, and is currently considering the viability of the possible regulatory models discussed in light of these responses.

HM Treasury's proposal for a regulatory regime for stablecoins will help the Bank to ensure that where stablecoins are used in systemic payment chains as money-like instruments, they meet standards equivalent to those expected of commercial bank money. The proposal would also give the Bank and FCA regulatory powers to address risks associated with other stablecoin operators such as stablecoin wallets and exchanges.

The Bank and HM Treasury are also currently considering the case for issuing a UK retail Central Bank Digital Currency. In 2022, the Bank and HM Treasury will launch a consultation, which will set out their assessment of the case for doing so.

**The FPC supports the work of the HM Treasury-FCA-Bank Cryptoassets Taskforce on assessing the regulatory approach to cryptoassets and associated markets.**

The Taskforce will help shape developments in this area and support safe innovation. It enables a co-ordinated approach across authorities to identify gaps in the current regulatory regime, and to develop and consult on regulatory proposals. The implementation of any agreed legislation will take place thereafter. The Bank will continue to improve its ability to monitor these markets, and work closely with other regulators to accelerate the development of an enhanced regulatory framework.

## Box A: Decentralised finance

**DeFi is a set of alternative financial markets and products built on distributed ledger technology.**

DeFi is a collective term for a set of applications that seek to provide a range of financial services, including loans and exchanges, with the aim of reducing reliance on centralised financial intermediaries. These alternative financial applications are built on distributed ledger technology. Unlike traditional financial services firms that undertake these activities, DeFi applications are, at present, largely unregulated.

DeFi applications have the following key features:

- DeFi applications purport to have a decentralised ownership and governance structure. They usually rely on voting by holders of governance tokens to make decisions with the intention of decentralising decision-making (for example, on alterations to the computer code, or changes to the governance structure). However, in practice the actual level of decentralisation may vary widely across different applications.
- DeFi applications operate through rules encoded in programs (known as ‘smart contracts’) that execute the terms and conditions of a transaction in an automated manner.
- DeFi relies on ‘open source’ technology where anyone can read the underlying source code that operates the applications and performs financial activities.
- Anyone can use DeFi applications, usually anonymously (or pseudonymously) and with minimal customer due diligence, as long as they can fulfil the application’s technical requirements for participation (for example, ownership of a cryptoasset wallet).

Some technological features used in DeFi, such as smart contracts, have the potential to improve speed and efficiency in the wider financial system.

**The DeFi ecosystem is currently small, but has grown very rapidly and is likely to grow further.**

The total value locked in DeFi applications – the aggregate amount that DeFi applications report as being invested – has grown by a factor of five since February 2021 to almost US\$180 billion as of 8 March 2022. DeFi remains a relatively small part of the financial services market. At present, DeFi provides financial services to cryptoasset investors, and has limited links to the rest of the financial system and to

the real economy. The risks of DeFi disrupting the broader financial system in the immediate future are low.

However, applications of DeFi could develop further, giving it the potential to grow. For example, the 'tokenisation' of traditional financial assets such as securities, if developed further, could facilitate transactions in a much broader range of assets on DeFi applications in future.

### **DeFi applications facilitate lending activity in cryptoassets**

DeFi lending applications require users to 'over-collateralise' positions, so anyone who can provide the required collateral (generally in the form of cryptoassets) can use the platform in an automated transaction. DeFi applications do not perform credit assessment on borrowers and do not need to know the identity of users.

Lending activity currently accounts for around a third of the current total value locked in DeFi (Chart A). Lending applications pool together cryptoassets that are in demand and allow participants to borrow and/or lend cryptoassets.

The typical process of DeFi lending works as follows (and is set out in Figure A): (i) the borrower posts cryptoassets as collateral (generally this is higher than the loan amount, eg in some cases it is 150% of the loan); (ii) a loan is issued to the borrower in the required cryptoassets as soon as the collateral is provided. Some of the applications issue newly created stablecoins in the process of lending, akin to commercial banks creating deposits in the banking system when making a loan (see [McLeay et al \(2014\)](#)).

Loans typically have no specific maturity date. Borrowers can repay the loan along with the interest at any time, thereby releasing their collateral. The collateral is usually liquidated, terminating the contract if at any point the value of collateral falls below a pre-determined minimum threshold. This threshold is usually lower than the initial collateral requirement, but typically higher than the loan amount.

### **DeFi applications also seek to replicate a range of other financial services.**

The ability to use the proceeds of a DeFi loan as collateral to raise additional DeFi loans means that users can significantly leverage their overall exposure. For example, the proceeds of a loan on one DeFi application can be pledged as collateral on another, allowing the user to ultimately borrow a multiple of their original cryptoasset holdings.

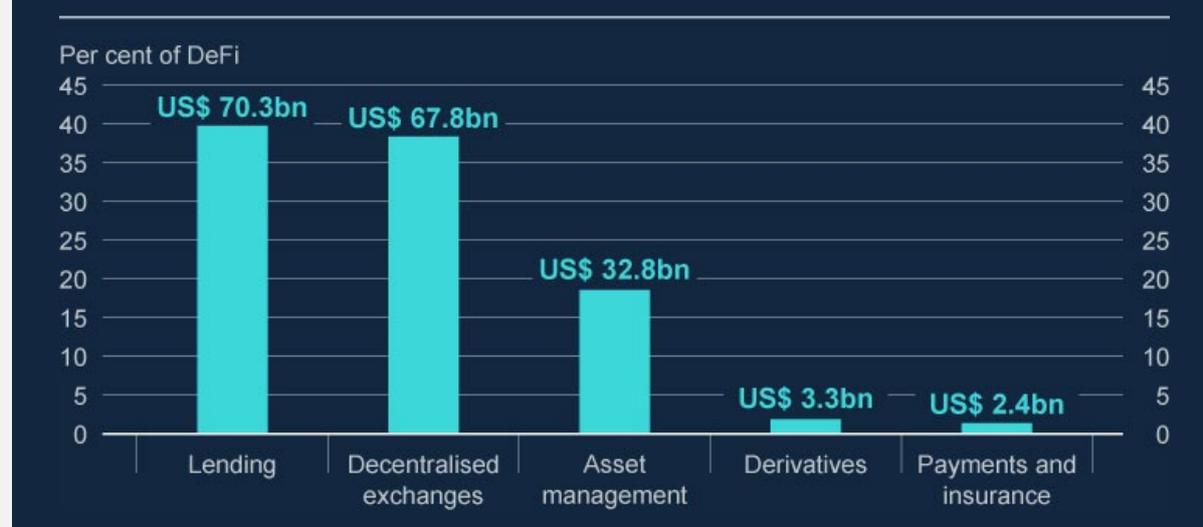
In principle, borrowers could exchange their borrowed cryptoassets for fiat currency on exchanges, allowing them to invest the proceeds in the real economy or traditional financial assets.

DeFi applications are also being used to replicate other financial services. Decentralised exchanges facilitate transactions without the need for a centralised intermediary, by remunerating users for contributing cryptoassets into a liquidity pool where users can trade assets (see Box A, [Aramonte et al \(2021\)](#)).

DeFi investment applications offer a range of cryptoasset investments and some automatically allocate investor funds on the basis of risk preferences and returns. Other DeFi applications facilitate the trading of complex derivative products. At a much smaller scale, some DeFi applications offer payment services, for example by offering interoperability between different applications. DeFi insurance products have also been developed to allow users to share risks from smart contract failure.

### Chart A: The DeFi market is dominated by decentralised exchanges and lending applications

Total value locked in DeFi applications, by type of activity



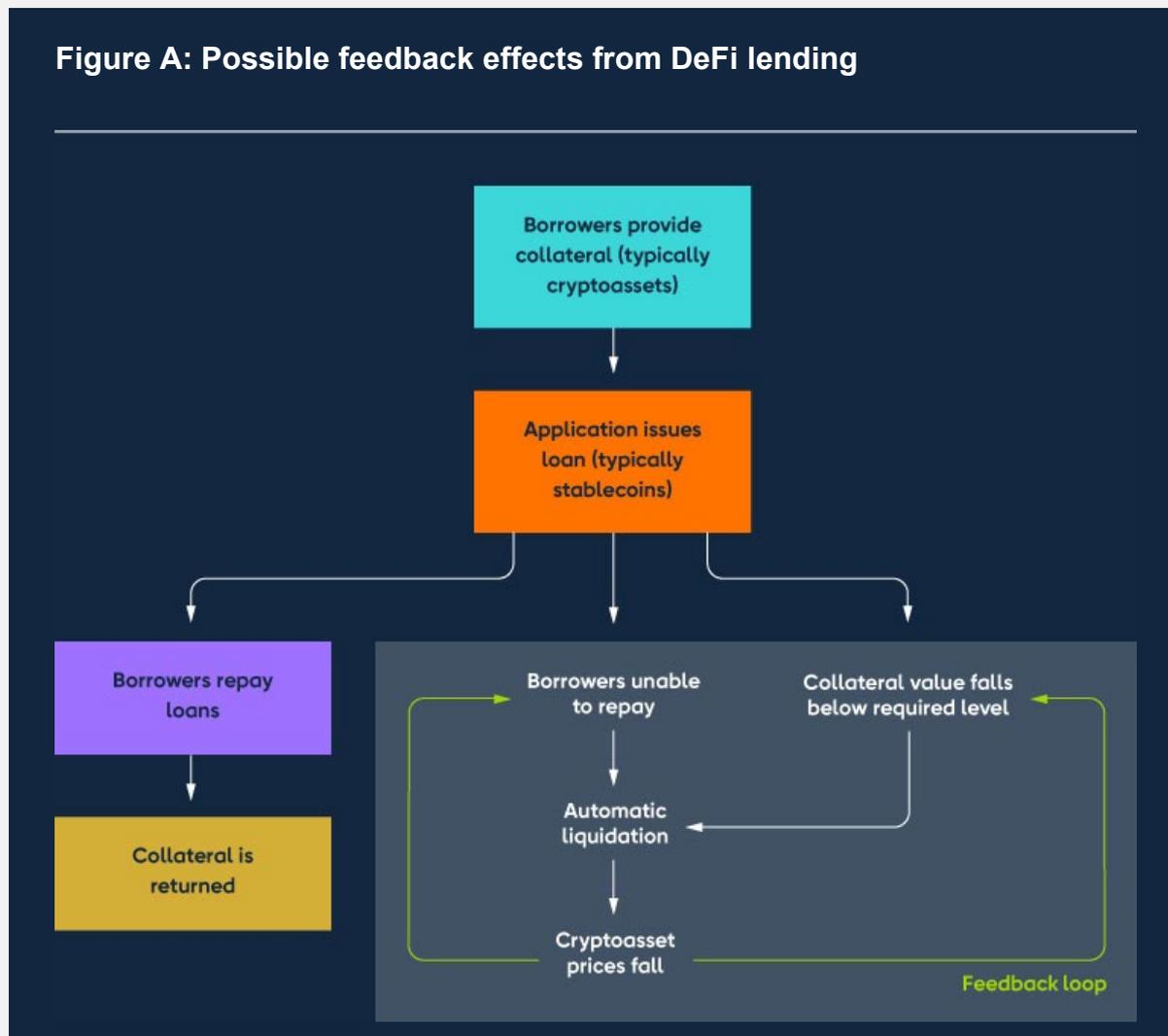
Sources: DefiLlama, The Block research and Bank calculations.

### As in traditional financial markets, the provision of leverage through DeFi applications has the potential to amplify risks and increase complexity.

A key difference between DeFi lending and market-based lending is what happens if the collateral value falls below the minimum required level (Figure A). In traditional market-based borrowing, this would result in a 'margin call' – a request to the borrower for additional funds to fulfil the collateral requirement. In DeFi lending, a fall in collateral value below the required level usually triggers the liquidation of the collateral. These liquidation events are most likely to occur when cryptoasset prices fall, and so have the potential to procyclically amplify selling behaviour in a market stress. And in the event of a sudden very large fall in the value of the collateral, it

may not always be possible to liquidate the collateral in order to repay the full value of the loan.

**Figure A: Possible feedback effects from DeFi lending**



**DeFi applications could compete with traditional financial service providers, increasing financial activity outside the regulatory perimeter.**

To the extent that DeFi has the potential to compete with traditional financial service providers – for example, if the technology were able to offer greater efficiency compared to the existing financial system, or due to lower costs as a result of the lack of regulation – certain financial activities currently undertaken by regulated financial institutions could begin to move outside the regulatory perimeter. A significant increase in financial activity taking place outside the regulatory perimeter may increase the level of risk in the financial system, particularly as it would be driven by lower regulatory protections.

**The continued growth of DeFi poses possible regulatory challenges.**

Where crypto technology is performing an equivalent economic function to the traditional financial sector, the FPC considers that the function should be regulated

to ensure an equivalent regulatory outcome. However, the use of decentralised technology – often across jurisdictional borders – means that there may not be a well-defined entity which could be subject to that regulation, so the way in which regulation is applied may need to be different.

The FPC will continue to monitor risks from DeFi markets and their interactions with cryptoassets and the real economy. The FPC supports ongoing international work to ensure that the growth of DeFi applications is met with a robust regulatory framework.

## Box B: Broader risks from cryptoassets and associated markets

**It will be important to ensure that the full range of risks from cryptoassets and associated markets are addressed.**

There is a broader set of risks posed by cryptoassets and associated markets beyond those directly impacting financial stability, relating to consumer and investor protection, market integrity, money laundering and terrorist financing.

The pseudonymous nature of cryptoassets and associated markets means there is scope for using them to conduct illicit activities. And there have been high profile cases of criminal activity directed at users' holdings of cryptoassets. For example, in August 2021, by exploiting a vulnerability in the platform's underlying code, hackers stole US\$600 million worth of cryptoassets from the PolyNetwork DeFi application. Improved regulatory coverage in these markets could reduce the likelihood of such events and broader risks to consumer protection.

Furthermore, cryptoassets and DeFi applications are typically complex in nature, heightening the risk that retail investors do not fully understand the risks involved. These risks are amplified by the very high volatility of cryptoasset investments, and the lack of intrinsic value in many cryptoassets.

**While the FCA have primary responsibility for these risks, they do have the potential to pose indirect risks to UK financial stability.**

Currently, cryptoassets and associated markets largely fall outside of the regulatory perimeter. However, consumer protection and market integrity risks fall within the FCA's remit. Therefore, the FCA is assessing the impact cryptoassets and associated markets could have on its objectives through these risk channels.

While the FCA has primary responsibility for these risks, the FPC is mindful that they could have implications for financial stability. Increased concerns about consumer protection or market integrity could lead to a loss of confidence in cryptoassets, which may in turn undermine financial stability by weakening broader trust and integrity in the financial system.

**The FPC supports the continued work of the FCA and other authorities to understand and address these risks.**

The FCA has already taken action to manage consumer protection risks. In January 2022, the FCA proposed a significant strengthening of its rules on how high-risk financial products – including cryptoassets – are marketed.

Furthermore, citing their volatility and complexity, the FCA took the decision to ban the sale and exchange of derivatives and exchange traded notes that reference certain types of unregulated, transferable cryptoassets to retail investors in the UK from January 2021.

Following the Russian invasion of Ukraine, the FPC welcomes the [joint statement](#) by UK financial regulation authorities regarding the application of sanctions to cryptoassets. While cryptoassets are unlikely to provide a feasible way to circumvent sanctions at scale currently, the possibility of such behaviour underscores the importance of ensuring innovation in cryptoassets is accompanied by effective public policy frameworks to mitigate risks to consumer protection, market integrity, money laundering and terrorist financing, and maintain broader trust and integrity in the financial system.

The FCA has also issued a [notice](#) to firms with existing or planned exposure to cryptoassets reminding them of their key existing obligations when interacting with or exposed to cryptoassets and related services.

The Bank will continue to support the FCA in ensuring the full set of risks to consumer protection, market integrity and financial stability – including interactions between these risks – are properly managed.

## Box C: Regulatory considerations for systemic stablecoins

**Some stablecoins may pose risks that go beyond those associated with traditional payment systems.**

In contrast to existing payment systems, some stablecoins may create additional risks related to the issuance of new money-like instruments in the form of digital tokens. This creation of money-like instruments for transactional purposes poses potential risks that go beyond those usually associated with existing payment systems. It is necessary therefore to ensure that in addition to the risks of the payment system itself, the risks of this money creation aspect are also managed.

Existing payment systems transfer money that has been created by central banks or commercial banks. This ensures that the money being transferred has a robust legal claim for holders, is redeemable at par and has a stable value. Uncertainty about, or large fluctuations in, the value of stablecoins used in systemic payment chains could give rise to similar risks to financial stability associated with the operational or financial failure of the payments system itself. Absent additional regulation, some stablecoins held to be used for payments may not offer similar protections to central bank or commercial bank money.

**Both UK and international authorities are developing enhanced regulatory frameworks to address risks associated with stablecoins.**

Regulators around the world are responding to this challenge. [The CPMI-IOSCO group has published proposed draft guidance](#) on the application of international standards for payment systems to systemic stablecoin arrangements used for payments. In the US, [the President's Working Group published a report](#) in November 2021 which included an initial recommendation that stablecoins should be required to be issued by insured depository institutions. In the EU, the draft Markets in Crypto-Assets regulation aims to capture stablecoins via a modified version of the e-money framework, and would allow for additional requirements to be placed on issuers of stablecoin tokens deemed to be significant due to their size or interconnectedness.

In the UK, [the FPC has set out its expectation](#) that stablecoins used as money-like instruments in systemic payment chains should meet equivalent standards to commercial bank money in relation to stability of value, robustness of legal claim and the ability to redeem at par in fiat. The Bank noted in its [Discussion Paper on new](#)

**forms of digital money** that one important protection for commercial bank money is the backstop to compensate depositors in the event of failure.

For banks, the backstop consists of the resolution regime and the Financial Services Compensation Scheme (FSCS). This ensures the continuity of critical economic functions and the return of funds to depositors if required in the event of a bank failure, supporting financial stability. But these arrangements are typically not available outside of the traditional financial system. The UK's Cryptoasset Taskforce has been co-ordinating the work of HM Treasury, the Bank, the FCA and the Payment Systems Regulator on stablecoin regulation. The FPC also welcomes HM Treasury's proposals to bring systemic stablecoins into the Bank's regulatory remit.

Designing a resolution regime or a deposit guarantee scheme for stablecoins is challenging and is likely to take time to implement. There are likely to be a small number of systemic stablecoins, which could limit the ability to pool risks in a deposit guarantee scheme. Although the risks from stablecoins could be pooled together with those of banks, this may not be appropriate given the different business models. And a resolution regime, if required, may take a number of years to design and implement.

**On balance the FPC judges that, at this stage, a systemic stablecoin issued by a non-bank without a resolution regime and/or deposit guarantee scheme could meet its expectations, provided the Bank applied a regulatory framework that was designed to mitigate risks to financial stability.**

Stablecoins issued as tokenised bank deposits by banks, subject to the full banking regulatory regime, would be covered by the resolution regime and deposit guarantee scheme for banks. These tokenised bank deposits could meet the FPC expectations by offering the same protections as currently exist for bank deposits.

The FPC judges that it would also be possible for non-banks to issue systemic stablecoins, provided they were subject to an appropriate regulatory regime that mitigates the risks to the extent required by the FPC's expectation. The regulatory regime would need to include protections to guard sufficiently against the risks that are addressed by resolution regimes and deposit guarantee schemes in the banking system.

The FPC noted HM Treasury's proposal for a regulatory regime for stablecoins, including bringing systemic stablecoins into the Bank's payments remit. The proposal would require legislation and would allow for a non-bank regulatory regime for stablecoins. This would not include a bank-style resolution regime or a deposit

guarantee scheme. Systemic (non-bank) stablecoins that failed would instead be subject to a modified insolvency regime.

A non-bank regulatory regime would be tailored to the risks posed by systemic stablecoins, and may also allow for a smoother transition when a non-systemic stablecoin issued by a non-bank scales up and becomes systemic. The FPC notes the Bank and HM Treasury's work to design an appropriate regulatory framework to meet these objectives. The Bank is also working closely with the FCA, given the FCA's remit would be extended under HM Treasury's proposals to include stablecoin issuers and stablecoin wallet providers.

This work includes regulatory standards to ensure that coinholders' funds can be returned in full if the stablecoin issuer, or another significant part of the stablecoin arrangement (eg wallets or custodians of backing assets), fails. Systemic stablecoin issuance would likely need to be fully backed with high quality and liquid assets. If those backing assets have liquidity risk, the Bank would need to consider giving systemic stablecoins access to central bank lending facilities, as it does to the banking system, to address the risk of market-wide events which are beyond the private sector's capacity to self-insure. Capital requirements may also be needed to account for market risk.

To mitigate operational risk, the backing assets would need to be held in such a way as to protect them fully from the failure of the issuer or other significant parts of the stablecoin arrangement (eg wallets or custodians of backing assets).

Arrangements would be needed to ensure the funds can be returned rapidly and fully to coinholders, including preserving records of coin ownership and holding a reserve to cover the anticipated costs of distributing the funds. Supervisors would need to be able to verify that the coins are fully backed at all times, including preventing any unbacked issuance. Regulation would also need to ensure that there is a robust legal claim on the issuer or the underlying assets.

**The FPC judges that a systemic stablecoin that is backed by deposits with a commercial bank would introduce financial stability risks.**

The FPC notes that systemic stablecoins issued by non-banks and backed with deposits at commercial banks would pose significant financial stability risks.

It is possible that some non-systemic stablecoin issuers will adopt this model, which is currently used by most e-money providers in the UK. But, [as noted in the Bank's Discussion Paper on new forms of digital money](#), there are some significant disadvantages with this model when applied to systemic stablecoins. A run on a systemic stablecoin would cause it to withdraw funds from the safeguarding bank,

possibly prompting the latter to liquidate assets in order to fund the outflow. This kind of symbiotic relationship, known as ‘tiering’, could result in higher financial stability risks due to the interconnectedness between systemically important firms. Tiering is already common in e-money as well as in indirect access to payment systems. But the financial stability risks posed would be much greater if deposit-backed stablecoins reached systemic scale.

A further disadvantage of this model is that the safeguarding banks may need to hold more high quality liquid assets than otherwise, in which case this model could have a more adverse impact on the provision of credit than other models.

**The Bank and the FCA intend to carry out further work on the regulatory framework for stablecoins, and subject to the outcome of HM Treasury’s consultation, the Bank intends to consult on its proposed regulatory model for systemic stablecoins and systemic wallets in 2023.**

The Bank is further exploring operational and other considerations related to the access to the Bank’s balance sheet that will be required for non-bank systemic stablecoins to meet the FPC’s expectations. The Bank will also need to consider the implications for monetary stability.

The Bank, in its capacity as regulator of UK systemic payment systems, intends to consult on its proposed regulatory model for systemic stablecoin issuers and systemic stablecoin wallets in 2023, subject to the outcome of HM Treasury’s consultation.