



## BRIEFING PAPER

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# Fintech: a guide to financial technology

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### Contents:

1. What is fintech?
2. The fintech industry in the UK
3. What are the potential benefits and risks of fintech?
4. Government policies to support the fintech industry
5. Further reading



# Contents

<b>Summary</b>	<b>3</b>
<b>1. What is fintech?</b>	<b>4</b>
1.1 What do fintech companies do?	4
1.2 What 'tech' do fintech companies use?	6
1.3 A brief history of fintech	13
<b>2. The fintech industry in the UK</b>	<b>14</b>
2.1 How big is the industry?	14
2.2 How does the UK's fintech sector compare internationally?	16
2.3 Adoption of fintech by UK consumers	17
<b>3. What are the potential benefits and risks of fintech?</b>	<b>19</b>
3.1 The potential benefits of fintech	20
3.2 The potential risks of fintech	22
<b>4. Government policies to support the fintech industry</b>	<b>31</b>
4.1 The Fintech Sector Strategy – government policies from 2010-2021	31
4.2 The Kalifa Review of UK Fintech (2021)	36
4.3 Post-Kalifa announcements	38
<b>5. Further reading</b>	<b>40</b>

## Summary

Financial technology – fintech for short – refers to the interaction of financial services with new technology. In some cases, it offers consumers and businesses new ways of doing things that they may already have been doing, such as budgeting. In others, it involves introducing entirely new ideas and approaches, such as cryptocurrencies.

Fintech tends to rely on several main technologies. These include:

- big data and advanced data analytics, including artificial intelligence (AI) and machine learning
- ‘alternative data’, including social media activity and web browsing data
- Open Banking
- distributed ledger technology and the blockchain – the foundation of cryptocurrencies
- peer-to-peer platforms and crowdfunding.

The Government has described and promoted the UK as a “global FinTech leader”. In recent years, the UK has been the third largest recipient of venture capital investment in fintech. The UK may have as many as 75 fintech companies that have achieved or may achieve a valuation of over US\$1 billion.

Fintech may offer many benefits, including:

- employment and investment opportunities
- faster and more efficient processing
- more competition, personalised services and financial inclusion

But much of that new potential is matched by new risks, including:

- leaving people behind through general digital exclusion
- ‘algorithmic discrimination’ in which data analysis excludes people on the basis of characteristics or behaviour
- new challenges to effective regulation
- opening consumers to new risks of exploitation and scams.

There has also been wider concern about the risks that fintech may pose to the wider stability and security of financial markets, as well as about the influence of ‘big tech’ firms.

Government policy to date has focused on stimulating the fintech sector, while the Financial Conduct Authority (FCA) has taken some steps to protect consumers. The Kalifa Review of UK Fintech, published in February 2021, set out recommendations to further strengthen the sector – some of which the Government subsequently announced it would be taking forward, including support to help firms scale up and exploring the potential of a central bank digital currency.

# 1. What is fintech?

Financial technology – fintech for short – refers to the interaction of financial services with new technology.

The Bank of England explains the concept as follows:

The word ‘fintech’ is simply a combination of the words ‘financial’ and ‘technology’. It can be defined broadly as technology-enabled financial innovation that could result in new business models, applications, processes, or products with an associated material effect on financial markets, institutions and the provision of financial services.<sup>1</sup>

There is no clear definition of a ‘fintech firm’. In the past it was largely applied to start-up companies or those with a strong technological or innovative focus. However, more recently, mainstream and established companies are taking advantage of fintech, so the distinction is blurring.<sup>2 3</sup>

The ambiguity of the term ‘fintech’ makes it difficult to precisely define what counts as a fintech business. The following sections give some indication of the types of products and services that fintech firms offer and the types of technology that they use. This also makes it challenging to measure [the size of the sector](#).

## 1.1 What do fintech companies do?

Fintech companies offer a wide range of products and services. These can broadly be split into two categories, depending on who their ‘customer’ is: business-to-consumer (B2C) and business-to-business (B2B).<sup>4 5</sup>

Box 1 sets out an overview of the range of those products and services that fintech companies offer. Much of the B2C market is focused on giving consumers new ways of doing things that they probably already do, such as making payments, budgeting, borrowing and managing their savings or investments. The B2B market meanwhile is more focused on providing financial software to businesses, which then use these to provide services to their customers.

Financial services that have witnessed the biggest changes in recent years because of fintech include:

- **Payment services** – new ways of paying, including contactless and mobile payments, but also payment via cryptocurrency and other digital wallets.
- **Consumer banking** – banks are increasingly offering consumers new digital tools to keep control of their money, such as spending trackers and tools to block or limit spending on certain categories

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<sup>1</sup> [Embracing the promise of fintech](#), *Bank of England Quarterly Bulletin*, Q1, 2019

<sup>2</sup> PwC, [Q&A: What is FinTech?](#), April 2016 [accessed 11 March 2021]

<sup>3</sup> HM Treasury, [Fintech sector strategy: securing the future of UK fintech](#), 2018

<sup>4</sup> Ernst and Young, [UK FinTech Census 2019: a snapshot two years on](#), 2019

<sup>5</sup> Some companies also describe themselves as ‘business-to-business-to-consumer (B2B2C)’.

of spending (such as gambling). Some digital-only banks have been set up. Loan underwriting is becoming increasingly automated, while chatbots are being used to process questions from consumers.

- **Financial advice** – advanced data analytics, including AI, can be used to provide ‘robo-advice’ to consumers. This can give advice tailored to individuals about how best to invest their money. Trading of investments – via ‘algorithmic trading’ – can also be automated.
- **Insurance (‘InsurTech’)** – using big data to automate and improve insurance decisions. This includes the use of telematics (such as ‘black boxes’) to monitor driver behaviour. There have also been stories of firms allegedly using customers’ social media data to evaluate risk.<sup>6</sup>
- **Alternative finance** – crowdfunding and peer-to-peer (P2P) lending offer new ways for consumers to invest their money. Crowdfunding allows individuals to invest in an organisation, either in exchange for equity or for a reward (such as discounted products on launch). P2P lending platforms enable individuals or SMEs to lend money directly to one another.
- **Regulatory technology (RegTech)** – RegTech automates the compliance processes that financial services organisations need to meet.

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<sup>6</sup> [How nosy insurers use Facebook and your weekly shop to keep tabs on you](#), Guardian, 6 November 2016



**Box 1: What kinds of products and services do fintech companies provide?**

**Business-to-consumer (B2C)**

**Money transfer and payments**

- Online foreign exchange
- Overseas remittances
- Payout management tools
- Online digital-only banks without branches
- Non banks to transfer money
- Mobile phone payment at checkout
- Payment via cryptocurrency (e.g. bitcoin)

**Insurance (InsurTech)**

- Car insurance using telematics (black box) to monitor driver behaviour
- Insurance premium comparison sites
- Peer-to-peer (P2P) or micro-insurance

**Borrowing**

- Borrowing using online short-term loan providers
- Peer-to-peer (P2P) lending

**Financial planning**

- Online budgeting and financial planning tools
- Tools to analyse expenses and compare financial products

**Savings and investments**

- Peer-to-peer (P2P) platforms for high-interest investments
- Investments in equity crowdfunding platforms and rewards platforms
- Online investment advice (Robo-advice) and investment management
- Online stockbroking
- Top-up savings or investments
- Online spreadbetting

**Business-to-business (B2B)**

**Enterprise and Regulatory Technology (RegTech)**

- Advanced analytics providers
- Blockchain solutions and distributed ledger technology (DLT)
- RegTech and risk management
- Core banking, insurance, asset management and capital market software
- Credit reference data
- Insurance and data analytics
- Cybersecurity
- Digital identity

**SMEs**

- Fintech lenders, including online short-term loan providers
- Foreign Exchange (FX) and business-to-business (B2B) payments
- Trade finance and supply chain solutions

**Corporates**

- Merchant acquirers and gateways
- Payment optimisation and fraud detection software
- Loyalty software providers
- Payments software
- Trade finance and supply chain solutions

Source: [EY Fintech Census 2019](#)

## 1.2 What 'tech' do fintech companies use?

The products and services that fintech companies offer are probably best understood separately from the underlying technologies that they use to deliver them. The following points present some of the main technologies involved.

### Big data and advanced data analytics, including AI and machine learning

Big data broadly refers to very high-volume datasets, such as those possessed by banks. These contain details of all customers' spending patterns and other financial behaviours. These datasets can be analysed to yield insights about consumers and make predictions about their future behaviour or circumstances.

AI (Artificial Intelligence) is a set of evolving data analytics technologies that enable computers to simulate elements of human behaviour – such as learning, reasoning and classification. This involves analysing data to

model some aspect of the world and to predict and anticipate possible future events. For more on AI, please see our briefing paper [Artificial intelligence and automation in the UK](#) (2017).

Machine learning is a type of AI in which algorithms find patterns and features in a dataset and use them to make predictions based on new data. As the algorithm is introduced to more data, it becomes more accurate. A range of algorithms may be used to produce a machine learning model, including 'regression', 'decision trees' and 'neural networks'.<sup>7</sup>

These advanced data analytics are used by fintech firms for a variety of purposes. AI may allow a company to offer automated customer support through 'chatbots', for example, and machine learning techniques can help to detect and prevent fraud or make predictions about the potential risk of lending money to a customer (credit scoring). These techniques can also be used for regulatory compliance and more automated management of investments.

### 'Alternative data'

Financial services firms are increasingly able to combine their wealth of financial information about their customers with 'alternative' forms of data, including social media activity, web browsing data and data captured from mobile phones (such as photos or calendar entries).<sup>8</sup>

The Finance Innovation Lab cites a number of examples of such data being used by fintech companies across the globe:

- Lenddo – uses “non-traditional data derived from a customer’s social data and online behaviour” to produce a score predicting an individual’s likelihood of defaulting.<sup>9</sup>
- Tala – provides loans in developing countries without the need for formal credit-scoring, relying instead on underwriting models which analyse data from customers’ smartphones. This may consider app usage, the way that customers complete their application form and even how often they call their family.<sup>10 11</sup>
- Big data scoring – combines lenders’ internal data with external sources to assess a borrower’s likely payment behaviour. External sources of data include “location based information, web search results, behavioural tracking, device technical details, mobile app data and much more.” The way that the customer completes the application form is also taken into account.<sup>12</sup>
- Vitality – using data from wearable devices, such as the Apple Watch and Fitbit wristbands, to set the cost of health insurance.<sup>13</sup>

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<sup>7</sup> See, for example: IBM, [Machine learning](#), 2020

<sup>8</sup> Finance Innovation Lab, [Lifting the lid on fintech](#), 2020

<sup>9</sup> LenddoEFL Fact Sheet, [Credit scoring: the LenddoScore](#) [accessed 11 March 2021]

<sup>10</sup> Tala, [Frequently asked questions](#) [accessed 11 March 2021]

<sup>11</sup> Privacy International, [Fintech: privacy and identity in the new data-intensive financial sector](#), November 2017

<sup>12</sup> [Big Data Scoring](#) home page [accessed 11 March 2021]

<sup>13</sup> Vitality, [Activity tracking](#) [accessed 11 March 2021]

The 'Internet of Things' (IoT) also opens a wide variety of new avenues for data to be used by financial services. More information about the IoT is available in our debate pack [Regulating the Internet of Things](#).

## Open Banking

Open Banking allows consumers to give registered third-party organisations access to their financial information in a secure manner. This lets the third-party organisation do one or both of the following:

- **View the customer's account information – for example, their transaction history.** They can use that information for a variety of purposes, such as helping to answer such questions as 'how much income and expenditure does the customer have each month?' or 'could they save money by limiting certain types of spending?'. Importantly, this is not limited to the consumer sharing data from just one account; they are able to share the data from multiple accounts and bring this information together in one place.
- **Make payments directly from the customer's account.** Third-party organisations with this permission can initiate payments from the customer's bank account. This could allow a consumer, having brought all of their bank accounts together in one app or website, to choose which account to use for a specific payment. Or the third-party could choose the best time for a payment to be made from the customer's account (for example, immediately after the customer is paid – which may be helpful for those with irregular or fluctuating incomes).

To date, more fintech firms appear to be doing the former, rather than the latter. Examples include [Moneyhub](#) – which allows users to see all their accounts in one place, analyse their spending and get advice – and [CreditLadder](#) – which identifies when people have made rental payments from their account and then reports these to credit reference agencies, thereby helping customers to improve their credit score.

All organisations using Open Banking to access or use consumers' data must register with the Financial Conduct Authority (FCA). Those that have permission just to view customer's account information are called 'Account Information Service Providers' (AISPs), while those with permission to make payments from customers' accounts are called 'Payment Initiation Service Providers' (PISPs). Registered providers are listed on the [Open Banking directory](#).

The consumer can choose which organisations they grant access to their account and connects their account by going through their banking provider's usual security procedures. Once connected, the third-party organisation can only view their account information for a limited time (the customer has to re-consent after 90 days) and the consumer can revoke their permissions at any time.

The UK's nine largest banks and building societies are all mandated to give their customers the ability to share their account information through Open Banking, while around [40 other smaller firms](#) also offer it to their customers. Data is shared through secure Application Programme Interfaces (APIs). The legislative mandate for data-sharing



comes from the EU's Second Payment Services Directive (PSD2)<sup>14</sup> but the Open Banking standards themselves have been developed by the UK's [Open Banking Implementation Entity](#).

Open Banking was introduced to encourage competition and foster innovation in the UK Personal Current Account (PCA) market, after a review by the Competition and Markets Authority in 2016.<sup>15</sup>

Before the introduction of Open Banking, some fintech firms used technology called 'screen-scraping' to view customers' account information. This essentially involved the customer handing over their banking login details to the third-party, who would then retrieve the customer's incoming and outgoing transactions from their account. While this did enable some firms to offer innovative services to consumers, there were concerns about data security and who would accept liability if a transaction were to be compromised.<sup>16</sup>

For more on Open Banking and PSD2, please see the Library's [briefing paper](#) on the subject.

The Government is also exploring how data-sharing approaches similar to Open Banking could be used in other sectors.<sup>17</sup> It describes these approaches under the umbrella term 'Smart Data' and suggests that it may have relevance in the following areas:

- **Communications** (such as telephone, broadband provision): improved product comparison, viewing all your bills in one place, or easier management across accounts, which could even be designed specifically for vulnerable consumers
- **Energy**: similar initiatives, such as automatic switching services to ensure customers get the best deals with minimal effort
- **Finance**: Smart Data could extend the benefits we have seen in banking and help consumers better navigate and manage their savings, mortgages, consumer credit, investments, pensions, and insurance
- **Retail**: enabling consumers to find better deals for large items of expenditure, such as the weekly grocery shop

The expansion of Smart Data in finance from Open Banking to other aspects of finance is also commonly called 'Open Finance'. In 2021, the FCA is expected to publish the results of a call for input on the opportunities and risks from Open Finance.<sup>18</sup>

## Cryptocurrencies, blockchain and distributed ledger technology

The Library's briefing paper on [Cryptocurrencies: Bitcoin and other exchange tokens](#) gives a detailed overview of what cryptocurrencies are and how they work. It explains them as follows:

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<sup>14</sup> See, for example: UK Finance, [Payment Services Directive 2 and open banking](#) [accessed 11 March 2021]

<sup>15</sup> Competition and Markets Authority, [Making banks work harder for you](#), 9 August 2016

<sup>16</sup> Which?, [Open banking vs screen scraping, what are my rights?](#), 4 March 2021

<sup>17</sup> Department for Business, Energy & Industrial Strategy Press Release, [Consumers and businesses to be given more control of data under new laws](#), 9 September 2020

<sup>18</sup> Financial Conduct Authority, [Call for input: open finance](#), 18 March 2020

'Cryptocurrencies' are a digital means of financial exchange. They are intended to overcome some of the perceived limitations of existing currencies and approaches to financial transactions. The 'crypto' in their name arises from the use of cryptographic encryption methods – that is, electronic methods to encode information and to ensure security.

As the briefing paper explains, the term 'cryptocurrencies' is itself contested because it exaggerates their similarity to traditional currencies. For this reason, some argue that they are more akin to assets (such as shares or investments) than to currencies and prefer to describe them as 'crypto-assets'. There are, however, other forms of crypto-assets, so financial regulators increasingly refer to cryptocurrencies as 'exchange tokens' or 'unregulated tokens'.

Bitcoin was the first cryptocurrency to be launched (in 2009) and remains the most widely used. Other cryptocurrencies are collectively known as 'altcoins'.

As Box 2 shows, the technology on which cryptocurrencies (and other crypto-assets) are built is called distributed ledger technology (DLT), with the most common form of DLT being 'blockchain'. In such technologies, a vast network of users each maintains a copy of all transactions (the ledger) and these users create a public record of transactions based on majority consensus.<sup>19</sup> This differs from traditional ledger systems, in which the recording of transactions is centralised (that is, the record of transactions is held and updated by banks).

### Box 2: Distributed ledger technology, blockchain and cryptocurrencies

#### Distributed Ledger Technology (DLT):

A type of database (e.g. of transactions) that is shared across a vast network of users and is typically in the public domain. Because all users are essentially recording all transactions at the same time, transactions can automatically be verified and confirmed into public record.

#### Blockchain:

Blocks of data about transactions that have been confirmed and recorded. Each block is linked – or 'chained' – to the preceding block, on the assumption that the previous data is correct. Blockchain is the most common version of DLT.

#### Cryptocurrencies:

All cryptocurrencies use DLT, most often blockchain, to record and store financial transactions using cryptographic encryption methods to anonymise and encode information. May also be called 'exchange tokens' or 'unregulated tokens'. Some of the best-known are Bitcoin, Ethereum (Ether) and Ripple XRP.

In many cryptocurrencies, such as Bitcoin and Ethereum (Ether), some users who maintain the ledger are rewarded for doing so by receiving new cryptocurrency. This is a process called 'mining'. These users give their computers' processing power to 'decrypt' information about new transactions, ensuring that transactions have really come from the account they appear to have come from.

<sup>19</sup> UK Government Chief Scientific Adviser, [Distributed ledger technology: beyond block chain](#), Government Office for Science, 2016; [Distributed ledger technology](#), Parliamentary Office of Science and Technology POSTbrief 28, 6 September 2018

Most cryptocurrencies, such as Bitcoin, are described as ‘permissionless’ or ‘public’ due to the fact that anyone can – in theory – take part in mining. However, other uses of blockchain technology take a different approach – known as a ‘permissioned’ distributed ledger – in which the role of controlling the ledger is limited to a smaller number of trusted organisations. This was the basis of Facebook’s Libra cryptocurrency, announced in June 2019. The initiative included other business partners within the wider Libra Association (now renamed the Diem Association).<sup>20</sup>

A further important distinction between Libra and cryptocurrencies such as Bitcoin is that Libra was planned to be “fully backed by a reserve of real assets”. This was intended to help reduce the problem of volatility that can be experienced with other cryptocurrencies. Cryptocurrencies that attempt to peg their market value to the value of other currencies or commodities in this way are known as ‘stablecoins’.<sup>21</sup>

The Bank of England – and other central banks – are working to develop central bank digital currencies (CBDCs), which may mitigate some of the consequences of widespread private money creation. As explained in our [briefing paper on the subject](#), these may use some of the same technologies as cryptocurrencies, but the key distinction is that they will be centrally-run and centrally-backed.

## Peer-to-peer platforms and crowdfunding

Peer-to-peer (P2P) fintech platforms help individuals connect with one another to achieve mutually beneficial financial goals. In many ways, they might be considered the fintech equivalent of social networks or even dating apps.

P2P lending has generally received the most attention in this space in recent years, but P2P insurance and savings are also areas of growth:

- **P2P lending** platforms act as intermediaries that connect potential borrowers with investors without the need for a traditional bank or loan company in the middle. The platform matches individuals based on their risk profile or appetite and chases the borrower for payments, where necessary. In theory, because of the reduced intermediary costs, the borrower benefits from lower interest rates, while the investor achieves higher returns on their investment.
- **P2P insurance pools** group similar individuals (such as friends, family members or those with a collective interest) who collectively insure each other’s losses. Each pays in money that is only used if someone makes a claim; otherwise, any remaining money is returned to the individuals at the end of the coverage period or may sometimes be donated to a charitable cause instead. This means that there is no insurance company keeping

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<sup>20</sup> Diem Association, [White Paper v2.0](#), April 2020

<sup>21</sup> Financial Stability Board, [Regulation, supervision and oversight of “global stablecoin” arrangements: final report and high-level recommendations](#), 13 October 2020

the money in the event of no claims (though the P2P platform charges fees instead).

- **P2P savings** platforms tend to modernise ROSCA schemes (Rotating Savings and Credit Associations<sup>22</sup>), which is a form of saving that allows a group of individuals to reach their savings goals more quickly than they would have been able to on their own. Each member of the ROSCA pays in a given amount of money – for example, ten people pay £10 per week – into a central fund. At the end of each week, this entire central pot of money – £100 in this example – is given (randomly or based on need) to one individual (who then continues to pay into the pot but can no longer withdraw money from it). Fintech offers a new way of running such schemes and may make it easier to find other people to form a group with.

Each of these approaches is subject to differences in regulation and how far funds are protected if something goes wrong – as we explore in section 4.

Crowdfunding is similar to P2P lending, although it typically matches individual investors with early-stage business ideas that need a capital injection. Unlike P2P lending – which offers investors interest in return – crowdfunding is typically either reward-based (the investor might receive a discounted product or other merchandise) or equity-based (the business gives up equity stakes in exchange for the investment). Prominent examples include Kickstarter, Crowdfunder and GoFundMe.

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<sup>22</sup> See: Money Advice Service, [Rotating Savings and Credit Associations](#) [accessed 11 March 2021]

## 1.3 A brief history of fintech

While fintech may seem like a term that has appeared relatively recently, its origins go back further than one might think. Box 3 gives a brief overview of some of the main fintech developments since the 1960s. Those developments which are related to government policy are explained in more detail in [section three](#) of this report.

### Box 3: A brief history of fintech

<b>Fintech 1.0 (1960-1988)</b>	<b>1967</b>	Barclays Bank brought out the world's first automatic teller machine at its Enfield branch
	<b>1980</b>	Wall Street began to use the term 'fintech'
	<b>1983</b>	Homelink, the world's first form of online banking, was launched by Nottingham Building Society with backing from the Bank of Scotland
<b>Fintech 2.0 (1989-2008)</b>	<b>1989</b>	The world's first direct bank (that is, without branches), First Direct, was opened in the UK by Midland Bank
	<b>1995</b>	The world's first online-only bank, Security First Network Bank (SFNB), opened in the US
	<b>1999</b>	PayPal became the world's first digital payments company of scale
	<b>2005</b>	Zopa, based in the UK, launched the world's first peer-to-peer lending company
<b>Fintech 3.0 (2009-Present)</b>	<b>2009</b>	Satoshi Nakamoto invented bitcoin, developing blockchain technology in the process. The crowdfunding platform Kickstarter was also launched
	<b>2015</b>	UK Payment Systems Regulator (PSR) launched
	<b>2016</b>	Launch of the Financial Conduct Authority's (FCA) Regulatory Sandbox, which allows businesses to test innovative ideas with real consumers.
	<b>2017</b>	The number of UK debit card payments overtook cash payments for the first time
	<b>2018</b>	Launch of UK Open Banking and the EU's Second Payment Services Directive (PSD2)
	<b>2018</b>	The UK government announces the creation of its 'Cryptoassets Taskforce'
	<b>2019</b>	Facebook published its Libra white paper, outlining plans for a new digital currency
	<b>2021</b>	Publication of the Kalifa Review of UK Fintech, which gives recommendations to support the growth of the fintech sector in the UK
	<b>2021</b>	HM Treasury and Bank of England establish Central Bank Digital Currency (CBDC) Taskforce to explore development of a potential UK CBDC

**Source:** [Global Fintech Hub Report 2020](#) and [UK FinTech State of the Nation](#) report.



## 2. The fintech industry in the UK

### 2.1 How big is the industry?

In 2019 the Department for International Trade (DIT) described the UK as a “global FinTech leader, building on the commanding role London holds as a financial services hub”.<sup>23</sup> Similarly, in January 2021, John Glen MP, Economic Secretary to the Treasury, said:

“The Government remain committed to supporting the FinTech sector. The UK is widely considered to be a leading market—probably the leading market—for starting and growing a FinTech firm, and I am proud of that reputation.”<sup>24</sup>

So how big is the fintech sector in the UK? This is a somewhat challenging question to answer, as the term ‘fintech’ is relatively ambiguous and so the size of the sector depends on how it is defined or understood. Nevertheless, various metrics can be used to give an indication of the scope of the fintech sector in the UK:

- In a joint exercise with the Treasury, DIT report that there were more than 1,600 fintech companies in the country in 2019, collectively employing 76,500 people (and predicted to grow to 105,500 by 2030)<sup>25</sup>, but it is unclear precisely how this was defined. This compared, the report said, with a total of 89,000 finance and insurance firms across the UK.
- Approximately 250 organisations are members of [Innovate Finance](#) – an “independent industry body that represents and advances the global FinTech community in the UK.”<sup>26</sup> These range from start-ups to global financial institutions (including major banks, such as Barclays).
- The UK ‘FinTech Census’, conducted by EY in early 2019, received survey responses from 224 UK-based fintech companies.<sup>27</sup> 39% of respondents had fewer than 10 UK-based employees, while a further 39% had between 11 and 50.
- The FCA has registered about 200 firms to provide Open Banking services in the UK.<sup>28</sup> It has also granted temporary registration to around 100 crypto-asset firms for anti-money laundering and counter-terrorism purposes, with an additional four already being fully registered.<sup>29 30</sup>
- According to [Dealroom.co](#) (which tracks investment in companies worldwide), the UK has 75 fintech start-ups or scale-ups with ‘unicorn’ or ‘future unicorn’ status (please see Box 4 for

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<sup>23</sup> Department for International Trade, [UK FinTech state of the nation](#), April 2019

<sup>24</sup> [Financial Services Bill](#), HC Deb 13 January 2021 c357

<sup>25</sup> Department for International Trade, [UK FinTech state of the nation](#), April 2019

<sup>26</sup> March 2021

<sup>27</sup> Ernst and Young, [UK FinTech Census 2019: a snapshot two years on](#), 2019

<sup>28</sup> See: Financial Conduct Authority, [Financial Services Register: Account Information and Payment Initiation Service Providers](#) [accessed 11 March 2021]

<sup>29</sup> Financial Conduct Authority, [Cryptoasset firms with temporary registration](#), 3 March 2021

<sup>30</sup> Financial Conduct Authority, [Financial Services Register: Registered cryptoasset firms](#) [accessed 11 March 2021]

definitions). The site also estimates that there are over 3,500 operational fintech start-ups or scale-ups based in the UK.

## Investment in UK fintech

In 2018, the UK Fintech Census found that the average value of investments in each of the UK fintech firms that responded was £20.1m.<sup>31</sup> This represents a total investment of £3.3bn across all those that responded to the survey. Much of this investment came from venture capital, which is explained below in Box 4. In 2020, total venture capital investment into the wider UK 'tech' sector was valued at \$15bn (approximately £11bn) – and nearly a third of this (32 per cent) went into fintech-related businesses.<sup>32</sup>

### Box 4: The language of investment in fintech firms

Types of company	
<b>Start-up</b>	A company in the early stages of its operations.
<b>Scale-up</b>	While there is no clear definition of when a start-up becomes a scale-up, this is a company no longer in its early stages of development. It has stronger funding in-place and is likely to experiment less with its core offering.
<b>Potential unicorn</b>	A privately-owned start-up or scale-up with a valuation between €200m and €800m.
<b>Unicorn</b>	A start-up or scale-up with a valuation exceeding \$1 billion (or €800m).
Types of investment	
<b>Angel investor</b>	Individual who provides a small amount of capital to a start-up for a stake in the company, usually before any seed round funding.
<b>Bootstrapping</b>	Where a company is funded by an entrepreneur's personal resources or the company's own revenue.
<b>Crowdfunding</b>	A way of matching many individual investors with early-stage business ideas that need a capital injection. The investor typically receives either a reward or equity in exchange for their investment.
<b>Venture capital (VC)</b>	A form of private equity investment, which targets small, high-risk, start-up companies with growth potential.
Funding rounds and support for start-ups	
<b>Round</b>	Whenever a start-up raises investment, it is described as a funding round.
<b>Seed round</b>	The first round of financing for a start-up. At this point a company is usually raising funds for proof of concept and/or to build out a prototype.
<b>Series A, B, C...</b>	Venture capital funding rounds that usually occur following seed investment. Series A will be a firm's first VC round, series B their second, and so on. Each series is typically of higher value than the series before.
<b>Incubators</b>	These offer seed funding to early stage companies, provide help with developing their business and often offer shared office space (usually in exchange for equity).
<b>Accelerator</b>	Similar to incubators but typically focus on slightly more developed propositions, helping connect them with further investment.

**Source:** Definitions adapted from [Tech Republic](#), [Medium](#), [Dealroom.co](#) and [Tech Nation](#).

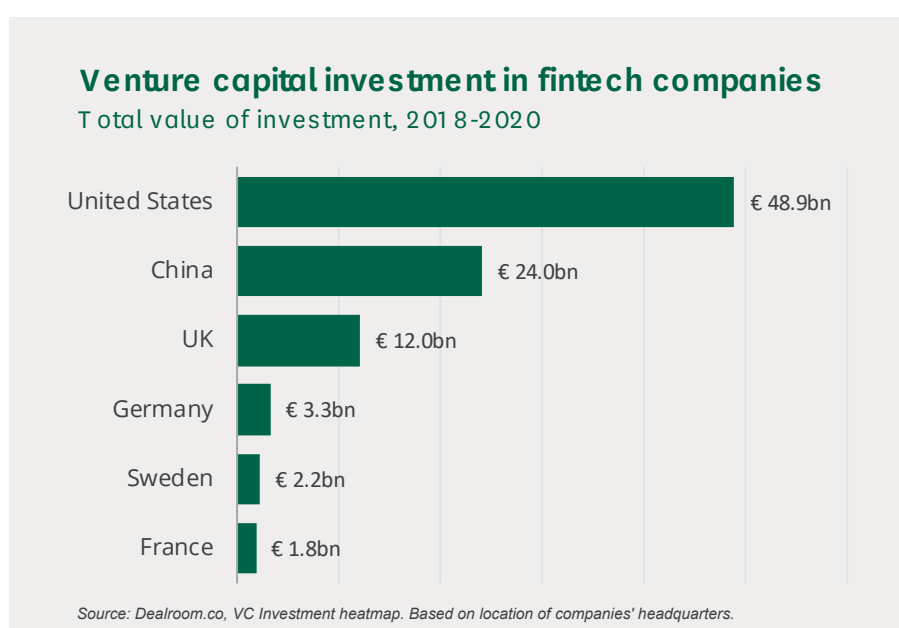
<sup>31</sup> Based on responses from 165 firms surveyed, so the total size of investment is likely to be higher. See: Ernst and Young, [UK FinTech Census 2019: a snapshot two years on](#), 2019

<sup>32</sup> Tech Nation, [UK tech ecosystem update](#), December 2020

## 2.2 How does the UK's fintech sector compare internationally?

UK government departments have described the country as a “global FinTech leader” – but how accurate is such a description?<sup>33</sup>

The [Kalifa Review](#), published in February 2021, estimated that the UK fintech sector accounts for 10% of the global market share with approximately £11bn in revenue.<sup>34</sup> According to data from dealroom.co, the UK sits third behind the US and China, having received a total of €12bn of venture capital investment into fintech between 2018 and 2020.<sup>35</sup> Sweden then separates Germany and France, mainly thanks to substantial investments made in Stockholm-based ‘buy-now-pay-later’ firm Klarna.



Venture capital is of course not the only way that a fintech start-up can be funded. Some, for example, may be ‘bootstrapped’ – meaning that the company is funded by its founder’s personal resources or through its own revenue. Nevertheless, venture capital statistics remain one of the better indicators available to us as to the size of different country’s fintech sectors.

An alternative indicator is the Global Financial Centres Index, developed by commercial think-tank Z/Yen and the China Development Institute.<sup>36</sup> This combines various international indices and metrics with a survey of over 10,000 financial firms to produce a ranking of the most important international financial centres. The 2020 list places London as the second most important financial centre in the world, close behind New

<sup>33</sup> Department for International Trade, [UK FinTech state of the nation](#), April 2019

<sup>34</sup> KPMG analysis in: Ron Kalifa, [Kalifa Review of UK Fintech](#), HM Treasury, 26 February 2021

<sup>35</sup> Dealroom.co describes itself in the following way: “Our coverage is global, with a European perspective”. The site’s data is based on public information that it has harvested, user-submitted data that it has verified, and data engineering.

<sup>36</sup> Hugh Morris, Michael Mainelli and Mike Wardle, [Global Financial Centres Index 28](#), Z/Yen and China Development Institute, September 2020

York. Shanghai, Tokyo and Hong Kong follow. The index also includes a “ranking of financial centres as competitive locations for fostering a FinTech industry”, though this is based on a sample of just 511 fintech respondents globally. In this ranking, London came fourth (behind New York, Beijing and Shanghai), while Edinburgh came 16<sup>th</sup>. No other UK cities feature in this ranking exercise.

While London has been estimated to be home to as many as 80% of the nation’s fintech firms,<sup>37</sup> other parts of the UK are also developing their own fintech sectors. For example, reports have been commissioned looking at the fintech ‘ecosystems’ in a number of other UK cities and regions: [Bristol and Bath](#), [Greater Manchester](#), [Leeds City Region](#), the [North East](#), [Northern Ireland](#) and [West Midlands](#).

[Scotland](#) is also now home to more than 140 fintech firms, while a 2019 report said that [Wales](#) has “a multitude of tech hubs, around 40 FinTech firms, a dozen corporate financial services firms headquartered in Wales and perhaps 20 other significant financial services and FinTech firms who have opened a key function in Wales.”<sup>38</sup>

### **Comparing wider ‘tech’ sectors**

Fintech is often viewed within the lens of the wider ‘tech’ sector, with the UK Government and others using investment in technology more broadly as an indication of the possible strength and potential of the fintech sector.

According to a report from Tech Nation and dealroom.co, between 2018 and 2020, the UK was the third biggest recipient of venture capital investment in the wider ‘tech’ (that is, general ‘technology’) sector. The United States and China were first and second. The UK attracted more investment (€36.6bn between 2018-2020) than any country in Europe – and indeed more than Germany (€17.3bn) and France (€14.4bn) combined. The UK is also reported to have substantially more tech ‘unicorns’ (a start-up company valued at over \$1bn) than other European countries, with 80 by the end of 2020. Germany had 34 and France 18.<sup>39</sup> According to Tech Nation, five of Europe’s top 20 cities for tech investment are in the UK.<sup>40</sup> These are Bristol, Cambridge, London, Oxford and Manchester. Between 2018 and 2019, Manchester was the continent’s fastest-growing major tech cluster, with investment growing from £48m to £181m in a year.

## **2.3 Adoption of fintech by UK consumers**

Another way of considering the size and spread of the UK fintech sector is to look at how far the public is using its products and services.

Our briefing paper [Protecting access to cash](#) describes how the UK population has increasingly turned its back on traditional forms of payment and moved towards digital payment methods. While this does not mean that everyone is using or able to use such technologies it does

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<sup>37</sup> HM Treasury, [Fintech sector strategy](#), 22 March 2018

<sup>38</sup> Department for International Trade, [UK FinTech state of the nation](#), April 2019

<sup>39</sup> Tech Nation, [UK tech ecosystem update](#), December 2020

<sup>40</sup> Tech Nation, [UK tech for a changing world: Tech Nation report 2020](#), March 2020

reflect the growing role that fintech is playing in the financial lives of UK consumers.

Again, the number of 'fintech adopters' in a country will depend on definitions used. A 2019 global survey for example, found that 71% of the 'digitally active' population in the UK were 'fintech adopters' (though it is unclear from the survey how many were not 'digitally active'). This was higher than Singapore (67%), Germany (64%), Australia (58%) and the United States (46%), but lower than China (87%), India (87%) and Russia (82%). In the UK – as in many other countries – the fintech adoption rate had increased rapidly in recent years; from 14% in 2015 and 42% in 2017.

The above figures are arguably based on a relatively wide definition of fintech, including use of insurance premium price comparison websites and online-only loan providers. Alternative measures, such as the following YouGov data in January 2020, suggest slightly lower levels of uptake of digital ways of managing money:

- 53% were using a mobile banking app from a traditional bank or building society
- 48% were using online banking from a traditional banking provider
- 26% were going into bank branches
- 17% were using their own methods to manage money (such as Excel or using cash as a way of budgeting)
- 8% were using an app-only bank
- 3% were using investment apps
- 2% were using budgeting apps<sup>41</sup>

The coronavirus pandemic has affected consumers' adoption of fintech solutions. Research from Nucoro, a London-based fintech company, suggests that between mid-March and mid-April 2020, around 12% of the UK population (about 6 million people) [downloaded their bank's app for the first time](#). As noted in our Insight [The rise of armchair retail trading: risks and regulation](#), there has also been a surge in the popularity of retail trading platforms and apps during the pandemic.

By September 2020, 3% of the population (two million people) were reportedly using Open Banking-enabled services.<sup>42</sup>

The FCA meanwhile estimated that 1.9 million adults in the UK owned cryptocurrencies at the start of 2020, while a further 700,000 had previously done so.<sup>43</sup> The majority (75%) held under £1,000 in cryptocurrencies.

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<sup>41</sup> Matt Palfreman, [A third of Brits don't use mobile banking](#), YouGov, 21 January 2020

<sup>42</sup> Ruby Hinchliffe, [Open banking usage numbers hit two million in UK for big nine](#), FinTech Futures, 29 September 2020

<sup>43</sup> Financial Conduct Authority, [Cryptoasset consumer research 2020](#), Research Note, 30 June 2020



### 3. What are the potential benefits and risks of fintech?

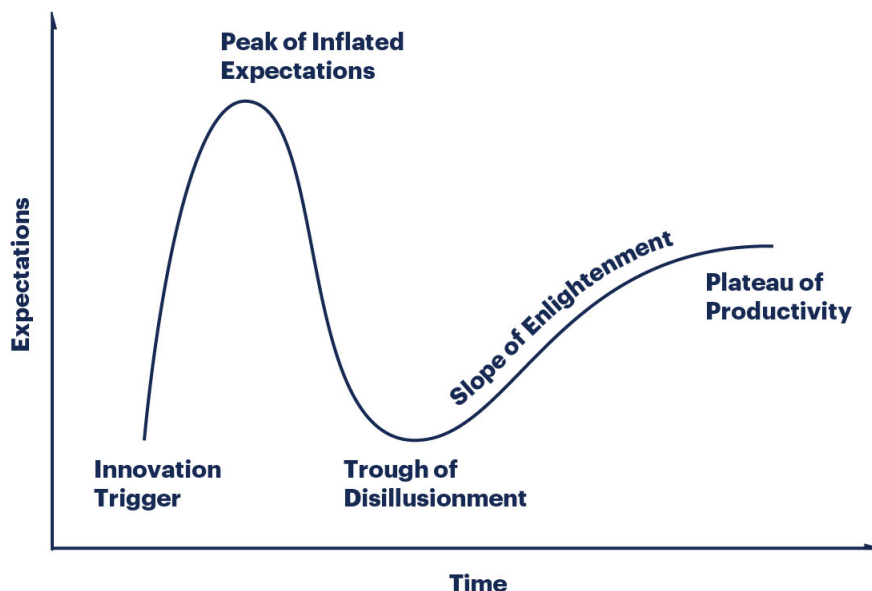
“To its advocates, this wave of innovation promises a FinTech revolution that will democratise financial services...

“The challenge for policymakers is to ensure that FinTech develops in a way that maximises the opportunities and minimises the risks for society. After all, the history of financial innovation is littered with examples that led to early booms, growing unintended consequences, and eventual busts.”

Mark Carney, former Governor of the Bank of England and Chair of the Financial Stability Board<sup>44</sup>

In a G20 speech in 2017, the then Governor of the Bank of England, Mark Carney, spoke of both the potential benefits and risks posed by fintech. He cautioned against our collective tendency towards a ‘Hype Cycle’ (see below), whereby new technologies quickly lead to a ‘peak of inflated expectations’ before crashing to the ‘trough of disillusionment’ after initial expectations are not met. Eventually, however, technology tends towards a ‘plateau of productivity’ where expectations better match reality. This seems a useful lens through which to view fintech – something with both potential and risks that may take time to fully materialise.

#### Box 5: The ‘Hype Cycle’ of new technologies – a useful way to think about fintech?



Source: [The Gartner Hype Cycle](#)

<sup>44</sup> Mark Carney, [Conference speech: The promise of FinTech - something new under the sun?](#). Deutsche Bundesbank G20 conference on “Digitising finance, financial inclusion and financial literacy”, Wiesbaden. Bank of England, 25 January 2017

This section presents a non-exhaustive list of the main benefits and risks that fintech offers. But what is clear is that there are times when a benefit of fintech may also represent a risk, often for a different group of consumers. For example, while a technology may have the potential to include new types of consumers, it also runs the risk of excluding others who don't (yet) have access to that technology. Trade-offs may also exist: for example, between speed or ease of use and data privacy or risk of scams. The challenge for policy-makers is likely to be achieving a balance that allows society to maximise the benefits of fintech, while minimising its risks.

### 3.1 The potential benefits of fintech

The proponents of fintech highlight a range of ways that it may be able to benefit society and individual consumers:

- **Economic opportunities** –The fintech industry creates jobs and attracts investment. While the Government estimates that around 76,500 people currently work in fintech, the Department of International Trade predicts that this will grow to 105,500 by 2030.<sup>45</sup>
- **Improved speed and efficiency** – Digitising and automating finance allows services that may have taken days in the past to be completed in a matter of seconds. Slow and costly settlement processes, such as those for reconciling payments, can be sped up by distributed ledger technology. This is because the technology allows each participant in the settlement to have access to the “same, distributed but synchronised data”, thus providing “a single source of truth” for all parties to work from.<sup>46</sup>
- **More resilient systems** – As the Cryptoassets Taskforce noted, distributed ledgers may be able to help make systems that are harder to break. This is because copies of the data are recorded by multiple participants at the same time, minimising the impact of data loss should there be an issue with one participant.<sup>47</sup> (As discussed later, relying on single points [may increase risks of serious widespread failure](#).)
- **More competition and choice** – in 2016, the Competition and Markets Authority (CMA) concluded that “the older and larger banks, which still account for the large majority of the retail banking market, do not have to work hard enough to win and retain customers and it is difficult for new and smaller providers to attract customers.”<sup>48</sup> Authorities such as the CMA therefore hope that new technologies and Government measures – such as Open Banking and a requirement for banks to share credit data on SMEs – will allow smaller firms to enter the market, using their ‘agile’ nature to innovate quickly and so give consumers more choice.

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<sup>45</sup> Department for International Trade, [UK FinTech state of the nation](#), April 2019

<sup>46</sup> Cryptoassets Taskforce, [Cryptoassets Taskforce: final report](#), HM Treasury, October 2018

<sup>47</sup> [Ibid.](#)

<sup>48</sup> Competition and Markets Authority, [Making banks work harder for you](#), 9 August 2016

- Better insights equals better products?** – Big data and advanced data analytics can allow firms to provide products or services that are more tailored to individual consumers. This arguably takes us back to a time when face-to-face, one-to-one banking was more common, where consumers had an individual – and therefore more personalised – relationship with banking staff. But technology enables this to be achieved at scale. In theory, an additional benefit of modern data-driven approaches is that they are more objective and therefore less prone to bias than a human would be (although [algorithmic discrimination is still a risk](#)).<sup>49</sup>
- Improved financial inclusion** – While there is a risk that [new technologies may open up new forms of exclusion](#), fintech advocates argue that they have the power to include more people in the financial system. This may be particularly true in developing economies, where mobile financial services products, such as M-Pesa in Kenya, have helped boost the rate of access to formal financial services.<sup>50</sup> (Some observers note though that M-Pesa tends to exclude women and those who are poorer or less educated.<sup>51</sup>) In the UK, big data could also improve the accuracy of credit scoring, allowing more people and businesses access to credit (and the many other services that a good credit score enables).
- Solutions to specific problems** – Box 6 sets out ways that fintech is already being used to tackle particular challenges that consumers or businesses face:

**Box 6: How is fintech trying to solve some of the problems people face?**

<b>Addresses for homeless individuals</b>	ProxyAddress – part of <a href="#">cohort 5</a> of the FCA’s regulatory sandbox – enables homeless individuals to have a proxy ‘fixed address’, which they can use when applying for basic bank accounts. This gives access to a safe store of funds and the ability to receive wage payments digitally.
<b>Efficiency in debt advice</b>	The Money and Pensions Service (MAPS) has launched a <a href="#">pilot</a> of a ‘virtual contact centre’ and use of Open Banking to speed-up the collection of information about clients’ income and spending in debt advice. It hopes this will boost efficiency, enabling more people to get help.
<b>Gambling addiction</b>	Several banks have introduced ‘gambling blocks’ that consumers can turn on if they want to stop gambling on their debit card. These use technology to block payments to a gambling company, and most feature a ‘cooling-off period’ before being able to gamble again.
<b>Green spending</b>	Climate Chain ( <a href="#">cohort 6</a> , FCA regulatory sandbox) is an app that uses Open Banking to track users’ spending habits and encourage them to spend their money on more sustainable products or services.
<b>Paying rent deposits</b>	Fronted ( <a href="#">cohort 6</a> , FCA regulatory sandbox) enables people to borrow money for rent deposits. It uses Open Banking to assess customers’ ability to repay the loan.
<b>Verifying identity digitally</b>	Onfido, Deloitte and Evernym ( <a href="#">cohort 5</a> , FCA regulatory sandbox) have tested a ‘decentralised digital identify platform’ that allows consumers to carry their digital identity from firm to firm after verifying it with one – rather than having to do repeated identity checks.

<sup>49</sup> Centre for Data Ethics and Innovation, [Review into bias in algorithmic decision-making](#), November 2020

<sup>50</sup> Ndung’u, Njuguna, [M-Pesa, a success story of digital financial inclusion: research and practitioners’ insights](#), Blavatnik School, Oxford University, 1 July 2017

<sup>51</sup> Van Hove, Leo and Dubus, Antoine, [M-Pesa and financial inclusion in Kenya: of paying comes saving?](#), *Sustainability*, 11(3), January 2019, article 568

## 3.2 The potential risks of fintech

While fintech may provide benefits, there are also risks that it also poses and challenges that may need to be resolved as the use of fintech products and services increases over time

### Challenges for consumers

- **Some may be left behind** – Some consumers may be digitally or financially excluded and therefore at risk of being unable to participate fully in society as the use of fintech becomes the norm. Our briefing paper [Protecting access to cash](#) explores some of these issues, highlighting that as many as eight million adults in the UK may struggle to cope in a cashless society. The government's [Fintech Sector Strategy](#) recognises this and sets out steps to improve digital skills, connectivity and financial inclusion.
- **Others may be excluded by automated decision-making** – Some consumers could find themselves increasingly marginalised by automated decision-making systems. There are substantial concerns about how 'algorithmic discrimination' could lead to biases in decision-making against certain groups.<sup>52</sup> As the Financial Inclusion Centre wrote in a 2018 report:

Potentially the biggest problem involves customer segmentation and profiling – a key cause of exclusion and discrimination. The combination of fintech, behavioural finance insights and big data analytics means firms and intermediaries can identify with greater precision more profitable/ more desirable/ less risky consumers and less profitable/ less desirable/ more risky/ more vulnerable consumers. This creates the conditions for greater exclusion and/or exploitation of large groups of consumers raising fundamental questions of economic and social justice.<sup>53</sup>

This could cause a range of practical problems for consumers. Low credit scores, for example, can prevent people from renting in both the private and social rented sector, and can lead to a '[poverty premium](#)' – in which 'the poor pay more' – when purchasing household goods or essential services (such as utilities or insurance).<sup>54</sup> Credit scores may also affect an individual's chances of employment, as some employers use credit reference agency searches in employment screening. A thin or non-existent credit file can make it harder to prove one's identity digitally. According to *Which?*, some people have even experienced problems accessing government services, including home COVID test kits.<sup>55</sup> In February 2021, Nationwide Building Society and the charity Fair By Design launched an incubator for start-ups looking to tackle these kinds of issues.<sup>56</sup>

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<sup>52</sup> Centre for Data Ethics and Innovation, [Review into bias in algorithmic decision-making](#), November 2020

<sup>53</sup> Financial Inclusion Centre, [Fintech - beware of 'geeks' bearing gifts?](#), January 2018

<sup>54</sup> Nationwide Building Society, [The Nationwide Incubator in partnership with Fair By Design: challenge document](#), February 2021

<sup>55</sup> Danielle Richardson, [Do you need a good credit score to get a COVID-19 home test?](#), *Which?*, 20 November 2020

<sup>56</sup> Nationwide Building Society, [The Nationwide Incubator in partnership with Fair By Design: challenge document](#), February 2021

- **Lack of regulatory protection** – When using fintech products or services consumers may not enjoy the same regulatory protections as with other financial services – such as the right to resolve complaints through the Financial Ombudsman Service – but many consumers mistakenly believe that they are protected. This was the conclusion of the [Woolard Review into the unsecured credit market](#), specifically in relation to the Buy Now Pay Later (BNPL) market (which includes firms such as Klarna). The review recommended – and the Government subsequently agreed – that BNPL services should be brought under the regulation of the FCA.<sup>57</sup>

The issue of which financial products and services fall within the FCA’s ‘regulatory perimeter’ is a common theme when it comes to fintech. Crypto-assets, for example, have relatively complex regulatory arrangements.<sup>58</sup> Broad peer-to-peer lending arrangements are regulated, but consumers’ investments are unlikely to be covered by the Financial Services Compensation Scheme (FSCS) if the platform collapses.<sup>59</sup>

Since 2019, the FCA has published an annual [Perimeter Report](#), which sets out potential challenges to its perimeter, focusing on three broad issues:

- 1 consumer (including SME) confusion over how they are protected in case things go wrong
- 2 unregulated activities undertaken by the firm affecting the FCA’s public interest objectives
- 3 swiftly evolving markets and business models

The 2020 report sets out several perimeter issues relating to fintech, including crypto-assets and the blurring of the boundary as social media companies and online retailers provide financial services.<sup>60</sup> It also raises issues in relation to the (increasingly online) advertisement of high-risk investments and argues that “it is important that online platform operators, like Google, bear clear legal liability for the financial promotions they pass on”. The FCA said that it will “continue to act where [it] can to warn consumers and firms about the risk of products and services at the edges of [its] perimeter” and that it would raise the issues contained in its report with the Economic Secretary to the Treasury early in 2021.<sup>61</sup>

- **Limited consumer understanding** – As financial products become more technologically complex, consumers may find it harder to fully understand what they are signing up to. This was, for instance, found to be the case for products offered by the Buy Now Pay Later (BNPL) sector (including firms such as Klarna and Clearpay) – which ultimately led the Government to announce

Fintech often raises questions about what products and services fall within the FCA’s regulatory perimeter.

<sup>57</sup> See our Insight article: [Buy Now Pay Later: an “urgent need” to regulate](#), Commons Library Insight, 5 February 2021

<sup>58</sup> Financial Conduct Authority, [Cryptoassets](#), 11 January 2021

<sup>59</sup> Financial Conduct Authority Press Release, [FCA confirms new rules for P2P platforms](#), 4 June 2019

<sup>60</sup> Financial Conduct Authority, [Perimeter report 2019/20](#), September 2020

<sup>61</sup> Financial Conduct Authority, [Letter to the Economic Secretary to the Treasury following publication of the London Capital and Finance and Connaught Reviews](#), 17 December 2020



that the sector would be regulated by the FCA.<sup>62</sup> Its consumer research found that some consumers perceived BNPL as equivalent to a debit card, rather than a form of credit and concluded that “there is a risk that consumers may not apply the same level of scrutiny to their decision-making as they would for other credit products, including consideration of the potential consequences of failing to repay”. Such risks may be even greater for more vulnerable consumers, such as some consumers with mental health problems who may find it harder to manage their money or control spending.<sup>63</sup>

Similar arguments have been made about crypto-assets. Consumer research for the FCA published in 2020 found that while most cryptocurrency owners appear to have reasonably high technical knowledge, “the lack of such knowledge among some presents potential consumer harm”.<sup>64</sup> In particular, there was a lack of understanding about regulatory protections – with an estimated 300,000 adults thinking their investment in cryptocurrencies would have regulatory protection.

As outlined in our Insight article [The rise of armchair retail trading: risks and regulation](#), an increasing number of consumers are trading stocks, currencies and crypto-assets using online trading platforms or trading apps. These present particular risks for consumers who invest for emotional or political reasons or because of recommendations made on social media.

- **Risk of scams** – New technologies and new financial products, along with possible regulatory, could lead to more consumers falling victim to scams and fraud. In January 2021, for example, the FCA issued a [warning](#) about investment advertisements promising high returns based on crypto-assets, and previously reported that over £27 million had been lost to crypto and foreign exchange scams in 2018/19.<sup>65</sup>

Technologies such as number spoofing – which allows scammers to pretend to be calling or texting from a financial services firm – have also become problematic. Ofcom introduced a scheme called ‘Do not originate’ in 2019. This aims to help organisations protect their phone numbers. But the consumer group Which? reported that not all banks have signed up to the scheme.<sup>66</sup> In the longer-term, Ofcom is introducing Secure Telephone Identity Revisited (STIR) that will verify phone numbers via a database – and it is also investigating the possibility of using blockchain to create an unhackable numbering database.<sup>67</sup>

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<sup>62</sup> Christopher Woolard, [The Woolard Review - a Review of Change and Innovation in the Unsecured Credit Market: report to the FCA Board](#), Financial Conduct Authority, 2 February 2021

<sup>63</sup> Merlyn Holkar and Chris Lees, [Convenience at a cost: online shopping and mental health](#), Money and Mental Health Policy Institute, 2020

<sup>64</sup> Financial Conduct Authority, [Cryptoasset consumer research 2020](#), Research Note, 30 June 2020

<sup>65</sup> Financial Conduct Authority Press Release, [Over £27 million reported lost to crypto and forex investment scams](#), 21 May 2019

<sup>66</sup> Danielle Richardson, [Who’s really calling you? An investigation into the worrying rise of ‘number spoofing’](#), Which?, 22 October 2019

<sup>67</sup> Ofcom, [Promoting trust in telephone numbers: first consultation](#), 11 April 2019

Consumer groups and the financial services industry have called on government to put the [Authorised Push Payment \(APP\) voluntary code](#) for banks onto a statutory footing, and to include fraud within the scope of its new online harms framework.<sup>68 69 70</sup> This covers scams where individuals are tricked into voluntarily sending money to the fraudster's account.

For more information on this subject, please see our briefing paper, [Banking fraud](#).

- **Other financial crime** – New technologies also open up new possibilities for crime. A 2021 briefing, for instance, explained some of the main characteristics of cryptocurrencies that can assist fraudsters: market volatility, complex concepts, decentralised control, anonymity and ease of cross-border payments.<sup>71</sup> According to the briefing, there are six cryptocurrency-based crimes (in addition to the investment scams described above) that could be achieved now or in the near future:
  - Extortion (ransomware) – “The most typical crime involves the use of malware to encrypt files on a victim’s hard drive, making it impossible for them to decrypt and access them. To regain access, the victim has to pay the criminals, typically with cryptocurrency.”
  - Pump-and-dump schemes – “A common form of market manipulation where criminals purchase quantities of low-cost stock, and then artificially inflate the price (often through misinformation) before selling off their holdings. This also happens in the cryptocurrency space.”
  - Money laundering: Bitcoin ATMs – “Bitcoin ATMs allow users to purchase cryptocurrencies in a physical location, with potentially illicitly acquired cash... the worry is that they can facilitate money laundering.”
  - Cryptojacking – “By using cryptojacking malware, criminals can hack into a computer (usually many, using a network of infected devices) and then use that machine’s computing power to mine cryptocurrency, providing them with coins at no electricity cost to themselves.”
  - Cryptocurrency theft: fake crypto wallets – “A custodial wallet provider simplifies the use of cryptocurrencies by managing the private and public keys for the user, making sending and receiving cryptocurrency a straightforward

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<sup>68</sup> UK Finance Press Release, [Criminals exploit Covid-19 as fraud moves increasingly online](#), 23 September 2020

<sup>69</sup> Money and Mental Health Policy Institute Press Release, [Money and Mental Health responds to new Online Harms Bill](#), 15 December 2020

<sup>70</sup> The Government’s ‘[Online Harms White Paper](#)’ (2020) specifies that fraudulent activity has not been included because “the government is leading separate initiatives to tackle these issues. For example, the Joint Fraud Taskforce is leading an ambitious programme of work to tackle fraud, including online fraud, through partnership between banks, law enforcement and government.”

<sup>71</sup> Eray Akartuna, Florian Hetzel and Bennett Kleinberg, [Cryptocurrencies and future crime](#), Dawes Centre for Future Crime at UCL, February 2021

task. Fake wallets can be set up... which can then steal the user's coins."

- Crypto money mules – "This form of money laundering has existed outside of cryptocurrencies, but increasingly, mules are being asked to purchase cryptocurrencies (often from Bitcoin ATMs) and ordered to send cryptocurrencies back."
- **Loss of consumer control over data** – Without adequate protections, consumers may also find it difficult to understand which organisations have access to their data and what this consists of. For example, in 2020, the Information Commissioner's Office (ICO) published its findings on the use of data by major credit reference agencies (Equifax, Experian and TransUnion). It reported that "significant 'invisible' processing took place, likely affecting millions of adults in the UK. It is 'invisible' because the individual is not aware that the organisation is collecting and using their personal data. This is against data protection law." <sup>72</sup>

<sup>73</sup>

A 2019 report highlighted similar potential issues in Open Banking with the onward sharing of consumer data, the way that data consents are explained and consumers' ability to seek redress in the event of data breaches:

Consumers must securely authenticate (SCA) to share their financial data with a third party which is authorised and regulated by the FCA. However, once obtained, the third party can onward share the data to other parties. Consumers may not be aware that they have agreed to onward sharing and the sharing can happen without authentication.

Language about the purpose and use of consent varies, meaning consumers may be unclear what data is being used for.

If a consumer's data is breached it may be difficult for a consumer to assess where the breach occurred or who caused it, making it difficult to pursue a complaint. In the first instance, consumers can complain to the Financial Ombudsman Service (FOS) but if data is breached by a body outside the perimeter, consumers can only seek individual redress through the ICO (Information Commissioner's Office). <sup>74</sup>

The report makes recommendations on these issues in relation to Open Banking – for example, through greater clarity on 'open banking dashboards' – and also welcomed a number of proposed controls on 'Smart Data' put out for consultation by BEIS in 2019.<sup>75</sup> Following consultation, the Government [announced](#) that

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<sup>72</sup> Information Commissioner's Office, [ICO takes enforcement action against Experian after data broking investigation](#), 27 October 2020

<sup>73</sup> Experian announced that it would appeal the ICO's decision: Experian, [Response to ICO Enforcement Notice in relation to UK marketing services](#), 27 October 2020

<sup>74</sup> Faith Reynolds and others, [Consumer priorities for open banking](#), Open Banking, June 2019

<sup>75</sup> Department for Business, Energy and Industrial Strategy, [Smart Data: putting consumers in control of their data and enabling innovation](#). Consultation Paper. June 2019.

it would set-up a Smart Data joint government/regulator working group to take forward action on this topic.

As the Cryptoassets Taskforce highlighted, there are likely to be tensions at times between existing data protection regulation and the use of distributed ledgers, in which multiple parties simultaneously have control over data:

Amongst other provisions, GDPR establishes a right to erasure, which might cause tension with core features of some DLT networks that offer immutable data storage (without the technical possibility of erasure). There are particular DLT solutions, which, when compared to more traditional database technologies, claim to provide a more efficient way of complying with GDPR requirements (for example, by only sharing selective data or storing data locations rather than data files on-chain). All organisations that use technologies such as DLT to process personal data must comply with the Data Protection Act 2018 and the GDPR.<sup>76</sup>

- **Manipulating consumer behaviour** –Technology could be used to exert unnecessary or excessive control over consumers' behaviours and so coerce people into complying with financial services' preferences.<sup>77</sup> People might, for example, edit or filter what they put on social media if they know that a financial business will analyse it. But the impact can go far beyond this. In 2013, a coroner expressed "real concern" that an insurer's use of satnav tracking technology and an 11pm curfew were a major factor in the deaths of two young men, killed in a car crash as they made their way home shortly before 11pm.<sup>78</sup> The driver faced a £100 penalty from his insurer if he missed the curfew. While the intention of such a policy might have been to cut the risk of accidents during night-time hours, it clearly illustrated unintended consequences of such approaches.
- **Issues when technology fails** – Consumers can have problems when the tech behind fintech malfunctions. More than 5 million payments, including 2.4 million in the UK, failed in 2018 when the VISA network experienced issues at its data centre.<sup>79</sup> Passengers have also faced extra charges on the Transport for London network when their phone battery has died before they tap out at the end of their journey.<sup>80</sup> Much more seriously, some welfare claimants in India have found themselves facing starvation after technical glitches meant that they were locked out of the country's biometric ID system.<sup>81</sup>

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<sup>76</sup> Cryptoassets Taskforce, [Cryptoassets Taskforce: final report](#), HM Treasury, October 2018 [consisting of HM Treasury, Financial Conduct Authority and Bank of England]

<sup>77</sup> Finance Innovation Lab, [Lifting the lid on fintech](#), December 2020

<sup>78</sup> [Insurance curfew blamed for fatal teenage car crash](#), Times, 11 July 2013 [paywall]

<sup>79</sup> Finextra, [VISA says 5.2m payments failed during 10 hour outage](#), 19 June 2018

<sup>80</sup> [Apple Pay fail: If your iPhone or Apple Watch battery dies on the Tube, TfL says you'll have to stump up the maximum fare](#), City A.M., 16 July 2015

<sup>81</sup> [How a glitch in India's biometric welfare system can be lethal](#), Guardian, 16 October 2019

- **Examples of other consumer issues**
  - Some consumers have seen loan firms almost empty their accounts as soon as they have been paid.<sup>82</sup> The lender SafetyNet had reportedly been using open banking technology to identify when those who owed it money had been paid and then automatically took money from customers' accounts. According to the Open Banking website, the firm uses transaction data to "[conduct] affordability assessments that aim to be more informed and realistic than those of its competitors."<sup>83</sup>
  - Some challenger banks stopped offering coronavirus business bounce back loans to SMEs because, unlike incumbent banks, they did not have sufficient money to lend out.<sup>84</sup> In the case of the challenger bank Tide, this may have affected nearly 70,000 applicants.<sup>85</sup> Unlike established banks, the smaller and newer lenders do not have access to cheaper credit offered by the Bank of England through the Term Funding Scheme (TFS). [The All-Party Parliamentary Group on Fair Business Banking has called for alternative lenders to be given direct access](#) to the Term Funding Scheme or to be lent funds by banks that do have such access. The Chair of the APPG raised the question in the House on 2 September 2020; the Prime Minister replied that this was a matter for the Bank of England.<sup>86</sup>

## Wider challenges

There are also wider – largely unanswered – questions about what new developments might mean for markets and society at-large:

- **Market stability and volatility** – In 2017, Mark Carney cautioned that the disruptive power of fintech could affect the stability of large financial institutions as they lose customer loyalty and "have less stable funding and weaker, more arms-length client relationships".<sup>87</sup> The Financial Inclusion Centre came to a similar conclusion (although more widely it questioned how far larger institutions would actually be affected):<sup>88</sup>

If, in the long term, the disruptors do consign established business models to history, this carries major transition risks for customers, employees and shareholders and the wider financial system. 'Creative destruction' might sound exciting but it is not necessarily a good idea when critical financial services are involved. Standing back and allowing nature to take its course is not an option, any transition must be managed.

<sup>82</sup> [Loans firm emptied my accounts](#), Times, 28 November 2020 [paywall]

<sup>83</sup> Open Banking, [Indigo Michael Limited](#) [accessed 11 March 2021]

<sup>84</sup> [The virus has crushed the challenger bank dream](#), Financial Times, 2 November 2020

<sup>85</sup> Money Saving Expert, [Tide halts bounce back loan lending, leaving 10,000s stuck on its waiting list](#), 8 July 2020

<sup>86</sup> [Prime Minister's Questions](#), HC Deb 2 September 2020 c160

<sup>87</sup> Mark Carney, [Conference speech: The promise of FinTech - something new under the sun?](#). Deutsche Bundesbank G20 conference on "Digitising finance, financial inclusion and financial literacy", Wiesbaden. Bank of England, 25 January 2017

<sup>88</sup> Financial Inclusion Centre, [Fintech - beware of 'geeks' bearing gifts?](#), January 2018

While incumbent financial firms face risks to their stability, new business models and products can also experience substantial volatility. The value of cryptocurrencies, for example, can vary dramatically from day to day: in 2017, the Ethereum cryptocurrency experienced a ‘flash crash’, which saw its value drop from around \$319 to 10 cents in “a matter of seconds” after a multimillion dollar sell order was made.<sup>89</sup> More recently, volatility in Bitcoin saw Elon Musk lose his title as the world’s richest person.<sup>90</sup> Finally, while peer-to-peer lending and other newer lending avenues may provide access to credit to those previously locked out, [questions remain about how stable such funding will prove during an economic downturn](#).

- **Big tech and competition issues** – While some question the ability of newer start-ups to compete with established financial institutions, they argue that the real game-changer is the entry of big tech firms (such as Facebook, Apple, Amazon and Google) into the financial services market. The Finance Innovation Lab’s 2020 report, ‘Lifting the lid on fintech’, cites Facebook’s proposed Libra cryptocurrency, Apple’s introduction of a credit card with Goldman Sachs and Google providing a digital ‘front-end’ for US financial firms as evidence that big tech’s expansion into financial services is well underway.<sup>91</sup> <sup>92</sup> The report warns that such firms will glean new, valuable insights from customers’ financial data, and present a major competitive threat to existing financial services (though the extent to which this will actually be realised is unclear).

The report also highlights how fintechs and other financial services firms are increasingly using business models similar to those used by big tech. The ‘platform’ business model – which essentially connects lots of buyers with lots of sellers (such as Ebay, Airbnb or even Facebook) – is increasingly popular, particularly within P2P lending and crowdfunding. Such models pose interesting competition questions: platforms may work best when as many buyers and sellers join the platform (as users can find everything and everyone in one place), but this model has a tendency towards the creation of large, powerful monopolies.

VISA and Mastercard, for example, control 98% of UK card payments.<sup>93</sup> The British Retail Consortium has described the firms’ increases in scheme fees as “clear demonstrations of an abuse of market dominance”.<sup>94</sup> <sup>95</sup>

To counter such competition issues, the Finance Innovation Lab argues that “non-market alternatives to big tech, run in the public interest” are necessary. It thus welcomes the Bank of England’s

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<sup>89</sup> CNBC, [Ethereum briefly crashed from \\$319 to 10 cents in seconds on one exchange after ‘multimillion dollar’ trade](#), 23 June 2017

<sup>90</sup> [Bitcoin: Elon Musk loses world’s richest title as Tesla falters](#), BBC News, 23 February 2021

<sup>91</sup> Finance Innovation Lab, [Lifting the lid on fintech](#), December 2020

<sup>92</sup> In 2021, Google also introduced a new feature in 400 US cities which allows consumers to pay for their parking and transit fares directly from within Google Maps. See: Finextra, [Google introduces pay for parking within Google maps](#), 19 February 2021

<sup>93</sup> Finance Innovation Lab, [Lifting the lid on fintech](#), December 2020

<sup>94</sup> [Ibid.](#)

<sup>95</sup> Finextra, [UK retailers attack VISA and Mastercard over card fees](#), 20 October 2020



research on the possibility of introducing a public digital currency.<sup>96</sup> The dominance of tech giants was also the focus of advice published in December 2020 by the Digital Markets Taskforce, led by the Competition and Markets Authority (CMA).<sup>97</sup> This proposes three pillars for a new regulatory regime, including legally binding codes of conduct for tech giants, “pro-competitive interventions” and “enhanced merger rules”.

- **Domino effect if part of the system fails** – Further to some of the competition issues described above, there is a risk that multiple businesses might become highly dependent on a single provider of critical infrastructure (for example, a tech firm providing cloud computing). If this provider fails then all of the businesses using them will be affected, thereby posing more of a risk to the system as a whole.

This was part of the problem when payment processor Wirecard filed for insolvency in 2000 after a hole was found in its finances (due to alleged fraud within the business<sup>98</sup>). Several other fintech firms relied on Wirecard for their own service provision, meaning that they also experienced severe knock-on effects. The FCA at the time said that it was “consulting on new requirements on the firms we supervise to help strengthen their operational resilience including, the implications for operational resilience for firms using outsourcing and other third-party service providers”.<sup>99</sup>

- **Cyber security** – The increasing interconnectedness of the financial system poses new challenges for the security of the system. In brief, the risk of data being stolen or systems being compromised rises with the number of parties involved in transferring or analysing data:

For all financial firms, the advent of FinTech materially changes operational and cyber risks. Regulators need to be alert to new single point of failure risks such as if banks come to rely on common hosts of online banking or providers of cloud computing services.

In recent years, the cyber threat to the system has grown as financial institutions have become more reliant on interconnected IT systems. As the FinTech future envisages the sharing of data across a wider set of parties, coupled with greater speed and automaticity in executing transactions, the challenges around protecting data and the integrity of the system are likely to increase. One sign of this is a growing preoccupation in the insurance industry with how best to underwrite such risks.<sup>100</sup>

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<sup>96</sup> Bank of England, [Central bank digital currencies](#), 8 April 2020

<sup>97</sup> Competition and Markets Authority, [A new pro-competition regime for digital markets: advice of the Digital Markets Taskforce](#), December 2020

<sup>98</sup> Olaf Storbeck, [Former Wirecard CEO rearrested and accused of long-running fraud](#), *Financial Times* [online, subscription required], 22 July 2020

<sup>99</sup> Financial Conduct Authority, [Wirecard can resume regulated activity](#), 29 June 2020

<sup>100</sup> Mark Carney, [Conference speech: The promise of FinTech - something new under the sun?](#). Deutsche Bundesbank G20 conference on “Digitising finance, financial inclusion and financial literacy”, Wiesbaden. Bank of England, 25 January 2017

## 4. Government policies to support the fintech industry

Successive governments have sought to encourage innovation in financial services; however, this has arguably ramped up in the latter half of the 2010s. The publication of the [Industrial Strategy](#) in 2017 in particular highlighted Government's ambition to make the UK "the world's most innovative economy" and the country "the best place to start and grow a business". It was with these aims in mind that the Government published its [Fintech Sector Strategy](#) in 2018. It built upon this with the 2021 publication of the [Kalifa Review of UK Fintech](#) and later announced further measures to support the sector in the [2021 Budget](#).

### 4.1 The Fintech Sector Strategy – government policies from 2010-2021

The Fintech Sector Strategy, published in 2018, explains the Government's view that "fintech delivers tangible benefits for customers of financial services right across the country, including lower prices, more choice, and better service." The document provides an overview of government policies since 2010 to promote the fintech sector, while also setting the Government's forward strategy.<sup>101</sup> Below is an overview of the various policy areas that were included in the strategy, as well as other relevant policy developments up until the beginning of 2021.

#### Regulation

Regulators in the UK have played a dual role in relation to fintech – actively encouraging innovation while taking steps to protect consumers from possible harm:

- **The FCA established an [Innovation Hub](#) and [Regulatory Sandbox](#), both of which help innovative firms get to market.** The Innovation Hub enables firms – whether international or domestic, regulated or non-regulated – to receive direct support from the FCA to improve the firm's understanding of the UK's regulatory framework and to help them receive FCA authorisation. The Regulatory Sandbox, meanwhile, allows businesses to test innovative propositions with real consumers, with more regulatory flexibility throughout the testing period. The sixth cohort of the sandbox launched in 2020, with around 20-30 firms having tested their ideas in each cohort. The Fintech Sector Strategy suggests that these regulatory innovations were the result of the Government giving the FCA a formal objective related to competition when it was created in 2013 – and says that both the Innovation Hub and Regulatory Sandbox "are held up as global examples of best practice". Research by Deloitte with firms going through the Sandbox suggests that it "has delivered real value to firms",

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<sup>101</sup> HM Treasury, [Fintech sector strategy](#), 22 March 2018

though it highlights that “creating a regulatory environment for FinTechs to be truly cross-border businesses is rightly the next challenge for regulators to overcome.”<sup>102</sup>

- **In 2015, the Government established a new Payments Systems Regulator (PSR).** The Fintech Sector Strategy describes this as “the first of its kind worldwide”. The PSR has statutory objectives to ensure that innovation in payment systems works in the interests of those using them or who are likely to use them. It says that its approach “will bring change to the payments industry, injecting competition and innovation where it is needed most and putting the interests of the people and businesses that use payment systems front and centre.”<sup>103</sup>
- **The Bank of England launched a Fintech Accelerator in 2016.** This has investigated new technologies to support the Bank’s own work. It has, for example, explored ways of improving privacy for participants in distributed ledger technology and the use of machine learning to detect anomalies in anonymised regulatory data.<sup>104</sup> The Bank is also conducting research on the possibility of introducing a [Central bank digital currency](#) (CBDC), which would operate alongside (rather than replace) cash and bank deposits. For more information on CBDCs please see our briefing paper [Central bank digital currencies](#).<sup>105</sup>
- **Since 2018, UK regulators have been exploring the potential of Regulatory Technology – ‘RegTech’ – for “reducing the cost of regulatory compliance”.** The FCA and Bank of England are in the third phase of a project analysing the business case for ‘Digital Regulatory Reporting’ (DRR). This, the FCA explains, could be a way of digitising regulatory compliance to make the “process more efficient, while improving the quality of the 500,000 scheduled regulatory reports the FCA alone receives every year.”<sup>106</sup> A viability assessment conducted in the second phase of the project concluded that DRR can lead to both tangible and intangible benefits for firms and regulators, but that more work is needed to “understand the costs of setting up and running DRR” and that “there are still a number of unknowns for how best to implement DRR technically”.<sup>107</sup>
- **A ‘Cryptoassets Taskforce’ was convened in 2018, which gave recommendations for the regulation of crypto-assets.** Senior leaders from government and the financial regulators, as well as a range of other industry and academic stakeholders, came together to produce a [report](#) on the risks and benefits of crypto-assets and distributed ledger

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<sup>102</sup> Deloitte EMEA Centre for Regulatory Strategy, [A journey through the FCA regulatory sandbox: the benefits, challenges, and next steps](#), 2018

<sup>103</sup> Payment Systems Regulator, [The PSR purpose](#) [accessed 11 March 2021]

<sup>104</sup> Bank of England News Release, [Bank of England FinTech Accelerator: latest proofs of concept announced; and results so far reviewed](#), 6 October 2017

<sup>105</sup> Bank of England, [Central bank digital currencies](#), 8 April 2020

<sup>106</sup> Financial Conduct Authority, [Digital regulatory reporting](#), 14 October 2020

<sup>107</sup> Digital Regulatory Reporting project, [Digital Regulatory Reporting: phase 2 viability assessment](#), Financial Conduct Authority and Bank of England, January 2020

technology.<sup>108</sup> The report sets out actions for government to take forward to ensure “high regulatory standards” while allowing innovators to “thrive”. This includes measures now taken by the FCA, including a consultation on the sale of crypto-derivatives to consumers that ultimately led to a ban on the sale of certain products.<sup>109</sup> Crypto-asset firms, however, remain largely unregulated by the FCA, except for anti-money laundering purposes. This has led the FCA to issue various warnings to consumers about the risks of investing in crypto-assets. An important part of this is alerting consumers to the fact that such investments are largely outside of the protections offered by the Financial Ombudsman Service or Financial Services Compensation Scheme if anything goes wrong.<sup>110</sup>

- **In 2021, the Government announced that Buy Now Pay Later (BNPL) firms will be brought under the regulation of the FCA.**<sup>111</sup> This followed the publication of the [Woolard Review into the unsecured credit market](#), which identified potential harms to consumers when using BNPL products (such as those offered by Klarna). For more on this issue, please see our Insight [Buy Now Pay Later: an “urgent need” to regulate](#).

But [as discussed earlier](#), there are still issues relating to the FCA’s ‘regulatory perimeter’ – that is, which financial products and services fall within the FCA’s remit and which do not. This is particularly relevant to fintech because new technologies business models and products are emerging more quickly than ever. In an effort to stay ahead, since 2019 the FCA has published an annual [Perimeter Report](#) on new challenges.

### ‘Levelling the playing field’

The Government has also taken various actions to create a ‘level playing field’ between fintech start-ups and incumbent firms. These have largely involved giving newer fintech firms the same access to financial data and systems as large financial institutions. Some of these actions include:

- **The [Small Business, Enterprise and Employment Act 2015](#) requires big banks to share their credit data on small and medium-sized enterprises (SMEs) with other lenders.** Sharing such information through credit reference agencies was meant to “make it easier for newer lenders to assess applications for loans to smaller businesses”.<sup>112</sup> During the coronavirus pandemic, however, a new challenge emerged in this area, with just 28 lenders accredited to offer Bounce Back Loans to SMEs. Fintech

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<sup>108</sup> Please also see [Cryptocurrencies: Bitcoin and other exchange tokens](#), Commons Library Briefing Paper 8780, 19 February 2020

<sup>109</sup> Financial Conduct Authority, [FCA bans the sale of crypto-derivatives to retail consumers](#), 6 October 2020

<sup>110</sup> Financial Conduct Authority, [FCA warns consumers of the risks of investments advertising high returns based on cryptoassets](#), 11 January 2021

<sup>111</sup> HM Treasury News Story, [Buy-now-pay-later products to be regulated](#), 2 February 2021

<sup>112</sup> HM Treasury, [Improving access to SME credit data: summary of responses](#), June 2014

lenders such as Tide meanwhile have struggled to offer such loans due to a lack of funds.<sup>113 114</sup>

- In 2016, the Competition and Markets Authority ordered the nine largest banks in the UK to deliver Open Banking.** As mentioned [earlier](#), this enables consumers to share their banking data with authorised third parties to facilitate access to new services. According to the [Open Banking Implementation Entity](#) (OBIE), more than two million consumers are using Open Banking, so it “is well on its way to revolutionising the way individuals and businesses can use their financial data for their benefit”.<sup>115</sup> Some businesses, however, have criticised the reliability of banks’ [APIs](#), the systems through which data is shared (though failed API calls represented 0.65% of all calls in December 2020).<sup>116 117</sup>
- The FCA is exploring the potential of ‘Open Finance’, which would extend Open Banking principles to other types of financial data.**<sup>118</sup> This would mean that consumers would also be able to share data on their savings, insurance, mortgages, investments, pensions and consumer credit products. Beyond the financial sector, the government plans to allow such ‘Smart Data’ approaches to be used in other sectors, including communications, energy and retail.<sup>119</sup>
- The [Payment Services Regulations 2017](#) enabled non-bank payment service providers to access national payment systems directly.** Before this, electronic money firms and other non-bank payment services providers could only use payment systems (such as Faster Payments, Bacs, CHAPS, VISA and LINK) through existing authorised banks. This was seen as a barrier to entry for new firms.<sup>120 121</sup> The Government suggests that the new legislation helped to create “a level playing field with incumbent financial services firms.” In 2017, the Bank of England also published its longer-term blueprint for renewing its settlement service. This outlined its vision for a “stronger, more resilient, flexible and innovative sterling settlement system”.<sup>122</sup>
- Supporting peer-to-peer lenders and other alternative finance providers.** In 2019, the FCA introduced “a package of rules and guidance to improve standards in the [peer-to-peer]

<sup>113</sup> Business Matters, [The Tide runs out for businesses looking to extend bounce back loans from challenger bank](#), 9 November 2020

<sup>114</sup> For more information, please see [Coronavirus: Business loan schemes](#), Commons Library Briefing Paper 8906, 5 March 2021

<sup>115</sup> Computer Weekly, [Numbers stack up for UK open banking three years on](#), 14 January 2021

<sup>116</sup> Aoife Morgan, [Unresponsive bank APIs causing open banking challenges](#), BobsGuide, 26 January 2021

<sup>117</sup> Open Banking, [Open banking APIs performance](#), January 2021

<sup>118</sup> Financial Conduct Authority, [Call for input: open finance](#), 18 March 2020

<sup>119</sup> Department for Business, Energy and Industrial Strategy Press Release, [Consumers and businesses to be given more control of data under new laws](#), 9 September 2020

<sup>120</sup> Andrew Moyle and others, [Bank of England opens up access to payment schemes for FinTech firms](#), Latham and Watkins LLP, 25 July 2017

<sup>121</sup> Bank of England, [Bank of England extends direct access to RTGS accounts to non-bank payment service providers](#), 19 July 2017

<sup>122</sup> Bank of England, [A blueprint for a new RTGS service for the United Kingdom](#), May 2017

sector”.<sup>123</sup> This included new rules on the information that such lenders need to give consumers and on the assessment that lenders need to make of investors’ knowledge and experience of P2P investments.

## Investment and partnerships

The Government has invested both in fintechs themselves and in organisations that work to develop start-ups and scale-ups. It has also convened various stakeholder groups and developed international partnerships to promote the sector. Its actions include:

- **Direct investments into fintech firms through [British Business Bank](#) programmes.** The British Business Bank is a government-owned business development bank. According to the Fintech Sector Strategy, by May 2017, around £395m had been directly committed to fintechs, mostly through equity programmes. Its fintech investments include Atom Bank, Billon Group, Funding Circle, MarketFinance and ThinCats. In 2020, the Chancellor launched a Future Fund loan scheme run by the British Business Bank, which was for “innovative UK companies with good potential” that had been affected by the coronavirus pandemic.<sup>124</sup> This ran until January 2021 and has since been replaced with the [Future Fund: Breakthrough scheme](#).
- **DCMS and HM Treasury funding for [Tech Nation](#), which hosts the [Fintech Delivery Panel](#) and runs other programmes to boost UK fintech.** The Panel brings together “stakeholders from across the ecosystem including financial services, fintech, investors, technology, regulators, policymakers and think tanks” to “strengthen the UK fintech ecosystem, help fintechs achieve scale, and create an innovative environment for further developments to the benefit of consumers.”
- **Helping firms to scale up through the [Inclusive Economy Partnership \(IEP\)](#).** Since 2017, the IEP – supported by the Cabinet Office and DCMS – has brought together businesses, civil society and government departments to “solve some of society’s toughest challenges”. As part of this, Nationwide Building Society led the [Open Banking for Good](#) programme, which provided funding and support to several fintech start-ups to help the “[financially squeezed](#)” segment of the population. The IEP’s ‘[Boost](#)’ programme has also provided support to a range of scale-ups, including fintech firms.
- **In 2018, the government and the Artificial Intelligence sector launched the [AI Sector Deal](#) “to boost the UK’s global position as a leader in developing AI technologies”.** One year on, the Government reported that it had “already seen significant progress”, with the creation of various bodies designed to improve the UK business environment (including the AI Council, the Office for Artificial Intelligence and the Centre for Data Ethics

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<sup>123</sup> Financial Conduct Authority, [Loan-based \(‘peer-to-peer’\) and investment-based crowdfunding platforms: feedback to CP18/20 and final rules](#), Policy Statement PS19/14, June 2019

<sup>124</sup> British Business Bank, [Future Fund scheme overview](#), 1 February 2021



and Innovation).<sup>125</sup> As part of its [industrial strategy](#) the Government also launched an [AI Grand Challenge](#), through which a range of projects were to be identified, supported and funded.

- **The government has appointed several regional envoys for fintech.** These represent and support the growth of fintech in several parts of the UK, including Wales, Scotland, Northern Ireland, the North of England and England.
- **International partnerships to promote fintech.** This includes 'Fintech Bridges' with Hong Kong, South Korea, Singapore, China and Australia, as well as the UK-Africa Fintech Partnership.<sup>126</sup> These are "detailed agreements that seek to build links between governments, regulators, and the private sector in order to open up international markets." They do this through networking opportunities, advice and mentoring, and referrals to streamline regulatory approval.<sup>127</sup> While bodies such as Innovate Finance have described the bridges positively, others have questioned whether the agreements are currently reaching their full potential.<sup>128</sup> In 2019, HM Treasury also formed the Financial Innovation Partnership with the United States Department of the Treasury. This was designed to "build on and deepen bilateral engagement on emerging trends in financial services innovation. This will include encouraging collaboration in the private sector, sharing information and expertise about regulatory practices, and promoting growth and innovation."<sup>129</sup>
- **Other support for specific sub-sectors.** This includes creating the [Insurtech Board](#) to "support the UK's position as a global leader in insurance". An [Asset Manager Authorisation Hub](#) in the FCA was created to improve the regulatory journey of an asset manager, while the government also gave its backing to the Investment Association to develop a fintech accelerator for the Asset Management Industry called [Engine](#) (formerly VeloCity).

## 4.2 The Kalifa Review of UK Fintech (2021)

At the 2020 Budget, the Chancellor announced a review of the UK fintech sector – to be led by Ron Kalifa OBE, the former CEO of Worldpay.<sup>130</sup> This would explore how to "support growth and competitiveness in the sector".

The [review](#) was published in February 2021 and offers a "roadmap" for "the UK to retain its position as world leader and continue to attract investment into the sector". It begins with the premise that "while the UK's position is well established, its future is not assured." As such, it identifies three broad threats to UK fintech: increased competition and investment from jurisdictions such as Singapore, Australia and Canada;

<sup>125</sup> Department for Business, Energy and Industrial Strategy and Department for Digital, Culture, Media and Sport, [AI Sector Deal one year on](#), 21 May 2019

<sup>126</sup> Department for International Development Press Release, [UK to support economic growth in Africa by offering City of London expertise](#), 30 August 2018

<sup>127</sup> Department for International Trade, [Building fintech bridges](#), 9 January 2020

<sup>128</sup> Christine Horton, [Are the fintech bridges working?](#), Raconteur, 15 December 2019

<sup>129</sup> HM Treasury Press Release, [The Financial Innovation Partnership](#), 29 May 2019

<sup>130</sup> HM Treasury, [Budget 2020: delivering on our promises to the British people](#), HC 121, March 2020

“regulatory uncertainty” and the impact on recruitment of international talent following Brexit; and the generally disruptive nature of the coronavirus pandemic.

The review outlines a wide range of recommendations on a number of different topics:

### **Policy and regulation**

- Deliver a new regulatory framework for emerging technology. This includes:
  - developing a comprehensive fintech strategy.
  - developing and implementing a data strategy, including common data standards, Digital ID, Smart Data and AI.
  - promoting the digitisation of financial services; for example, through developing a Central Bank Digital Currency,<sup>131</sup> supporting the digitisation of Financial Markets Infrastructure (FMI) and introducing a new regime for the regulation of crypto-assets.
- Build on the FCA’s regulatory sandbox by creating a new ‘scalebox’ which focuses on additional support to help start-ups grow once they have developed their initial concept.
- Ensure that fintech is an integral part of UK trade policy, including by continuing to establish fintech bridges with other countries.

### **Skills**

- Ensure that adults have access to high-quality short courses to help them retrain or upskill to meet the needs of fintech firms.
- Create a new visa stream to attract international talent and enhance existing immigration routes, especially to attract job creators.
- Develop future fintech talent by supporting fintech firms to host work placements for further and higher Education students; pilot fintech industry Kickstart placements; and ensure that diversity and inclusion are taken into account and monitored.

### **Investment**

- Broaden the application of existing UK state-aid tax incentive schemes, such as R&D tax credits, Enterprise Investment Scheme and Venture Capital Trusts, to encourage early stage investment.
- Create a £1bn “Fintech Growth Fund” to support high-growth companies that need more private funding to scale and expand internationally. This would be funded by the private sector but supported by the Government through regulatory concessions.
- Reform the UK listing environment to encourage more fintechs to publicly list in the UK. This could be achieved through free float reduction, dual class shares and relaxation of pre-emption rights. Such recommendations have also been made by Lord Hill in a separate 2021 review of UK Listing.<sup>132</sup>

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<sup>131</sup> See our briefing paper [Central bank digital currencies](#) for more information.

<sup>132</sup> Jonathan Hill, [UK Listing Review](#), 3 March 2021

### International attractiveness and competition

- Deliver an international action plan for fintech, which would: increase the practical and commercial support for international fintechs; build on the UK's fintech strengths and identify opportunities in growth markets; and run promotional campaigns to ensure the UK is recognised as “a fintech growth country of choice”.
- Drive international collaboration through a central UK body and launch an International Fintech Taskforce, which will “recommend and help deliver activity that optimises the impact of the UK's international fintech focus”.
- Launch an international “Fintech Credential Portfolio” (FCP), which will be a fintech standard to provide an international sign of quality, resilience and standing.

### National connectivity

- Encourage further growth in the fintech sectors of the top 10 areas of the country with emerging or established fintech ecosystems. Each area should produce a three-year strategy, and should receive centrally coordinated support (for example, to increase R&D investment in that area).

The review also proposed the creation of a Centre for Finance, Innovation and Technology to deliver many of these recommendations and to coordinate wider efforts.

Many aspects of the review have been welcomed by the fintech industry.<sup>133</sup> It has been described as a necessary “wake-up call” for the UK to avoid it “falling down the pecking order – in part thanks to Brexit”.<sup>134</sup>

Others meanwhile have criticised the report for failing to pay enough attention to issues of gender and diversity, and for “[prioritising] growth and competitiveness over social purpose and sustainability”.<sup>135 136</sup>

Lastly, concerns have been raised about the “slow pace” that the UK seems to be taking in relation to issues of digital identity and the creation of a crypto-asset regulatory regime.<sup>137</sup>

## 4.3 Post-Kalifa announcements

The [2021 Budget](#) included announcements relevant to fintech, some of which are in line with recommendations made in the Kalifa Review:

- **“Attract and retain the most highly skilled, globally mobile talent”** – through a number of changes to visa schemes,

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<sup>133</sup> Finextra, [An in-depth look into the Kalifa Fintech Review ahead of the 2021 Budget](#), 2 March 2021

<sup>134</sup> [Kalifa review: UK 'needs a wake-up call' over fintech investment](#), BBC News, 26 February 2021

<sup>135</sup> Amy French, [Kalifa's fintech review left out our industry's greatest challenge](#), AltFi, 8 March 2021

<sup>136</sup> [Kalifa Review of UK fintech fails to prioritise retail investors or encourage social purpose, review finds](#), i News, 26 February 2021

<sup>137</sup> Finextra, [An in-depth look into the Kalifa Fintech Review ahead of the 2021 Budget](#), 2 March 2021

including the introduction of an 'elite points-based visa' with a 'scaleup' stream by March 2022; review of the 'Innovator' visa for those in innovative businesses; and the launch of a Global Business Mobility visa by Spring 2022 to encourage overseas businesses to establish a presence in the UK.

- **Future Fund: Breakthrough investment for scale-ups** – this replaces the Government's previous Future Fund and involves a commitment of £375m for "a new direct co-investment product to support the scale up of the most innovative, R&D-intensive businesses. The British Business Bank will take equity in funding rounds of over £20 million led by private investors to ensure these companies can access the capital they need to grow and bring prosperity to communities across the UK."
- **FCA consultation on changes to public listing rules** – following the publication of Lord Hill's [UK Listing Review](#), which makes suggestions on encouraging innovative businesses to publicly list in the UK, the FCA will consult on possible changes. HM Treasury will also prepare an annual 'State of the City' report for Parliament, while it will respond to other recommendations from the Listing Review in due course, including calls for wider capital market reforms.
- **Increase of the contactless payment card limit** –from £45 to £100 per payment and from £100 to £300 before a customer is required to re-enter their PIN.

During [UK Fintech Week](#) in April 2021, the Chancellor announced several more key policies in this area:<sup>138</sup>

- **FCA 'scale box' for growing fintech firms** – this builds on the FCA's regulatory sandbox but rather than a focus on start-ups, it will support the development of firms that have already achieved some growth and need to scale their product to a wider market.
- **Creation of the Centre for Finance, Innovation and Technology (CFIT)** – as proposed by the Kalifa Review, this new industry-led body would "work closely with the regional hubs to identify and address sector challenges in support of fintech growth across the UK."
- **New taskforce to explore a UK central bank digital currency (CBDC)** – two new forums, including technical experts and key stakeholders, will explore the potential of introducing a CBDC, which is a digital form of central bank money (sometimes described as a 'digital banknote').<sup>139</sup>

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<sup>138</sup> HM Treasury, [Ambitious plans to boost UK fintech and financial services set out by Chancellor](#), 19 April 2021.

<sup>139</sup> See our Commons Library briefing paper '[Central bank digital currencies](#)' (CBP 9191)

## 5. Further reading

Related Commons Library Briefing Papers and Insight articles, and Parliamentary Office of Science and Technology POSTnotes:

- [Protecting access to cash](#), Commons Library Briefing Paper 9054, 22 April 2021
- [Cryptocurrencies: Bitcoin and other exchange tokens](#), Commons Library Briefing Paper 8780, 19 February 2020
- [Open Banking: banking but not as we know it?](#), Commons Library Briefing Paper 8215, 26 January 2018
- [Central bank digital currencies](#), Commons Library Briefing Paper 9191, 8 April 2021
- [The rise of armchair retail trading: risks and regulation](#), Commons Library Insight, 26 February 2021
- [Buy Now Pay Later: an “urgent need” to regulate](#), Commons Library Insight, 5 February 2021
- [Mind the gap: the digital divide and digital inclusion](#), Commons Library Insight, 1 September 2015
- [Financial Technology \(FinTech\)](#), Parliamentary Office of Science and Technology POSTnote 525, 24 May 2016

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