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The Digitisation of Money and Banking – where next for UK personal banking?¹

Professor Andy Mullineux

Professor of Financial Economics

Birmingham Business School, The University of Birmingham

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Lael Brainard, a member of the Board of Governors of the US Federal Reserve Bank, famously stated that ‘fintech’ has the potential to transform the way financial services are designed and delivered as well as the underlying processes of clearing and settlement using distributed ledger or ‘blockchain’ technology; which can also be used to create digital currencies, such as Bitcoin. Is Bitcoin money and what would be the consequences for monetary policy of central banks creating digital money using distributed ledger technologies, or otherwise? Before we contemplate the impact of the digitisation of money, we will consider the implications for personal banking of the Competition and Market Authority’s ‘Open Banking’ initiative; which aims to stimulate better provision of banking services to households and small enterprises.

‘Open Banking’ in the UK

The UK implemented the EU’s General Data Protection Regulation (GDPR) in May 2018 having introduced ‘Open Banking’, which implements the EU’s PSD2 (second Payments Services Directive) in January 2018. The UK’s Open Banking regime goes beyond the requirements for PSD2 because it contains a series of sequenced remedies imposed by the UK’s Competition and Markets Authority (CMA) following its investigation of retail banking in the UK.

The CMA remedies address issues, including barriers to accessing and assessing information held by banks on their clients, which in the past have been treated by the banks as proprietary, rather than owned by the account holders. Other issues addressed included: barriers to switching accounts to another bank; and low levels of customer engagement to overcome the strong information advantage banks have over their account holders, particularly SMEs. Open

¹ This Briefing is based on a longer report by Andy Mullineux on a ‘round table’ session at the 35th International Symposium on Money, Banking and Finance in Aix-en-Provence, France, on June 7th 2018 (entitled: “The Digitisation of Money and Banking”) published in the Royal Economic Society Newsletter, Issue no 183, October 2018, pp 12-14.

Banking was only one part of the CMA remedies package. Others included: improved switching arrangements; better information to customers; requiring text alerts regarding overdrawing; and requiring banks to set a monthly cap on charges for unarranged overdrafts.

Giving potential competitors (including 'Fintech' companies, but also 'Big Tech' - Google, Facebook Amazon et al) and 'Telcos' secure access to consumers' payments and other banking services usage data (with the customer's express permission) could transform banking. However, will customers be willing to give the necessary permissions given concerns about data security and usage - aggravated by the recent high profile Facebook/Cambridge Analytica scandal and the TSB information technology platform-switching debacle? If they do, will it be the new Fintech platforms that win the business from the banks, will the big banks simply buy up the competition and adapt, or will the Big Tech companies finally prove the traditional banks to be dinosaurs ready for extinction (as prophesied by Microsoft's Bill Gates a couple of decades ago)? The success of the financial services subsidiaries of the Big Tech companies in China suggest that the big banks elsewhere will have to deal with similar competition from Big Techs. For Big Tech (and Telcos), the most valuable data relates to consumer transactions to enable the better targeting of advertising and so their entry into the provision of payments is already well underway (Apple Pay and Google Pay, and also Amazon loans and others).

The unique feature of the UK's implementation of PSD2 is the required usage of the API (Application Programming Interface) as a standardised method of sharing data to assure greater interoperability between providers and security. 'Screen scraping', which requires password disclosure and is thus less secure than the API model, is permitted under PSD2.

The UK API-based approach may also facilitate improved household financial decision-making. Customers will find it easier to choose the financial services and products that best meet their requirements from internet-based platforms through which providers offer and help find suitable products and services. It is however likely that the less financially literate (and less wealthy) will benefit least and so there is a role for financial education to play in assuring that the most suitable products and services are provided to *all* customers. In the UK, platforms using APIs will require regulatory approval prior to operation.

PSD2 is a maximum harmonisation EU directive, and so has to be complied with, but it is technologically agnostic and so does not require the use of APIs, which the UK has opted to include in its implementation. Even if they benefit the least, the financially excluded (three million adults in the UK do not have a credit file and are 'non-banked') might nevertheless benefit as the new providers could construct credit files using transactions data. The greater the use of standardised APIs to assure interoperability, the less the opportunity for big banks to build esoteric consumer interfaces, or 'pipes'. There has been a tendency for big banks, in the UK and elsewhere, to hold back on financial innovation to maintain their market dominance. To survive, the big banks may need to develop 'open platforms' with other providers in order to serve their customers better, and some prominent banks are indeed

doing so. Such developments are likely to see the end of ‘free banking’ (for customers in credit) in the UK and inefficient and the unfair cross–subsidisation associated with it.

Crypto Assets and Monetary Policy

In the absence of central bank creation, crypto-currencies, such as Bitcoin, are likely to have little impact on the conduct of monetary policy as they were unlikely to be widely used as money and might only begin to replace fiat monies if the latter lost their credibility. Interesting scenarios would follow from central bank issuance of digital (not necessarily ‘crypto’) currencies. This would particularly be the case if the central bank digital currency (CBDC) were legal tender and issued at par with paper currency and bank reserves held at the central bank by banks. CBDC would simply be an accounting device at the wholesale level but could facilitate the issuance of fractional crypto-currencies by commercial banks. What about retail CBDC? What would be the advantage to the central banks and governments of retail issuance?

Issuance and distribution of notes and coins is costly and digitisation could progressively reduce the cost. Usage of notes and coins also affords anonymity, facilitating tax avoidance, ‘black economy’ transactions and money laundering etc. Anonymity may be seen as a citizens’ right, whilst digitisation potentially allows all transactions and transfers to be tracked, opening up a possible ‘big brother’ scenario and a need to protect privacy where society deems it appropriate. If digital money fully replaced notes and coins as fiat money (perhaps by decree) then it would become a potentially powerful monetary tool, allowing negative interest rates (or a Friedman-style ‘tax’ on money) to be paid or ‘charged’ on all accounts held at the central bank. Furthermore, all might be allowed to hold payments accounts at the central bank, with the central banks providing payments services, and possibly also loans (instead of the central bank just issuing ‘electronic banknotes’, which would be distributed by banks); or contracting such services and products out to a competitive network of providers with API interfaces. Under such extreme scenarios, traditional banks could then potentially be disintermediated, leading to an end to fractional reserve banking under which traditional banks create around 90% of the money and thus to multiple credit creation upon receipt of new deposits. Traditional banks would lose their near monopoly of credit supply built on their traditional dominance of a current account based payments system and their profitability would evaporate, leading to their extinction.

Beyond this, do we need CBDCs to be issued by more than one central bank given that the technology would allow global issuance; or should CBDCs simply be allowed to compete (perhaps with privately issued digital currencies) in a framework of competing currencies advocated long ago by Friedrich Hayek?

However, if central banks refrain from offering accounts to households, or if the households do not want them, all this is a matter for conjecture. Central Banks (and the governments that ultimately benefit from them) seem likely to try to safeguard their ‘seigniorage’ profits by

trying to prevent currency completion, but this may become more difficult over time with progressive digitisation.

In the short to medium term, however, limited CBDC issuance can be anticipated: with the public preferring banks to continue to create money through their lending activities, in response to demand. Hence, the fractional reserve banking system would survive with central banks continuing to use interest rates, perhaps supplemented by 'macro-prudential tools', to control consumer price (and perhaps asset price) inflation. The nature of the banking system itself may however be transformed by the IT revolution and the associated economies of scale in the payments system and in data management, along with the proliferation of digital platforms.

Crypto-currency technology could however be used to support more radical reform and to isolate payments systems from bank failures by ushering in a form of 'narrow banking' based on borrowing securities based on pledging loans to a distributed ledger. This sophisticated version of narrow banking would not be subject to the criticisms of previous narrow banking proposals, dating back to Irving Fisher and revived after the 2007-9 financial crisis by Laurence Kotlikoff, if the commitments to loan repayment indeed prove unbreakable.

If, however, the CBDC system is essentially simply a 'digital wallet' system, then indeed not much changes. China provides examples of widely used digital wallet systems. It has recently decreed that the reserve funds are not the property of the payments institutions. Instead, ownership belongs to the users. The providers (eg Ant Financial, a subsidiary of Alibaba; and WeChat, a subsidiary of Tencent) can no longer make a profit on these balances, whether by depositing them with commercial banks to earn interest, or using them to fund digital platform-based lending. Instead, from January 2019, the funds will ultimately be placed then with the central bank (Peoples Bank of China), where they will no longer earn interest.

At least initially, the CBDC payments accounts would sit alongside a traditional banking system, which would originate the lending in competition with new providers using digital platforms. Fractional reserve banking would continue to operate, with the banks, and possibly also 'shadow banks' and all digital wallet providers, required to hold reserves with central banks. Digital banking does not require the use of a wallet system, since direct transfers between bank accounts, not all of which need be in credit, is increasingly being utilised. An open small payments system, with a unified interoperable system payments interface accessed via APIs with common characteristics, is already operating in India. Such systems reduce the accumulation of idle balances associated with wallet-based systems.

The issuance of crypto-CBDC could be taken much further. It would be possible to use the technologies of digital currency creation to move to full reserve (narrow) banking. The distributed ledger system could address one of the principal objections to narrow banking by providing elasticity in the supply of CBDC through securitisation of bank loans by pledging them to a ledger.

Is there a need for this, or could fractional reserve banking be made to work effectively through 'Open Banking' and responsible lending? It may be better to regulate retail banks as utilities, but is this best done at the country, regional or global level in the digital age? With central banks as both the CBDC issuers and the credit suppliers, governments might revoke central bank independence, so that the current 'financial repression' is replaced by the direct use of CBDC issuance and credit creation to fund government expenditure. This was the initial purpose of the original central banks-why rely on variable seigniorage income, as opposed to direct funding?

For households (and small enterprises), Open Banking should lead to a marked enhancement in the competitive provision of banking products and services via digital platforms; provided the public can be assured that their security concerns have genuinely been addressed. This is likely to be combined with an end to 'free banking' (discussed in a previous CHASM Briefing (www.birmingham.ac.uk/Documents/college-social-sciences/social-policy/CHASM/briefing-papers/2015/bp10-is-uk-banking-better.pdf) and its distortionary and unfair cross subsidisation, as competitive prices are increasingly paid for products and services used. The digitisation of money has wider and more uncertain consequences, but it could potentially make banking systems much safer by eliminating 'fractional reserve banking'.

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