BANK OF ENGLAND

Speech

Looking after our money

Speech given by

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I want to talk tonight about money.

It is not something we talk about very much. We spend a lot of time talking about what we could, or should, do with money – who has it, who hasn't, how it is distributed and so on. But money, the thing itself, rather than what it buys or does, is not really something we think about much.

That is not surprising. Like other basic things we depend on in society – electricity, water supply, nowadays the internet – it only has to be reliable and safe. You don't have to understand how it works.

And yet, I suspect, we generally understand even less of what money, the 'thing' itself, actually is than we understand of the other basic essential technologies we use. While we use it every day, unless it goes wrong, we don't actually notice it much.

This is not new. J S Mill described money itself, for most of the time, as an 'insignificant' thing, simply a 'machine for sparing time and labour… for doing quickly and commodiously', only 'exerting an influence of its own when it gets out of order'.[1]

But it has not always been the case that we do not talk much about money itself. There have been times, times when the machinery of money itself has failed or when it has changed, that there has been debate, often long and bitter, about what money is and how it should work.

The creation of the Bank of England itself, which caused much controversy, in the late 17th century, can be seen as ingenious marriage between the King's fiscal needs and the economy's need for a larger and a state authorised money supply using the new technology of 'notes' or claims drawn on banks.[2]

The same period also saw a protracted debate about the debased state of the English coinage and how to fix the value of money, a debate involving John Locke among others and leading to a painful set of statutory and technological reforms carried out by Isaac Newton no less.

The development of modern economies has been punctuated by debates about the nature and technology of money.

[1] Milton Friedman made use of Mill's characterisation of money as a machine when describing 'what monetary policy can do' in his seminal address to the American Economic Association in 1967.

[2] In 17th century England, goldsmiths would take custody of their customers' gold and issue a paper note in receipt. These notes evolved to become payable to "the bearer" rather than just the original depositor making it more convenient for people to carry and exchange the paper notes, rather than the underlying gold. Realising that it was highly unlikely that all of their customers would want to withdraw all of their gold at any point in time, goldsmiths soon began to issue more notes than the value of the gold in their vaults, by making loans. Thus goldsmiths formed the basis of modern banks, and could create money in much the same way as banks do now.

We are not, I am pleased to say, seeing today the sorts of issues that arise when the 'machine' of money, to use Mill's words, 'gets out of order'. But we are seeing changes in the technologies that support money in our economy.

And given, as I will explain, that the Bank of England's role is essentially the stewardship of the money of the UK, that is something we need to understand and to which we need to be ready to respond – calmly and carefully.

Before discussing some of these changes and the role of the Bank, it is worth dwelling a little on what money actually is.

This being the PPE society, I am sure you know the standard answer: money, as you learn on an economics course, has to be *all* of three things:

- A means of payment – everyone has to be able to buy things with it;
- A store of value – everyone has to be able to hold their wealth in it; and
- A unit of account – everyone has to use it as a common measure of the economic value of things.

This is as good a practical description as you can get, though defining the boundaries is not easy, as monetary statisticians know.[3]

It is, essentially, a description of what money *does* rather than what money actually *is.* Mill and Friedman describe money as a machine but perhaps a better description is a technology.

But it is not a physical technology – metallic, electronic or otherwise, though its embodiment may take any number of physical forms.[4] It is in the end, a social convention or what has been called a 'social technology', by which we create, hold, use and measure claims on each other.[5]

[3] For a discussion, see 'Proposals to modify the measurement of broad money in the United Kingdom: a user consultation' by Burgess, S and Janssen, N. Bank of England Quarterly Bulletin, 2007 Q3
[4] The pacific island of Yap historically used carved stones as a form of money. These stones could be as large as 12 feet in diameter and represented a value determined by both by the stone's size, the quality of its craftsmanship and the history associated it.
[5] See for example, 'Money: the unauthorised biography' by Felix Martin.

Societies do not need to have such social technology – there are examples in history of quite advanced societies that have not used it.[6] But modern economies and the changes to living standards to which we have become accustomed would almost certainly be impossible without it.

This social technology is of course supported by other technologies - physical, legal and institutional. But these can be very different in different societies and they evolve and change over time.

The claims we hold on each other and exchange can be expressed in physical form, like coins or as records in a paper or an electronic ledger. They can be issued or authorised by the state and governed by law - but they do not have to be.

In the end, what counts is that the social convention that is money continues to hold. When it fails, when it gets 'out of order', the damage to society can be very great.

And though money can exist without them and although they can vary, what I have called the supporting technologies matter hugely. The role of the physical forms of money, of the transaction systems, and of the legal and institutional frameworks is to make the social technology function as safely and efficiently as possible to serve societies' needs.

By the same token, if they are abused or deteriorate, as happened to the coinage in Newton's day or the banking system in the US, in the great depression, the underlying social technology of money is harmed – it gets out of order and the damage can be very great.

The money of the UK, Sterling, is implemented and supported by a range of technologies.

Only about 3% of the money we use is directly issued by the state. That comprises the £80bn in notes and coins – effectively claims on the Bank of England (banknotes) and the Crown (coins).[7] There is another £470bn of state issued money, but it is not in general circulation; it comprises the deposits that private banks hold in their (electronic) accounts at the Bank of England – the claims on the Bank of England that banks exchange to settle transactions with each other.

[6] For instance, before the arrival of the Spanish colonist, the Incan economy functioned without a formal form of money. Instead, Incans were required to work a number of days per year on public projects and in return the state provided them with all they required in terms of food and materials, leading to little to no trade within the domestic economy. Ancient Mesopotamia did not have a circulating currency as its means of payment - coinage only appeared around 2000 years later. Instead these civilisations had a system of ledger-based accounts of mutual debits and credits, typically denominated in terms of agricultural commodities.

[7] Only the Bank of England issues banknotes in England and Wales, but seven commercial banks in Scotland and Northern Ireland can also issue banknotes, the total value of these notes in circulation is £7bn. The seven banks must, by law, set aside assets that are worth at least the value of all of the banknotes they have in circulation. This ensures that people with genuine banknotes issued by the seven banks receive a level of protection similar to people who have genuine Bank of England banknotes.

The remaining 97% of the money held and used by the public takes the form not of notes and coin but of claims on the private banks in which we all store our money in payment accounts. When we use a plastic card, a cheque, a bank transfer – as we do for over 95% of the £7½tn of transactions by value every year in the economy – we are exchanging our claims on our banks.

This is sometimes called 'private' money as opposed to 'public' or state issued money. That is in my view a rather misleading description, for two reasons.

The first is that these claims are denominated in Sterling, the 'unit of account' in the UK, the common measuring stick of economic value that we all accept, that is governed by the Bank of England under the authority of Parliament. The Bank's Monetary Policy Committee is charged with ensuring the stability of the currency's value in terms of what it can buy.

The second is that the private banks that hold our transactional accounts (i.e. take deposits) and create money by issuing claims on themselves, have to operate within a comprehensive legal and regulatory framework – supervised by the Bank of England and the FCA.

This framework itself has been greatly strengthened since the financial crisis. It is designed to ensure that the banks that are authorised to take deposits and issue claims on themselves in return, are robust and can absorb losses.

They have access to the lending facilities of the Bank of England to meet any shortages of liquidity.

Up to £85,000 of deposits are protected by a statutory deposit guarantee scheme paid for by the banking industry. Banks are also now subject to 'resolution' requirements to ensure that in the unlikely event of failure they can be stabilised and subsequently broken up, sold or wound down to the degree necessary while protecting depositors' ability to make and receive payments – and without requiring taxpayer money.

The payment systems through which claims on private banks are exchanged, are likewise supervised by the Bank of England. And, as I have noted, when private banks settle the claims they have on each other, that happens in 'public' money, by exchanging their claims on the Bank of England.

There have, of course, been examples, as in the US 'free banking' era of the mid 1800s, of private money operating outside the supporting technologies of public institutions and regulation. But that is not the case in the UK today.

So rather than talk of 'private money', it is I think more accurate to talk of money issued by and transacted through publicly authorised firms.

You will have noted that I keep coming back to the Bank of England.

There are many ways to describe the role of the Bank as a public institution serving the people of the United Kingdom. But in this context, perhaps the best is that our role is the stewardship in the UK of the social technology of money or, in Mill's words, of the 'machine'.

Our statutory objectives, to ensure monetary and financial stability, are in effect to prevent the technology getting out of order. The first sets our responsibility for keeping confidence in the 'unit of account' of sterling. The second sets our responsibility for the financial system, on which the creation of, and the transactions in, our money depend.

And of course, we are responsible also for the safety and soundness of most of the physical money, the banknotes that are used in the UK.

So the technologies that support money in the UK are central to our purpose and we need to assess how changes in those technologies – physical, legal, institutional (public and private) will affect that purpose.

Against that background, I want to pick up two changes in the technologies supporting our money.
I am not referring here to Bitcoin or crypto-currencies, on which so much ink (physical and virtual) has been expended recently.

I want rather to talk about two related developments that are actually happening or about to happen. The first is the growing use of non-cash technologies for small value payments. And the second is the change to the way we manage and use our payment accounts at banks, the form in which most of us hold our money.

As I noted, some £550bn, 20%, of the money in the UK is issued by the public sector. A very small amount of this, by value, comprises the coins issued by the Royal Mint. The rest is Bank of England money.
Bank of England money is used at the extreme ends of the payments hierarchy – for the very largest and for the very smallest transactions.

At the top end, the very large payments that private banks make to settle their claims on each other must be made in 'Bank of England' money by transfers between the banks' reserve accounts at the Bank of England. This happens over an electronic payment system, the Real Time Gross Settlement (RTGS) system operated by the Bank of England. The objective is to reduce risk in the payment system.

At the other end, state issued 'cash' – notes and coin – is used mainly for the smaller value payments that settle the bulk of transactions in our economy.

That has not always been the case. At the end of the 1970s, 90-95% of payments by volume in the economy were made using cash.[8]

Private money, in the form of cheques, bank transfers and more recently credit and debit cards were simply too expensive and too cumbersome to use for small value payments.

The trend, however, has been away from cash towards a greater use of private bank money in the economy. The spread of credit and debit card technology meant that by 2000, cash payments accounted for less than 75% of payments by volume.[9]

And a number of recent inter-linked developments in what I have called the technologies that support our money may be driving an acceleration of that trend.

New regulations have reduced the cost of credit and debit card transactions by capping the fees that card companies and banks can charge merchants.

Parliament has established the Payment System Regulator, a new economic regulator, to improve competition and innovation in the payment systems, through which payments using bank accounts are made hitherto dominated by the large banks,

To support greater competition and innovation, the Bank of England has widened access to RTGS, the high value settlement system, so that large non-bank payment service providers can access it directly rather than having to go through the banks with whom they are in competition.[10]

At the same time, the introduction of electronic technology, Near Field Communication, has allowed the development of contactless payments and reduced the 'hassle' of making small value card payments and enabled smart phones to be used as payment devices.

And of course, more commerce is migrating to the internet where physical cash simply cannot be used. Internet sales now account for over 15% of retail sales.

We are, as a result, seeing important changes in the way we use money as a means of payment.

New players, from the largest technology companies to challenger banks and internet startups are coming into the various elements of the transaction chain. And there seem to be changes in the way we use cash.

[8] 'Payment systems in eleven developed countries' Feb 1980, BIS
[9] UK Payments statistics, published by the Payments Council
[10] Under specified conditions: the Bank of England set these out publically in July 2017: 'Access to UK Payment Schemes for Non-Bank Payment Service Provider'

The actual amount of cash in circulation is not going down. Indeed, over the last few years, demand for cash if anything has gone up slightly growing from about £70bn at the end of 2014 to over £80bn at end 2017.[11] Some of this demand can probably be attributed to the use of cash as a store of value – 'money under the mattress' and to the reduced cost of holding it in a low inflation, low interest rate environment.

But while demand for cash has increased, there has been some fall in recent years in the value of cash payments. This stayed pretty constant for roughly the first decade of the century, but has fallen by around 10% since then.[12]

And there have been even more significant changes in the volume of cash payments. In the latest data, the total number of cash payments fell 16% over two years.[13] It looks likely that last year, for the first time, the number of card payments overtook cash payments.

The driver of these changes is the increasing use of private bank money rather than publicly issued cash for small payments through cards, the internet and new e money providers.

It is difficult to predict how far or how fast this shift will go. Cash remains hugely important for payments in the economy. It is still used to settle nearly half of the transactions in the UK.

Although the cost of card and smartphone transactions has come down, cash remains materially the cheapest technology for small transactions. Estimates suggest that cash transactions cost retailers less than 1½ pence per transaction, or 0.15% of the value, compared to over 5 pence per transaction for debit cards 0.24% by value.

And, behaviourally, many people in the economy clearly prefer to use it for a variety of reasons. That could change quickly, as it has done in one or two countries, such as Sweden. But in many others the use of cash has proved extremely stable. For example, in Spain and Italy cash is still used for over 80% of transactions at the point of sale.[14]

Given our general responsibility for money in the UK, what do these changes in the way money is used as a means of payment mean for the Bank of England?

Our responsibility is to ensure that people can use the money of the UK to transact safely and, subject to that, as efficiently as possible and in line with their preferences.

[11] Total sterling notes and coins in circulation, excluding backing assets for commercial banknote issue in Scotland and Northern Ireland, seasonally adjusted.
[12] Statistics from Payments UK (now part of UK Finance) show that the value of cash payments were between £260bn and £270bn in each year from 2001-2010 but has fallen over recent years to £240bn in 2016.
[13] From 18.2bn payments in 2014 to 15.4bn in 2016 (Payments UK).
[14] ECB Use of Cash in Households in Euro Area Survey (2017)

The Bank of England has been very clear that it will issue cash to meet demand, as it has always done. Our investment in new cash technology, safer and longer lasting polymer notes is a demonstration of that commitment.

At the same time however we will continue support innovation and competition in the machinery for making payments in the economy.

But we also need to ensure that the private sector that increasingly provides much of the changing technology of our money as a means of payment, does so within an appropriate framework of regulation and authorisation.

Along with our sister regulator, the Financial Conduct Authority we need to ensure that those who offer payment services, new and existing players alike, in any of the links of the transaction chain, are properly authorised and can manage the risks they bear.

And that same risk, for example taking deposits and issuing claims, is treated in the same way, regardless of the business model of the firm offering the service. There needs to be a level playing field in all directions.

Developments in the way we store and manage our money.

The supporting structures of law, institutions and physical technology are also about to change in the way we hold and manage the bank accounts in which most of our money resides.

The bulk of money in the UK, as I have noted, takes the form of the £1.6tn in the tens of millions current accounts we hold in the banking system.

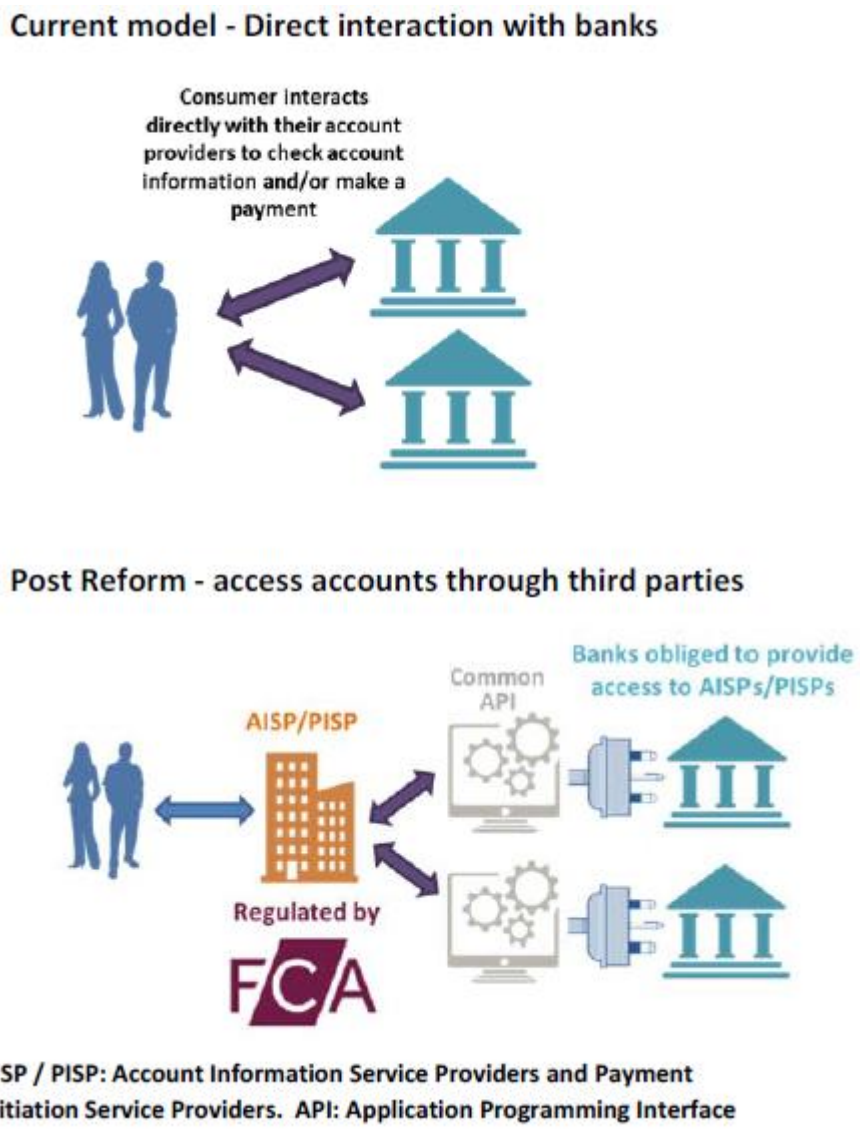
At present, we access and manage this money through direct interactions with our bank.

At the beginning of this year, the new EU Payment Services Directive (PSD2) came into force. This has been reinforced by the Open Banking requirements mandated by the Competition and Markets Authority for the major UK banks.

PSD2 requires banks to allow a third party provider of financial services to have access to a customer's online payment accounts if the customer requests it. These third party providers will have access to the account information and, again if the customer so chooses , they will be able to instruct transactions. These firms will have to be authorised in the UK by the FCA.

Open Banking requires the major banks to use a common data interface (the API). This will reduce barriers to entry by making it easier for third party providers to 'plug into' the banks' systems to manage customers' accounts on their behalf.

Figure 1: Impact of reforms



AISP / PISP: Account Information Service Providers and Payment Initiation Service Providers. API: Application Programming Interface

The reforms are designed to increase innovation, competition and security in payments and banking services – to give us better information, more competitive pricing and new services in the use of the 97% of our money provided by the private banking system.

They pave the way for improved and more secure smartphone apps, including the so-called 'aggregators' that aim to help customers shop around and switch providers of financial services frictionlessly.[15]

[15] The energy market is sometimes cited as a possible comparator for consumer switching. In that market, five and a half million customers in the UK switched provider in 2017.

Just as many of us have come to use our smartphones as a single tool for things that we used to do over multiple devices, so PSD2 and Open Banking could, at least in theory, enable apps that centralise our personal financial affairs, offer us advice on how we might more efficiently manage our finances (for example, by recommending that more money could go into a savings account, or rival bank that is offering better interest).

They could do the 'paperwork' for switching for us, and – crucially for many of us – do the searching for information, filling in forms, and setting up payments that often prove an obstacle in making financial decisions.

It's difficult to forecast how attractive these services will actually be for customers and how fast any shift might be. Change if it happens could be relatively slow. Surveys suggest the majority of customers are relatively satisfied with their banking services.[16] Around 2 million UK bank customers already use rudimentary services of this kind – PSD2 and Open Banking will enable greater security and functionality.

These innovations do not directly involve the Bank of England. However, as I noted earlier it will be supported by the greater access to the high value payment system and related accounts at the Bank of England for non-bank payment that we will in future provide.

And to the extent that new players in this area want to be banks, it will be supported by the PRA's New Bank Start-up Unit.[17]

These changes fit within our general responsibility to ensure that people can use the money of the UK to transact safely and, subject to that, as efficiently as possible and in line with their preferences.

However it is not just the new players and the new services we need to think about. The changes happening in the technologies around money will have an impact on the business model of the retail banking system that has deposit accounts at its core and that has hitherto dominated the payment and settlement machinery. It is certainly not our job to protect or preserve any particular business model for the provision of financial services.

But the banking system, operating within the framework of the Bank of England monetary policy to govern the unit of account and under the regulation and supervision of the Bank and the FCA, is at the centre of the creation and of the use of the majority of our money as a means of payment and as a store of value.

[16] Over 90% of customers described themselves as satisfied with their bank according to a survey by GfK NOP commissioned by the Competition and Markets Authority for its investigation into the personal current account sector.
[17] The unit is a joint initiative by the PRA and FCA to provide information and support for those thinking of setting up a new bank in the UK: https://www.bankofengland.co.uk/prudential-regulation/new-bank-start-up-unit

Given this role of the banking system in our economy, we have to ensure that the banks and the system as a whole are robust and have the resilience to withstand very severe risks. Our framework of regulation and our annual stress test of the banking system is designed to give this assurance.

But as well as being able to withstand stress, we also need to be confident that the banking system is forward looking – that banks understand and plan, in the way best suited to them individually, to meet future challenges to their core business model.

For that reason, last year, in addition to our regular annual stress test, we set the major banks a longer term 'exploratory scenario' exercise. This examined their strategic responses and preparedness to, among other things, increasing competitive pressures enabled by the changes I have described.

In this 'exploratory scenario', customers move their money much more frequently and swiftly than they do at present between banks and different products.

As customers become increasingly willing to move their accounts, the brand power of major banks diminishes, and savings not only switch between banks but also migrate more readily to non-banks.

By the end of the scenario, there is much greater competition for retail deposits and the aggregate amount of deposits in the system falls.

In the scenario, one consequence of this competition for retail deposits is an increase in pricing – banks have to pay more to attract scarce deposits.

At the same time, strong competition in lending markets – mortgages, loans, credit cards, etc – means that banks are not able to simply pass on the higher cost of deposits to borrowers.

As a result, in the scenario there is a marked squeeze in banks' net interest margins and hence on banks' revenues.

The scenario also poses a number of risks to banks' market share, to the liquidity of retail deposits, to fees from payment services and to the ability to retain and access customers and to the use of their current data advantage to cross sell products. If firms are depending more on technology like the cloud and third party providers, this environment could also pose cyber and operational risks.

The impacts are not of course all one-way. There is an upside for existing banks. New technology and customer relationships gives them the opportunity to provide customers with new and better products and services, to compete and, crucially, to become more efficient.

In their responses, the banks in the test judged they could maintain existing business models without increasing overall risk taking, meeting the requirements of both regulators and investors, and using technology to increase efficiency to offset lower margins.

Our assessment was that there were a number of risks to the banks' projections in the exploratory scenario. In particular, Open Banking, PSD2 and other related changes might cause greater and faster disruption to business models and the forecast increases in efficiency may be more difficult to deliver than assumed. Investors might also demand a higher return than banks' forecast in the exercise.

The Bank of England's 2017 Exploratory Scenario was not a pass or fail stress test. It was an exercise designed to assess the level and depth of banks strategic thinking about responses to future challenges, including the challenges to core business models from changes underway in the technologies around money.

The exercise provided the Financial Stability and the Prudential Regulation Committees of the Bank of England with a number of important insights. We will be following up with banks on the results of the exploratory exercise.

Conclusion

Thinking about the future in this way is a key part of our responsibility for the money of the UK.

The way we use the social technology of money has a long and very varied history. Money has manifested itself in very different forms over the centuries. The confidence that lies at the heart of the technology that is money has been supported in very different ways.

The technology has, on occasion, been abused and misused: to borrow Mill's analogy, the 'machine' has gotten 'out of order' and done serious damage.

The Bank of England has a very long association with the development of money. As I noted at the outset, it has been argued that the creation of the Bank, over three hundred years ago, was the institutional invention that brought public and private money together, providing the liquidity, efficiency and security in the money supply upon which the development of modern economies depended.

The way we exercise our responsibility for the 'machine' that is the nation's money has of course changed over time. And it will continue to evolve with society and as the 'technologies' that support money change. But the underlying responsibility to ensure the machine runs in good order will remain.