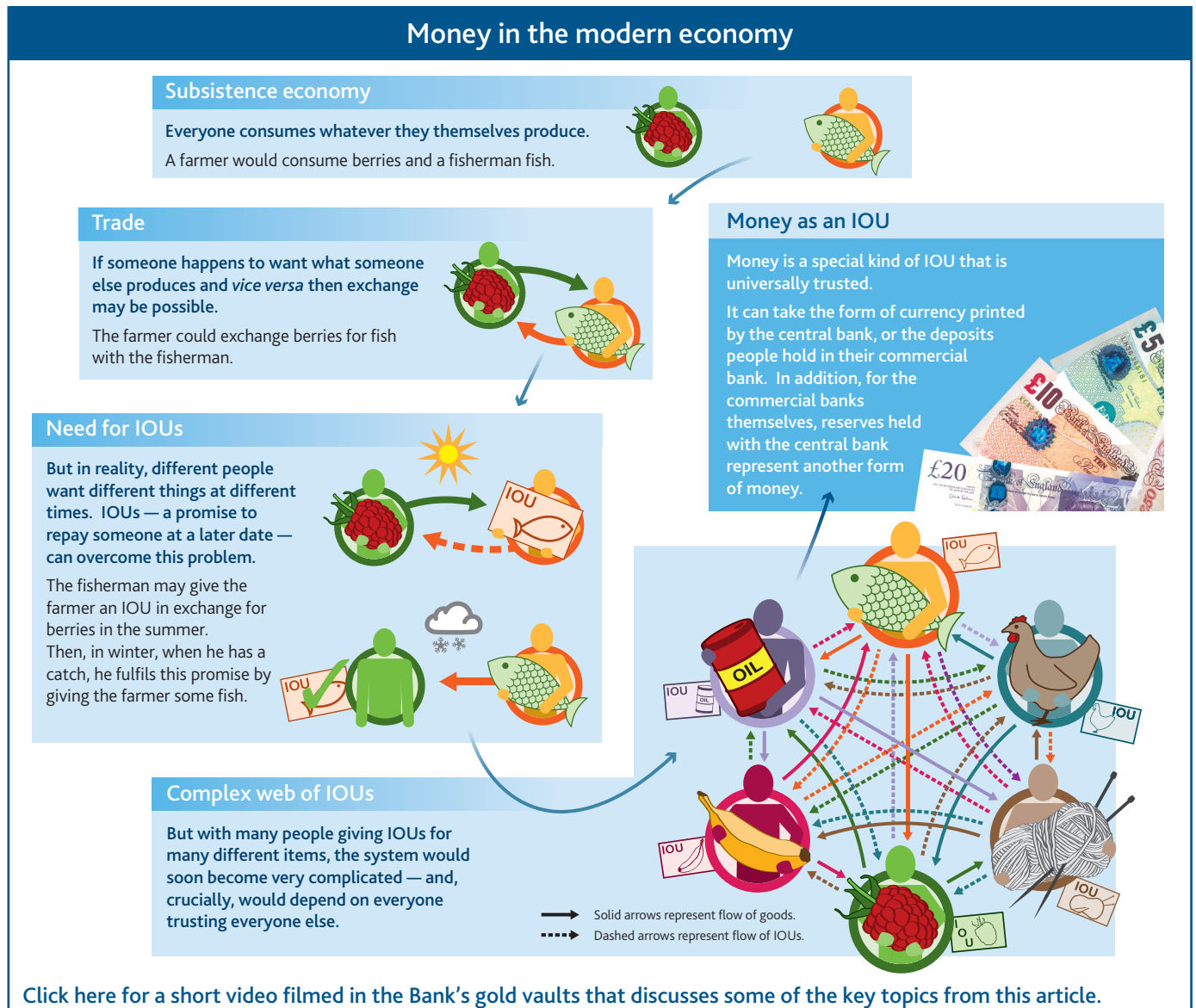


Money in the modern economy: an introduction

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- Money is essential to the workings of a modern economy, but its nature has varied substantially over time. This article provides an introduction to what money is today.
- Money today is a type of IOU, but one that is special because everyone in the economy trusts that it will be accepted by other people in exchange for goods and services.
- There are three main types of money: currency, bank deposits and central bank reserves. Each represents an IOU from one sector of the economy to another. Most money in the modern economy is in the form of bank deposits, which are created by commercial banks themselves.



(1) The authors would like to thank Lewis Kirkham for his help in producing this article.

Most people in the world use some form of money on a daily basis to buy or sell goods and services, to pay or get paid, or to write or settle contracts. Money is central to the workings of a modern economy. But despite its importance and widespread use, there is not universal agreement on what money actually is. That is partly because what has constituted money has varied over time and from place to place.

This article provides an introduction to the role of money in the modern economy. It does not assume any prior knowledge of economics before reading. The article begins by explaining the concept of money and what makes it special. It then sets out what counts as money in a modern economy such as the United Kingdom, where 97% of the money held by the public is in the form of deposits with banks, rather than currency.⁽¹⁾ It describes the different types of money, where they get their value from and how they are created. A box briefly outlines some recent developments in payment technologies. A companion piece to this *Bulletin* article, 'Money creation in the modern economy',⁽²⁾ describes the process of money creation in more detail, and discusses the role of monetary policy and the central bank in that process. For expository purposes this article concentrates on the United Kingdom, but the issues discussed are equally relevant to most economies today. A short video explains some of the key topics covered in this article.⁽³⁾

What counts as money?

Many different goods or assets have been used as money at some time or in some place. **Goods** are things that are valued because they satisfy people's needs or wants, such as food, clothes or books. An **asset**, such as machinery, is something that is valuable because it can be used to produce other goods or services. So which goods or assets should be described as money? One common way of defining money is through the functions it performs. This approach traditionally suggests that money should fulfil three important roles.

The first role of money is to be a **store of value** — something that is expected to retain its value in a reasonably predictable way over time. Gold or silver that was mined hundreds of years ago would still be valuable today. But perishable food would quickly become worthless as it goes bad. So gold or silver are good stores of value, but perishable food much less so.

Money's second role is to be a **unit of account** — the thing that goods and services are priced in terms of, for example on menus, contracts or price labels. In modern economies the unit of account is usually a currency, for example, the pound in the United Kingdom, but it could be a type of good instead. In the past, items would often be priced in terms of something

very common, such as staple foods ('bushels of wheat') or farm animals.

Third, money must be a **medium of exchange** — something that people hold because they plan to swap it for something else, rather than because they want the good itself. For example, in some prisoner of war camps during the Second World War, cigarettes became the medium of exchange in the absence of money.⁽⁴⁾ Even non-smokers would have been willing to exchange things for cigarettes; not because they planned to smoke the cigarettes, but because they would later be able to swap them for something that they did want.

These functions are all closely linked to each other. For example, an asset is less useful as the medium of exchange if it will not be worth as much tomorrow — that is, if it is not a good store of value. Indeed, in several countries where the traditional currency has become a poor store of value due to very high rates of price inflation, or hyperinflation, foreign currencies have come to be used as an alternative medium of exchange. For example, in the five years after the end of the First World War, prices of goods in German marks doubled 38 times — meaning that something that cost one mark in 1918 would have cost over 300 billion marks in 1923.⁽⁵⁾ As a result, some people in Germany at the time began to use other currencies to buy and sell things instead. To make sure sterling does not lose its usefulness in exchange, one of the Bank of England's objectives is to safeguard the value of the currency. Although the medium of exchange needs to be a good store of value, there are many good stores of value that are not good media of exchange.⁽⁶⁾ Houses, for example, tend to remain valuable over quite long periods of time, but cannot be easily passed around as payment.

Similarly, it is usually efficient for the medium of exchange in the economy to also be the unit of account.⁽⁷⁾ If UK shops priced items in US dollars, while still accepting payment only in sterling, customers would have to know the sterling-dollar exchange rate every time they wanted to buy something. This would take time and effort on the part of the customers. So in most countries today shops price in terms of whatever currency is the medium of exchange: pounds sterling in the United Kingdom.⁽⁸⁾

(1) As of December 2013. Throughout this article 'banks' and 'commercial banks' are used to refer to banks and building societies together.

(2) See pages 14–27 in this *Bulletin*.

(3) See www.youtube.com/watch?v=ziTE32hiWdk.

(4) See Radford (1945).

(5) See Sargent (1982).

(6) See Ostroy and Starr (1990).

(7) Brunner and Meltzer (1971) give a detailed exposition of how using an asset as the unit of account can support its use as the medium of exchange.

(8) This has not always been true in many countries, and in some places today there are still separate media of exchange and units of account for some transactions. Doepke and Schneider (2013) give several examples.

Historically, the role of money as the medium of exchange has often been viewed as its most important function by economists.⁽¹⁾ Adam Smith, one of the founding fathers of the discipline of economics and the current portrait on the £20 note, saw money as an essential part of moving from a **subsistence economy**, or autarky, to an **exchange economy**. In a subsistence economy, everyone consumes only what they produce. For example, Robinson Crusoe, stranded alone on a desert island, has no need for money as he just eats the berries he gathers and the animals he hunts.⁽²⁾ But it is more efficient for people to specialise in production, producing greater amounts of one good than they need themselves and then trading with one another. If Robinson Crusoe is a natural forager, for instance, then he could focus his effort on picking berries, while his friend Man Friday, a skilled fisherman, could devote all of his time to fishing. The two could then trade with one another and each consume more berries and fish than if each of them had split his time between picking berries and catching fish.⁽³⁾

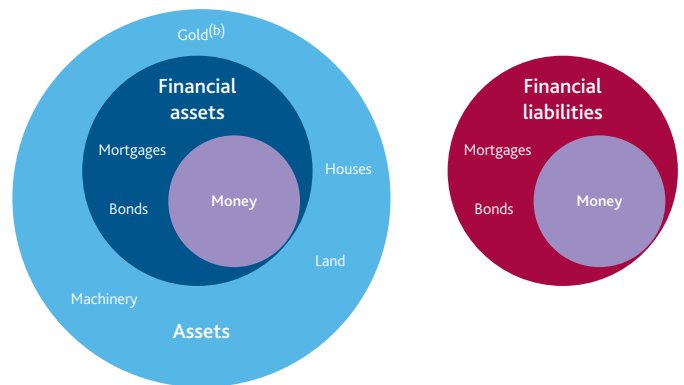
Money is an IOU

While Robinson Crusoe and Man Friday could simply swap berries for fish — without using money — the exchanges that people in the modern economy wish to carry out are far more complicated. Large numbers of people are involved.⁽⁴⁾ And — crucially — the timing of these exchanges is not typically coincident. Just as people do not always want to consume the same type of goods they have produced themselves, they do not always want to consume them *at the same time* that they produce them. Robinson Crusoe may gather a large amount of berries during summer, when they are in season, while Man Friday may not catch many fish until autumn. In the modern economy, young people want to borrow to buy houses; older people to save for retirement; and workers prefer to spend their monthly wage gradually over the month, rather than all on payday. These patterns of demand mean some people wish to borrow and others wish to hold claims — or IOUs — to be repaid by someone else at a later point in time. **Money in the modern economy is just a special form of IOU, or in the language of economic accounts, a financial asset.**

To understand money as a financial asset, it is helpful to first consider the wide range of different types of asset that people hold (individually or as companies). Some of these assets are shown in **Figure 1**. Non-financial assets such as capital (for example machinery), land and houses are shown in light blue. Each non-financial asset can produce goods and services for its owners. For instance, machinery and land can be used to make products or food; houses provide people with the service of shelter and comfort; and gold can be made into forms that people desire, such as jewellery.

It is possible for some of these non-financial assets (or even the goods that they produce) to serve some of the functions

Figure 1 Money and other assets and liabilities^(a)



- (a) Figure is highly stylised for ease of exposition: the quantities of each asset/liability shown do not correspond to the actual quantities in the economy.
 (b) By statistical convention, some holdings of gold (such as by the government) are classed as a financial asset rather than a non-financial asset in economic accounts.

of money. When goods or assets that would be valuable for other purposes are used as money, they are known as **commodity money**. For instance, Adam Smith described how 'iron was the common instrument of commerce among the ancient Spartans' and 'copper among the ancient Romans'.⁽⁵⁾ Many societies have also used gold as commodity money. The use of commodities which are valuable in their own right as money can help people to have confidence that they will be able to exchange them for other goods in future. But since these commodities have other uses — in construction, say, or as jewellery — there is a cost to using them as money.⁽⁶⁾ So in the modern economy, money is instead a financial asset.

Financial assets are simply claims on someone else in the economy — an IOU to a person, company, bank or government. A financial asset can be created by owners of non-financial assets. For example, a landowner might decide to lease some of his or her land to a farmer in return for some of the future harvests. The landowner would have less land than before, but would instead have a financial asset — a claim on future goods (food) produced by the farmer using the asset (land). In reality, however, most financial assets are actually claims on other financial assets. Most people considering buying a bond of a company (a type of IOU from the company to the bondholder), such as a farm, would not want to be repaid with food. Instead, contracts such as bonds usually state that the bondholder is owed a certain amount of money, which the farm can get by selling its food.

- (1) The historical origins of money are a matter of considerable debate. See Chapter 1 of Manning, Nier and Schanz (2009) for a discussion.
 (2) Robinson Crusoe was a fictional character in an 18th century novel by Daniel Defoe, who was shipwrecked on an island.
 (3) Smith (1766) described how 'in a nation of hunters, if anyone has a talent for making bows and arrows better than his neighbours he will at first make presents of them, and in return get presents of their game'.
 (4) As Smith (1776) noted, 'when the division of labour first began to take place, this power of exchanging must have been very much clogged and embarrassed in its operations'.
 (5) Smith (1776).
 (6) The next section discusses other disadvantages of using commodities as money or linking money to commodities.

Because financial assets are claims on someone else in the economy, they are also financial liabilities — one person's financial asset is always someone else's debt. So the size of the financial liabilities in a closed economy is equal to the size of the financial assets, as depicted in **Figure 1**.⁽¹⁾ If a person takes out a mortgage, they acquire the obligation to pay their bank a sum of money over time — a liability — and the bank acquires the right to receive those payments — an asset of the same size.⁽²⁾ Or if they own a company bond, they have an asset but the company has an equally sized liability. In contrast, non-financial assets are not claims on anyone else. If someone owns a house or some gold, there is no corresponding person indebted by that amount — so there are no non-financial liabilities. If everyone in the economy were to pool all of their assets and debts together as one, all of the financial assets and liabilities — including money — would cancel out, leaving only the non-financial assets.

Why money is special

In principle, there might be no need for a special financial asset such as money to keep track of who is owed goods and services. Everyone in the economy could instead create their own financial assets and liabilities by giving out IOUs every time they wanted to purchase something, and then mark down in a ledger whether they were in debt or credit in IOUs overall. Indeed, in medieval Europe merchants would often deal with one another by issuing IOUs. And merchant houses would periodically settle their claims on one another at fairs, largely by cancelling out debts.⁽³⁾ But such systems rely on everyone being confident that everyone else is completely trustworthy.⁽⁴⁾ Otherwise, people would worry that some of the IOUs they were holding might be from people who would not pay them back when they came to redeem them. Even if they trusted everyone who they had lent to directly, they may worry that those people held IOUs from untrustworthy people, and therefore would not be able to repay their own IOUs.

Money is a *social institution* that provides a solution to the problem of a lack of trust.⁽⁵⁾ It is useful in exchange because it is a special kind of IOU: in particular, **money in the modern economy is an IOU that everyone in the economy trusts**. Because everyone trusts in money, they are happy to accept it in exchange for goods and services — it can become universally acceptable as the medium of exchange. Only certain types of IOU can obtain that status. For example, if a type of IOU is not widely trusted to be repaid, it is less likely to be acceptable in exchange — and less like money. The next section of the article explains what types of IOU function as money in the modern economy, and how those particular IOUs became trusted enough to be universally acceptable in exchange.

Different types of money

The previous section explained that although many goods or assets can fulfil some of the functions of money, money today is a special type of IOU. To understand that further, it is useful to consider some of the different types of money that circulate in a modern economy — each type representing IOUs between different groups of people. All of these types of money, along with various other commonly used terms related to money are set out in a glossary (**Table A**) at the end of the article. For this article, the economy is split into three main groups: the central bank (in the United Kingdom, the Bank of England); the commercial banks (for example, high street banks such as Barclays and Lloyds); and the remaining private sector of households and companies, hereon referred to as 'consumers'.

Economic commentators and academics often pay close attention to the amount of 'broad money' circulating in the economy. This can be thought of as the money that consumers have available for transactions, and comprises: **currency** (banknotes and coin) — an IOU from the central bank, mostly to consumers in the economy; and **bank deposits** — an IOU from commercial banks to consumers.⁽⁶⁾ Broad money is a useful concept because it measures the amount of money held by those responsible for spending decisions in the economy — households and companies. A box in the companion article explains what information different measures of money can reveal about the economy.

A different definition of money, often called 'base money' or 'central bank money', comprises IOUs from the central bank: this includes **currency** (an IOU to consumers) but also **central bank reserves**, which are IOUs from the central bank to commercial banks. Base money is important because it is by virtue of their position as the only issuer of base money that central banks can implement monetary policy.⁽⁷⁾ The companion article explains how the Bank of England varies the interest rate paid on reserves to affect spending and

(1) A closed economy, such as Robinson Crusoe's desert island, is an economy that does not conduct any exchanges with outside economies.

(2) Note that the sum the mortgagor has to pay back over time will typically be greater than the amount they originally borrowed. That is because borrowers will usually have to pay interest on their liabilities, to compensate the lender for the inconvenience of holding an IOU that will only be repaid at a later date.

(3) Medieval fairs and their economic significance are discussed in more detail in Braudel (1982).

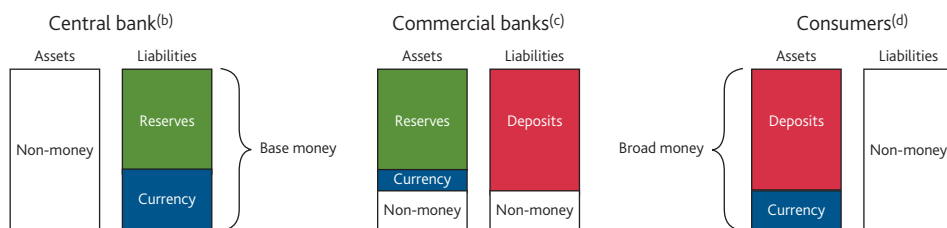
(4) The importance of a lack of trust as a necessary condition for the existence of money is emphasised in papers by Kiyotaki and Moore (2001, 2002), who famously argue that 'evil is the root of all money'. Kocherlakota (1998) points out that a lack of a record of all transactions is another necessary condition. Earlier work by Brunner and Meltzer (1971) and King and Plosser (1986) also argues that there must be some impediment to stop a credit system being used instead of money.

(5) King (2006) provides a detailed account of money as a social institution.

(6) The definition of broad money used by the Bank of England, M4^{ex}, also includes a wider range of bank liabilities than regular deposits; see Burgess and Janssen (2007) for more details. For simplicity, this article describes all of these liabilities as deposits.

(7) Some Scottish and Northern Irish commercial banks are also allowed to issue their own banknotes, but to do so they must also hold an equal amount of Bank of England banknotes or reserves deposited at the Bank of England, meaning their issuance does not change the amount of base money. Notes held at the Bank may include £1 million notes (Giants) and £100 million notes (Titans).

Figure 2 Stylised balance sheets of different types of money holders and issuers in the economy^(a)



- (a) Balance sheets are highly stylised for ease of exposition: the quantities of each type of money shown do not correspond to the quantities actually held on each sector's balance sheet.
 (b) Central bank balance sheet only shows base money liabilities and matching assets. In practice the central bank holds other non-money liabilities. Its non-money assets are mostly made up of government debt. Although that government debt is held by the Bank of England's Asset Purchase Facility, so does not appear directly on the Bank of England's consolidated balance sheet.
 (c) Commercial banks' non-money assets would include government debt and non-money liabilities would include long-term debt and equity.
 (d) Consumers represent the private sector of households and companies. Balance sheet only shows broad money assets and corresponding liabilities. Consumers' non-money liabilities would include secured and unsecured loans.

inflation in the economy, along with the amounts of the different types of money.

Who owes who? Mapping out the IOUs

Drawing a **balance sheet** is a useful way to map out the IOUs of different people to each other. As discussed previously, each IOU is a **financial liability** for one person, matched by a **financial asset** for someone else. Then, for any individual, their balance sheet simply adds together, on one side, all of their assets — their IOUs *from* other people and their non-financial assets; and on the other, all of their liabilities (or debt) — their IOUs *to* other people.⁽¹⁾

You can add together the individuals in each group to get a consolidated balance sheet, which shows the IOUs of that group to the other groups in the economy.⁽²⁾ **Figure 2** shows a stylised balance sheet of assets and liabilities for each of the three groups in the economy. The different types of money are each shown in a different colour: currency in blue, bank deposits in red and central bank reserves in green. Broad money is therefore represented by the sum of the red and the blue assets held by consumers, whereas base money is the sum of all of the blue and the green assets. (Note that the balance sheets are not drawn to scale — in reality the amount of broad money is greater than the amount of base money.) Each type of money features on the balance sheets of at least two different groups, because each is an asset of one group and a liability of another. There are also lots of other assets and liabilities which do not fulfil the functions of money (everything except the lilac circles in **Figure 1**); some of these are shown in white in **Figure 2**. For example, consumers hold loans such as mortgages, which are liabilities of the consumer and assets of the consumer's bank.

The rest of this section discusses each of the three types of money in more detail, explaining why it is valued and briefly describing how it is created.⁽³⁾ A box on page 9 briefly outlines some recent developments in payment technologies and alternative currencies that have led to the creation of different instruments that have some similarities with money.

(i) Fiat currency — banknotes and coin

What is it?

Currency is made up mostly of **banknotes** (around 94% of the total by value as of December 2013), most of which are an IOU from the Bank of England to the rest of the economy.⁽⁴⁾ Currency is mostly held by consumers, although commercial banks also hold small amounts in order to meet deposit withdrawals. As stated in their inscription, banknotes are a 'promise to pay' the holder of the note, on demand, a specified sum (for example £5). This makes banknotes a liability of the Bank of England and an asset of their holders, shown in blue on their balance sheets in **Figure 2**.

When the Bank of England was founded in 1694, its first banknotes were convertible into gold. The process of issuing 'notes' that were convertible into gold had started earlier than this, when goldsmith-bankers began storing gold coins for customers. The goldsmiths would give out receipts for the coins, and those receipts soon started to circulate as a kind of money. The Bank of England would exchange gold for its banknotes in a similar way — it stood ready to swap its notes back into gold on demand. Other than a few short periods, that was how currency worked for most of the next 250 years — the 'gold standard'.⁽⁵⁾ But the Bank permanently abandoned offering gold in return for notes in 1931 so that Britain could better manage its economy during the Great Depression, as discussed below.

Since 1931, Bank of England money has been fiat money. **Fiat or 'paper' money is money that is not convertible to any other asset (such as gold or other commodities).**

- (1) As a convention total assets and liabilities must balance. If assets are greater than debt, the difference is defined as that asset holder's equity capital. For example, a consumer with no debt would have equity equal to the value of their assets. For an introduction to capital in the context of banks, see Farag, Harland and Nixon (2013).
 (2) Debts to other individuals within the group are cancelled out, leaving only IOUs to and from other groups.
 (3) Ryan-Collins *et al* (2011) provide a detailed introductory account of where money comes from.
 (4) The remaining roughly 6% of the currency in circulation is made up of coins, which are produced by The Royal Mint. Of the banknotes that circulate in the UK economy, some are issued by some Scottish and Northern Irish commercial banks.
 (5) There were several periods, particularly during wars, when the Bank temporarily stopped exchanging gold for notes. HM Treasury also issued notes at the outbreak of the First World War — these 'Treasury Notes' could be converted to coins and remained in circulation until 1928.

Recent developments in payment technologies and alternative currencies

The recent past has seen a wave of innovation in payment technologies and alternative currencies. This box briefly outlines some of these developments, focusing on how they relate to the concept of money discussed in the main article. Overall, while they perform — to a varying extent — some of the functions of money, at present they are not typically accepted as a medium of exchange to the same extent that currency, central bank reserves or bank deposits are.

One set of innovations allows households and businesses to convert bank deposits into other, purely electronic forms of money (sometimes referred to as 'e-money') that can be used to carry out transactions. These technologies aim to improve the process of making payments. Examples include PayPal and Google Wallet. Just as it may be more convenient to carry out transactions using bank deposits rather than banknotes, for some transactions it may also be more convenient to use money in an e-money account rather than banknotes or bank deposits. These forms of money have some similar features to bank deposits. For example, money in an e-money account represents a store of value so long as the companies providing it are seen as trustworthy. E-money can also be used as a medium of exchange with businesses (such as online sellers) or individuals that accept it. However, it is still not as widely accepted as other media of exchange, for instance, it is not generally accepted by high street shops. Transactions using these technologies are also typically denominated in the existing unit of account (pounds sterling in the United Kingdom).

Another set of innovations have served to introduce a new unit of account. These schemes aim to encourage economic

activity within a defined environment, and include local currencies, such as the Bristol, Brixton or Lewes Pounds in the United Kingdom.⁽¹⁾ Local currencies are discussed in detail in a previous *Bulletin* article (Naqvi and Southgate (2013)). These forms of money can be obtained in exchange for currency at fixed rates: for example, one pound sterling can be swapped for one Bristol Pound. Local currency can then be exchanged for goods and services that can be priced in their own unit of account — Brixton Pounds rather than pounds sterling. As a result their use as a medium of exchange is intentionally limited. For example, the Lewes Pound can only be used at participating retailers, which must be located in the Lewes area.

A further category of innovations is digital currencies, such as Bitcoin, Litecoin and Ripple. The key difference between these and local currencies is that the exchange rate between digital currencies and other currencies is not fixed. Digital currencies are not at present widely used as a medium of exchange. Instead, their popularity largely derives from their ability to serve as an asset class. As such they may have more conceptual similarities to commodities, such as gold, than money. Digital currencies also differ from the other technologies discussed so far in this box because they can be created out of nothing, albeit at pre-determined rates. In contrast, local currencies come into circulation only when exchanged for pounds sterling. While the amount of money held in e-money accounts or local currencies depends entirely on demand, the supply of digital currencies is typically limited.

(1) While local, or complementary, currencies are not a new innovation, they have only recently become adopted by a number of UK areas. See Naqvi and Southgate (2013) for more details.

Because fiat money is accepted by everyone in the economy as the medium of exchange, although the Bank of England is in debt to the holder of its money, that debt can only be repaid in more fiat money. The Bank of England promises to honour its debt by exchanging banknotes, including those no longer in use, for others of the same value forever. For example, even after its withdrawal on 30 April 2014, the £50 note featuring Sir John Houblon will still be swapped by the Bank for the newer £50 note, which features Matthew Boulton and James Watt.

Why do people use it?

Fiat money offers advantages over linking money to gold when it comes to managing the economy. With fiat money, changes in the demand for money by the public can be matched by changes in the amount of money available to them. When the amount of money is linked to a commodity, such as gold, this

places a limit on how much money there can be, since there is a limit to how much gold can be mined. And that limit is often not appropriate for the smooth functioning of the economy.⁽¹⁾ For example, abandoning the gold standard in 1931 allowed Britain to regain more control of the amount of money in the economy. The United Kingdom was able to reduce the value of its currency relative to other countries still linking their currency to gold (and this was accompanied by an increased amount of money in circulation), which some economic historians argue helped Britain avoid facing as deep a recession as many other countries around the world in the 1930s.⁽²⁾

(1) There could also be too much creation of money in periods where the amount of that commodity grows quickly. In the 16th century, Spain experienced a prolonged period of higher inflation after it imported large amounts of gold and silver from the Americas.

(2) Temin (1989) and Eichengreen (1992) conduct detailed analysis of countries' economic performance under the gold standard and during the Great Depression.

Although there are advantages to using fiat money for the *economy as a whole*, these may not be realised unless *individuals* decide they want to use it in exchange. And, if banknotes are not directly convertible into a real good of some kind, what makes them universally acceptable in exchange? One answer is that the trusted medium of exchange just emerges over time as a result of a social or historical convention. There are many such conventions that emerge in society. For example, motorists in the United Kingdom drive on the left-hand side of the road, and this convention began when enough drivers became confident that most others would do the same.⁽¹⁾ But equally the convention could have become driving on the right, as it did in many other countries.

In the case of money, however, the state has generally played a role in its evolution.⁽²⁾ To be comfortable holding currency, people need to know that at some point someone would be prepared to exchange those notes for a real good or service, which the state can help guarantee. One way it can do this is to make sure that there will always be demand for the currency by accepting it as tax payments. The government can also influence that demand somewhat by deeming that currency represents 'legal tender'.⁽³⁾

Even if the state does underpin the use of currency in this way, that by itself does not ensure that people will (or are legally bound to) use it. They need to trust that their banknotes are valuable, which means that it is important that banknotes are difficult to counterfeit.⁽⁴⁾ They also need to have faith that the value of their banknotes will remain broadly stable over time if they are to hold them as a store of value and be able to use them as a medium of exchange. This generally means the state must ensure a low and stable rate of inflation.

Since abandoning the gold standard in 1931, various other ways of keeping the value of money stable have been tried, with differing degrees of success. For example, in the 1980s, policy aimed to keep the rate at which the amount of broad money in the economy was growing stable over time.⁽⁵⁾ Since 1992, the Bank has had an inflation target for consumer prices. The inflation target means that the Bank is committed to aiming to keep the value of money relatively stable in terms of the number of goods and services it can buy. So instead of being confident that their banknotes will be worth a certain amount of gold, people can expect that they will be worth a stable amount of real products from one year to the next.

How is it created?

The Bank of England makes sure it creates enough banknotes to meet the public's demand for them. The Bank first arranges the printing of new banknotes by a commercial printer. It then swaps them with commercial banks for old banknotes — those

which are no longer fit to be used or are part of a series that has been withdrawn. These old notes are then destroyed by the Bank.

The demand for banknotes has also generally increased over time. To meet this extra demand, the Bank also issues banknotes over and above those needed to replace old banknotes.⁽⁶⁾ The extra newly issued notes are bought by the commercial banks from the Bank of England. The commercial banks pay for the new currency, a paper IOU of the Bank of England, by swapping it for some of their other, electronic IOUs of the Bank — central bank reserves. The size of their balance sheets in **Figure 2** would be unchanged, but the split between the green and blue components would be altered.⁽⁷⁾

(ii) Bank deposits

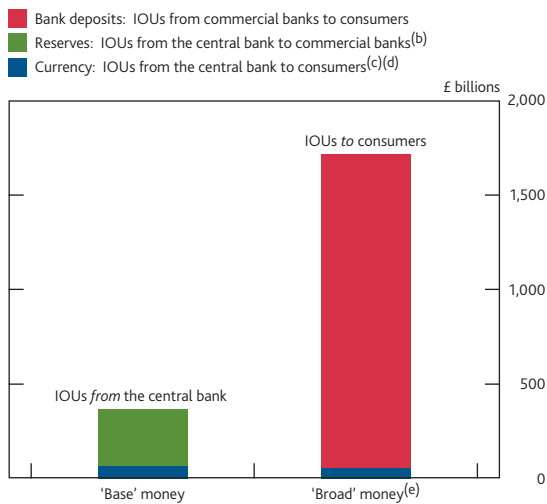
What are they?

Currency only accounts for a very small amount of the money held by people and firms in the economy. The rest consists of deposits with banks, as shown in **Chart 1**. For security reasons, consumers generally do not want to store all of their assets as physical banknotes. Moreover, currency does not pay interest, making it less attractive to hold than other assets, such as bank deposits, that do. For these reasons, consumers prefer to mostly hold an alternative medium of exchange — **bank deposits**, shown in red in **Figure 2**. Bank deposits can come in many different forms, for example current accounts or savings accounts held by consumers or some types of bank bonds purchased by investors. In the modern economy these tend to be recorded electronically. For simplicity, this article focuses on households' and firms' deposits with banks, as these most clearly function as money.

Why do people use them?

When a consumer makes a deposit of his or her banknotes with a bank, they are simply swapping a Bank of England IOU for a commercial bank IOU. The commercial bank gets

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- (1) Young (1998) explains that these conventions were largely formed in Europe when people still drove horse-drawn carriages, rather than cars. They were then later enshrined in law, guaranteeing that people would follow the convention.
 - (2) Goodhart (1998) argues that historical evidence suggests the state was crucial in the development of money as a medium of exchange. He contrasts that view with the position of Menger (1892), who proposes a more natural evolution.
 - (3) For example, Bank of England banknotes are the only notes that are legal tender in England and Wales. But that legal tender status only has a narrow meaning relating to the repayment of debts. In ordinary transactions it has little practical application, since whether a currency is used as the medium of exchange depends only on whether there is agreement between the two parties carrying out the exchange.
 - (4) For information on current security features and education materials, see www.bankofengland.co.uk/banknotes/Pages/educational.aspx.
 - (5) See Cairncross (1995) or Wood (2005) for detailed histories of monetary policy regimes in the United Kingdom.
 - (6) See Allen and Dent (2010) for a full description of the Note Circulation Scheme.
 - (7) As shown in **Figure 2**, Bank of England currency is matched on the other side of the central bank's balance sheet by non-money assets, which in normal times were typically sterling money market instruments or government bonds. These assets pay interest, while currency does not. The income from those assets (after deducting the Bank's costs of issuing notes) is paid to HM Treasury, and is known as 'seigniorage'.

Chart 1 Amounts of money in circulation^(a)

- (a) All data are for December 2013.
 (b) Reserves balances at the Bank of England held by banks and building societies, non seasonally adjusted. Data are measured as the monthly average of weekly data.
 (c) Currency in base money includes notes and coin in circulation outside the Bank of England, including those in banks' and building societies' tills. Data are measured as the monthly average of weekly data.
 (d) Currency in broad money includes only those notes and coins held by the non-bank private sector, measured as the month-end position.
 (e) M4 excluding intermediate other financial corporations.

extra banknotes but in return it credits the consumer's account by the amount deposited. Consumers only swap their currency for bank deposits because they are confident that they could always be repaid. Banks therefore need to ensure that they can always obtain sufficient amounts of currency to meet the expected demand from depositors for repayment of their IOUs. For most household depositors, these deposits are guaranteed up to a certain value, to ensure that customers remain confident in them.⁽¹⁾ This ensures that bank deposits are trusted to be easily convertible into currency and can act as a medium of exchange in its place.

In the modern economy, bank deposits are often the default type of money. Most people now receive payment of their salary in bank deposits rather than currency. And rather than swapping those deposits back into currency, many consumers use them as a store of value and, increasingly, as the medium of exchange. For example, when a consumer pays a shop by debit card, the banking sector reduces the amount it owes to that consumer — the consumer's deposits are reduced — while increasing the amount it owes to the shop — the shop's deposits are increased. The consumer has used the deposits directly as the medium of exchange without having to convert them into currency.

How are they created?

Unlike currency, which is created by the Bank of England, **bank deposits are mostly created by commercial banks themselves.** Although the stock of bank deposits increases whenever someone pays banknotes into their account, the amount of bank deposits is also reduced any time anyone makes a withdrawal. Moreover, as **Chart 1** shows, the

amount of currency is very small compared to the amount of bank deposits. Far more important for the creation of bank deposits is the act of making new loans by banks. When a bank makes a loan to one of its customers it simply credits the customer's account with a higher deposit balance. At that instant, new money is created.

Banks can create new money because bank deposits are just IOUs of the bank; banks' ability to create IOUs is no different to anyone else in the economy. When the bank makes a loan, the borrower has also created an IOU of their own to the bank. The only difference is that for the reasons discussed earlier, the bank's IOU (the deposit) is widely accepted as a medium of exchange — it is money. Commercial banks' ability to create money is not without limit, though. The amount of money they can create is influenced by a range of factors, not least the monetary, financial stability and regulatory policies of the Bank of England. These limits, and the money creation process more generally, are discussed in detail in the companion piece to this article.

(iii) Central bank reserves

Commercial banks need to hold some currency to meet frequent deposit withdrawals and other outflows. But to use physical banknotes to carry out the large volume of transactions they do with each other would be extremely cumbersome. So banks are allowed to hold a different type of IOU from the Bank of England, known as **central bank reserves** and shown in green in **Figure 2**. Bank of England reserves are just an electronic record of the amount owed by the central bank to each individual bank.

Reserves are a useful medium of exchange for banks, just as deposits are for households and companies. Indeed, reserves accounts at the central bank can be thought of as playing a similar role for commercial banks as current accounts serve for households or firms. If one bank wants to make a payment to another — as they do every day, on a large scale, when customers make transactions — they will tell the Bank of England who will then adjust their reserves balances accordingly. The Bank of England also guarantees that any amount of reserves can be swapped for currency should the commercial banks need it. For example, if lots of households wanted to convert their deposits into banknotes, commercial banks could swap their reserves for currency to repay those households. As discussed earlier, as the issuer of currency, the Bank of England can make sure there is always enough of it to meet such demand.

⁽¹⁾ The Financial Services Compensation Scheme offers protection for retail deposits up to £85,000 per depositor per Prudential Regulation Authority authorised institution. For more information see www.fscs.org.uk.

Conclusion

This article has introduced what money means and the different types of money that exist in a modern economy. Money today is a form of debt, but a special kind of debt that is accepted as the medium of exchange in the economy. And

most of that money takes the form of bank deposits, which are created by commercial banks themselves. A companion piece to this article, 'Money creation in the modern economy', describes the process of money creation by commercial banks in more detail.

Table A Glossary of different types of money and different names for money^(a)

Name	Description	Also known as
Bank deposits	Type of IOU from a commercial bank to a person or company.	Inside money (if not matched by outside money on bank balance sheets).
Base money	Central bank reserves + currency.	Monetary base. Central bank money. Outside money (in the United Kingdom). High-powered money. M0.
Broad money	Currency held by the private sector (other than banks) + bank deposits (and other similar short-term liabilities of commercial banks to the rest of the private sector).	M4 ^{ex} (headline measure of broad money used by the Bank of England — excludes the deposits of certain financial institutions, known as intermediate other financial corporations (IOFCs), in order to provide a measure of money more relevant for spending in the economy). M4 (includes the deposits of IOFCs). M3 (older definition that did not include building society deposits).
Central bank reserves	Type of IOU from the central bank to a commercial bank.	
Commodity money	A commodity with intrinsic value of its own that is used as money because it fulfils the main functions — such as gold coins.	
Currency	Type of IOU (in paper banknote or coin form), largely from the central bank to the holder of the note.	Notes and coin.
Fiat money	Money that is irredeemable — it is only a claim on further fiat money.	

(a) A box in 'Money creation in the modern economy' explains how different measures of money are useful in understanding the economy.

References

- Allen, H and Dent, A (2010), 'Managing the circulation of banknotes', *Bank of England Quarterly Bulletin*, Vol. 50, No. 4, pages 302–10.
- Braudel, F (1982), *The wheels of commerce*, University of California Press.
- Brunner, K and Meltzer, A (1971), 'The uses of money: money in the theory of an exchange economy', *American Economic Review*, Vol. 65, No. 5, pages 784–805.
- Burgess, S and Janssen, N (2007), 'Proposals to modify the measurement of broad money in the United Kingdom: a user consultation', *Bank of England Quarterly Bulletin*, Vol. 47, No. 3, pages 402–14.
- Cairncross, A (1995), 'The Bank of England and the British economy', in Roberts, R and Kynaston, D (eds), *The Bank of England: money, power and influence 1694–1994*, pages 56–82.
- Doepke, M and Schneider, M (2013), 'Money as a unit of account', *NBER Working Paper No. 19537*.
- Eichengreen, B (1992), *Golden fetters: the gold standard and the Great Depression*, Oxford University Press.
- Farag, M, Harland, D and Nixon, D (2013), 'Bank capital and liquidity', *Bank of England Quarterly Bulletin*, Vol. 53, No. 3, pages 201–15.
- Goodhart, C (1998), 'The two concepts of money: implications for the analysis of optimal currency areas', *European Journal of Political Economy*, Vol. 14, pages 407–32.
- King, M (2006), 'Trusting in money: from Kirkcaldy to the MPC', available at www.bankofengland.co.uk/archive/Documents/historicpubs/speeches/2006/speech288.pdf.
- King, R and Plosser, C (1986), 'Money as the mechanism of exchange', *Journal of Monetary Economics*, Vol. 17, No. 1, pages 93–115.
- Kiyotaki, N and Moore, J (2001), 'Evil is the root of all money', Clarendon Lectures (Lecture 1).
- Kiyotaki, N and Moore, J (2002), 'Evil is the root of all money', *The American Economic Review*, Vol. 92, No. 2, pages 62–66.
- Kocherlakota, N (1998), 'Money is memory', *Journal of Economic Theory*, Vol. 81, No. 2, pages 232–51.
- Manning, M, Nier, E and Schanz, J (eds) (2009), *The economics of large-value payment and settlement systems: theory and policy issues for central banks*, Oxford University Press.
- Menger, C (1892), 'On the origins of money', *Economic Journal*, Vol. 2, No. 6, pages 239–55.
- Naqvi, M and Southgate, J (2013), 'Banknotes, local currencies and central bank objectives', *Bank of England Quarterly Bulletin*, Vol. 53, No. 4, pages 317–25.
- Ostroy, J and Starr, R (1990), 'The transactions role of money', in Friedman, B and Hahn, F (eds), *Handbook of Monetary Economics*, Vol. 1, pages 3–62.
- Radford, R (1945), 'The economic organisation of a P.O.W. camp', *Economica*, Vol. 12, No. 48, pages 189–201.
- Ryan-Collins, J, Greenham, T, Werner, R and Jackson, A (2011), *Where does money come from? A guide to the UK monetary and banking system*, New Economics Foundation.
- Sargent, T (1982), 'The ends of four big inflations', in Hall, R (ed), *Inflation: causes and effects*, pages 41–97.
- Smith, A (1766), *Lectures on jurisprudence*, The Glasgow edition of the Works and Correspondence of Adam Smith, Vol. 6: manuscript B, 'Report dated 1766'.
- Smith, A (1776), *An inquiry into the nature and causes of the wealth of nations*, The Glasgow edition of the Works and Correspondence of Adam Smith, Vol 2.
- Temin, P (1989), *Lessons from the Great Depression*, MIT Press.
- Wood, J (2005), *A history of central banking in Great Britain and the United States*, Cambridge University Press.
- Young, H (1998), *Individual strategy and social structure*, Princeton University Press.