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## Fractional Bank Money

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### *Summary*

*Fractional reserve banking is based on the illusion that our money in our transaction account in the bank is always intact and available. With fractional banking, demand deposits are fractional money, as demonstrated terrifyingly by the Great Depression. Fractional reserve banking has been kept on artificial life support by deposit insurance schemes. What electronic money institutions offer is not safe money, but just another version of debit cards. Digital money issued by new payment providers shares the traits of bank money, meaning it is fractional digital money. As transaction accounts make up a relatively small proportion of all deposits, and an even smaller part of **broad money** (M4 in the UK, or M3 in the ECB system), their de-fractionalisation would not pose a monetary problem, but is not possible without political support.*

***Key words:** fractional bank money, money illusion, deposit insurance, full reserve banking, electronic money institutions, fractional digital money.*

### **A double illusion**

Fractional-reserve banking is based on the illusion that our money in our transaction account in the bank is always intact and available. This may make us think that the sum of balances in all transaction accounts is equal to the bank's reserve. But it isn't. The bank knows that owners of transaction accounts or demand deposits will never ask to draw their money all at the same time, which allows it to execute our payment orders using reserves smaller by a factor of ten or 15. The ratio between the bank's reserves and our deposits is called the *reserve-deposit ratio*, and commercial banks' deposit-taking business is termed *fractional reserve banking*.

If we ever doubt the ability of our bank to repay us our money – say, because it looks like it's having issues with liquidity, such as *Northern Rock* did – we can either rush to join the queue to take the money out, or else rely on the government's deposit insurance. Because of cash withdrawal limits, one urgent action is to transfer the money to another bank that we believe is *safer*. Technology again comes to the rescue – in this age of e-banking, there's no need to queue outside banks. All you require is one online payment order, provided you've got an account with a different bank; also, obviously, your old bank has to be able to honour it. The time of the old-fashioned *run on the bank* has passed, with *physical panic* now replaced by *e-panic*.

Consequently, our non-cash money, which we can dispose of only using the bank as an intermediary, is best termed *fractional bank money*. The degree of fractionality of this money, measured by the *reserve-deposit ratio*, shows the scale of our illusion. With negative interest rates recently extended to demand deposits (transaction accounts), especially those with balances exceeding a minimum threshold,<sup>1</sup> we're in thrall to a double illusion: the banks are charging us for 'safekeeping' money they've already mainly invested elsewhere. This is a veritable alchemical process, but no court has yet weighed in with a decision.

Fractionality, the ultimate banking illusion, has endured for centuries in spite of countless banks going bankrupt and their clients losing their deposits. Admittedly, it has benefited from *lender of last resort* arrangements and governments' deposit insurance schemes. Many see fractional banking as the foundation of modern banking, and with good reason. Some historical background to this illusion will help us understand what makes our money in the bank safe, and how this mechanism is connected with the latest trends in the modernisation of payments and money issuance.

## **The origin of fractionality**

Deposits were a natural extension of money changing operations in Mediaeval Europe, which banking evolved from and where banks got their name (*banco* is Old Italian for 'bench', as these early currency dealers traded on benches improvised as desks; 'bankrupt' comes from *banco rotta*, literally 'broken bench'). Early deposit banks were universal banks, which provided a wide range of services but also went bankrupt frequently, a common occurrence in fractional banking. Venice was among the first nations to face deposit failure: 'The basic problem with the Venetian payment system based on private banks was the possibility of failure. ... Deposit banking and commercial banking were not separate, and bankers extended loans or invested directly'.<sup>2</sup> With nearly 100 banks having failed by the 1550s, Venice set up the public *Banco di Rialto*, which was 'essentially a government intervention to correct a market failure: the institution created was intended to supply a payment service hitherto provided by the private sector, but in a manner found to be wanting'.<sup>3</sup> The *Banco di Rialto* was soon replaced by the *Banco del Giro*, which would serve as the model for many public banks throughout Europe. It's now obvious that fractional banking has been causing the same problems for hundreds of years, but 16th century Venice was yet to discover the principles of *lender of last resort* and *deposit insurance scheme*.

Public banks proliferated during the 17th century as cities and countries sought to safeguard deposits and provide secure payments systems, so that 'the idea of public banks was virtually synonymous with the idea of a giro bank operating in a republic (Genoa, Venice, Amsterdam, and Hamburg)'.<sup>4</sup> The development of these banks in Continental European practice reflected an aversion to private depositaries, due to a wealth of adverse experiences.

The most famous public bank, based on deposit security, or full reserve banking, was established in 1609 as the *Amsterdamse Wisselbank*, better known as the Bank of Amsterdam (BoA). By

pioneering non-cash payments via a *giro system of net clearing*, in an environment flooded by poor-quality coin produced by innumerable mints, the BoA revolutionised money. ‘Merchants from all over Europe were then content to leave their specie and precious metals in the vaults of the bank. (Even John Law, the great financier for France from 1715 to 1720, kept his personal account open, if inactive, and with a minimum deposit, after he left Amsterdam)’.<sup>5</sup> Six decades later, it was another Scotsman, Adam Smith, who called the money issued by the BoA **bank money**, emphasising its *intrinsic superiority to currency, security, simplicity and risk-free transfer*.<sup>6</sup>

The absolute monarchies of the day evidently did not favour public banks, probably fearing they would jeopardise the sovereign’s monopoly on minting money. Deposits were particularly under threat in England in the 17th century, a time when the erratic rule of the first Stuarts was followed by the Civil War, then the Restoration, and, finally, the Glorious Revolution. This, the most turbulent time in English history, saw the emergence of a new set of deposit-takers: the goldsmiths of London. To them we owe some exceptional monetary innovations, such as ‘goldsmiths’ notes’ (which later evolved into banknotes), and fractional reserve deposits transferrable by cheque. These new devices blazed a trail for modern banking, with all its strengths, weaknesses, and risks.

### **Confused about deposits**

These new practices created a fundamental problem that hasn’t been resolved to this day: the lack of a distinction between money on account or demand deposits and time deposits, i.e. non-cash money vs financial investment. These were clearly differentiated only in the early 1900s, but even as late as after World War I some British and American banks still allowed clients to draw cheques on savings deposits. To this day, most economists use the collective noun ‘deposits’, although most central banks have long since given up trying to clearly define deposits that constitute *money*. ‘Just which kinds of deposit obligations count as “money” depends on definitions, of which there are several, all somewhat arbitrary.’<sup>7</sup> The combination of fractional reserve banking and confusion about deposits has caused numberless runs on banks, bankruptcies, and banking crises.

The fractionality of bank reserves therefore became the main hallmark and driver of English banking from the time of the first industrial revolution. The key word here is the **promise**: banks promise to pay a sum to the bearer on demand, using fractional reserves they hold as assets. The use of cheques completely transformed the non-cash business previously developed by public banks. ‘The increased use of cheques is a striking feature of London private banking in the latter half of the eighteenth century’.<sup>8</sup> All evidence suggests that deposit banking based on fractional reserves was flourishing as early as the 18th century, with payments made through the system far outstripping those in actual cash. Yet it failed to attract much attention, since non-cash payment instruments ‘circulat[ed] chiefly among the trading world [and came] little under the observation of the public.’ (Henry Thornton, *Paper Credit*).

The different treatment of cash and non-cash money, or banknotes as a regulated business and bank deposits as a free market activity, was first legislated in the UK's Bank Charter Act 1844. The intention was to split the Bank of England's *note issuing* operations from its *general banking business* by creating distinct Issue and Banking Departments. The Act therefore separated central bank money for the public (Issue Department) from central bank deposit money, available only to banks (Banking Department). So, the general public, denied access to risk-free central bank deposits for transactions, was forced to use fractional bank deposits for non-cash payments, although before the Act was passed the Bank used to accept individual deposits. 'Other banks, although stripped of the right of issue, were virtually unmolested in the creation of deposit currency.'<sup>9</sup>

The fact that banknotes earned no interest, whereas demand deposits were interest-bearing, helped assuage deposit-holders' aversion to risk. The convenience of account-to-account payments by cheque made demand deposits doubly attractive, in spite of their fractional nature. This quality made economists start calling them *bank money*, neglecting their *promissory* character. Adam Smith was among the first to use this term, although he employed it to refer to the full reserve deposits the Bank of Amsterdam utilised for non-cash *risk-free transfers*. In fractional banking, demand deposits are fractional money, as demonstrated terrifyingly by the Great Depression.

### ***The destruction of our demand deposits***

'The most outstanding fact of the last depression is the **destruction** of eight billion dollars – over a third – of our "check-book money" – **demand deposits**.'<sup>10</sup> The author of this quote, Irving Fisher, was a renowned economist who lived through this cataclysm and employed mathematics to expose the real interest rate. His sketch of the destruction of the dollar illustrated the scale of the *money illusion*, or just how fractional transaction accounts in banks in really were. It wasn't *eight billion dollars* in non-cash money that were destroyed, it was *eight billion dollars* in claims on banks. Depositors' money had already been invested, either in securities or as bank loans, which the economic crisis made uncollectable. Nine thousand US banks failed during the Great Depression, a third of the entire banking sector; 4,000 banks went bankrupt in 1933 alone. The greatest series of bank failures in history is slowly being forgotten, just like the terrible Spanish Flu of not-so-distant 1918. The Covid-19 pandemic has been a forceful reminder that not all contagious diseases have been eradicated – including a possible new banking contagion.

As Irving Fisher succinctly put it, *the dollar grows scarcer* 'by reason of the destruction of the check-book money of the nation through the liquidation of bank loans; and finally, the fundamental reason why such liquidation destroys our check-book money lies in our **partial reserve system**.'<sup>11</sup> This is why he and a group of colleagues proposed '*the 100% money plan*', which would require 100% reserve for deposits, so making them *perfectly safe*.<sup>12</sup> This suggestion, also known as the *Chicago Plan*, continues to attract the attention of many economists.<sup>13</sup>

Unsurprisingly, Fisher didn't invoke London banking practice, but the Bank of Amsterdam. The powers that be rejected his plan on the pretext that it would destroy banks' deposit business (even though it would have applied to only a small portion of these affairs, demand deposits or transaction accounts). So failed the last attempt to separate monetary and credit operations, tried for the first time in 14th century Venice.

Fractional reserve banking has been kept on artificial life support by deposit insurance schemes, formalised with the creation of the world's first institution of this type, the US Federal Deposit Insurance Corporation (FDIC). The FDIC's crest reads '1933' as a symbol of victory over the Great Depression, even though the Corporation began operating only a year later.

Additional support to the faltering bank sector was to be provided by the Federal Reserve System, or the Fed, as the *lender of last resort*, a function it did not perform in the Great Depression.

Milton Friedman, the founder of monetarism, fiercest critic of the Fed, and champion of the free market, distrusted these solutions to problems of fractional reserve deposits and promissory money. As early as 1959, in his famous *A Program for Monetary Stability*, Friedman set out a *list of the 'good reasons' why 'monetary arrangements have seldom been left to the market'*, which he kept the same until the latter half of the 1980s. A major 'good reason' is 'the peculiar difficulty of enforcing **contracts** involving **promises to pay** that serve as a medium of exchange and of preventing fraud in respect of them. ... However, the character of the difficulty has changed. ... Moreover, it is now taken for granted that governments (i.e., taxpayers) will completely shield holders of deposit liabilities from loss'.<sup>14</sup> The lines of deposit-holders queuing outside *Northern Rock* branches in 2008 were tangible proof of Friedman's visionary thoughts about *deposit liabilities*.

James Tobin put it slightly differently: 'It is, after all, historical accident that supplies of transactions media in modern economies came to be byproducts of banking business and vulnerable to its risks.' (*Financial intermediaries*, p. 26).

## Contemporary bank deposit money

Confusion about bank deposits persists, especially in the UK, as confirmed beyond doubt by the standard reference handbook published in 2000 by the Bank of England: 'Money intended primarily for use in transactions ... has been hard to define satisfactorily in the UK. This is because there is **no administrative distinction**, or any clear commercial distinction, between **deposits held for transactions** and those held as wealth.'<sup>15</sup>

By contrast, the Fed draws a clear '**regulatory distinction** in Regulation D between **reservable "transaction accounts"** and **non reservable "savings deposits"**', as highlighted in the very terminology used, *accounts* vs *deposits*. Urgent temporary measures in response to the '*novel coronavirus situation*' do not alter this distinction in any meaningful way but do reveal how far the Fed is ready to go to address the Covid-19 recession.<sup>16</sup>

Nevertheless, *reservable 'transaction accounts'* remain *fractional bank money*, inferior to central bank money, which is comprised of 'safe forms of money, with no chance of default.'<sup>17</sup> This is why our money in banks will continue to remain the only security that is only fractionally safe. All other securities, both debt and equity, are protected by custody banking. Why is it, then, that there's no custody banking for our money as well?

## Wrong exit

Electronic money for the public offered a possible solution to the fractionality issue. According to the definition used by the European Central Bank (ECB), electronic money (or 'e-money') is '*an electronic store of monetary value on a technical device*', where '*the device acts as a prepaid bearer instrument which does not necessarily involve bank accounts in transactions.*'

Central bankers, however, were afraid that direct access to electronic central bank money by the public (obviously, banks had access to it from the very beginning) would cause flight of demand deposits from commercial banks. A way out was found in the EU Directive 2009/110/EC on the supervision of the business of *electronic money institutions*, which are legal persons 'granted authorisation to issue e-money' (ECB). Article 2(1) of the Directive broadens the definition of electronic money to mean 'electronically, including magnetically, stored monetary value as represented by **a claim on the issuer** which is issued on receipt of funds for the purpose of making payment transactions.'<sup>18</sup> So our money is now a claim not only on banks, but also on these new payment service institutions. Clearly, what we've got here is not safe money, it's just another form of debit card.

## Exit

Given that transaction accounts make up a relatively small proportion of all deposits, and an even smaller part of *broad money* (M4 in the UK, or M3 in the ECB system), their de-fractionalisation would not pose a monetary problem, but is not possible without political support. Banks are an inevitable payment intermediary, and so *safe transaction accounts* would have a positive effect on the stability of their business and improve their less than shiny perception in public. Incidentally, the extreme protection commercial banks get from governments and their agencies, especially central banks, has made the banking sector vulnerable and sluggish to modernise its business models. It may be paradoxical, but it's quite likely that banknotes will outlive traditional commercial banks, battered as they are mercilessly by their technologically hyper-innovative competitors. Instead of *fractional bank money*, what we'd get is *fractional digital money*.

Until this happens, all we can do is try to keep our transaction accounts safe in banks with fractional reserves. Government deposit insurance has its limits, not just in the amounts it covers, but also in terms of their aggregate volume. This is why it's good, from time to time, to check up on our money the old-fashioned way: by converting into banknotes some of the non-cash money in our bank accounts.

*MAKE SURE YOUR TRANSACTION ACCOUNTS REMAIN CONVERTIBLE*

*KEEP YOUR MONEY IN YOUR HANDS*

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<sup>1</sup> See: Vlastimir Vuković (2020), Negative Nominal Interest Rates, *CBM Research*, Paper 5, April 2020.

<sup>2</sup> William Roberds and Francois Velde (2014), Early Public Banks, *Working Paper 2014-03*, FRB of Chicago, July 2014 (Revised), p. 15-16.

<sup>3</sup> Ibid.

<sup>4</sup> Ibid, p. 4.

<sup>5</sup> Larry Neal (2000), How it all began: the monetary and financial architecture of Europe during the first global capital markets, 1648-1815, *Financial History Review*, No. 7, p. 121.

<sup>6</sup> ‘Bank money, over and above both its intrinsic superiority to currency, and the additional value which this demand necessarily gives it, has likewise some other advantages. It is secure from fire, robbery, and other accidents; the city of Amsterdam is bound for it; it can be paid away by a simple transfer, without the trouble of counting, or the risk of transporting it from one place to another.’ Adam Smith (1776), *An Inquiry into the Nature and Causes of the Wealth of Nations*, New York: The Modern Library, 1937.

<sup>7</sup> James Tobin (1987), *Financial intermediaries*, Cowles Foundation Discussion Paper No. 817, p. 5.

<sup>8</sup> R.D. Richards (1958), *The Early History of Banking in England*, Routledge, 2012, p. 192.

<sup>9</sup> Frank Whitson Fetter (1965), *Development of British Monetary Orthodoxy, 1797-1875*, Harvard University Press, p. VII.

<sup>10</sup> Irving Fisher (1936), 100 % Money and the Public Debt, *Economic Forum*, Spring Number, p. 420.

<sup>11</sup> Ibid, p. 421.

<sup>12</sup> ‘One hundred percent reserve deposits would, of course, be **perfectly safe** – that is, as safe as the national currency – and would not have to be insured. Those deposits would in effect be currency, but in a secure and conveniently checkable form. One can imagine a system in which banks and other financial intermediaries offered such **accounts**, with the reserves behind them segregated from those related to the other business of the institutions. That other business would include receiving **deposits** which required **fractional or zero reserves** and were insured only partially, if at all.’ Tobin (1987), p. 25.

<sup>13</sup> Jaromir Benes and Michael Kumhof (2012), The Chicago Plan Revisited, *IMF WP 12/202*.

<sup>14</sup> Milton Friedman and Anna Schwartz (1987), Has Government Any Role in Money?, In: Anna Schwartz (ed.) (1987), *Money in Historical Perspective*, University of Chicago Press, p. 291-2, 310.

<sup>15</sup> John Thorp & Philip Turnbull (2000), *Banking & Monetary Statistics*, Centre for Central Banking Studies, Bank of England, December 2000, p. 6.

<sup>16</sup> Federal Reserve Board – Regulation D – Savings Deposits, FAQ, Last Update: April 24, 2020.

<sup>17</sup> Wataru Takahashi (ed.) (2012), *Functions and Operations of the Bank of Japan*, Institute for Monetary and Economic Studies, Bank of Japan, p. 3.

<sup>18</sup> Directive 2009/110/EC of the European Parliament and Council of 16 September 2009.