TOWARDS A TWENTY-FIRST CENTURY BANKING AND MONETARY SYSTEM

SUBMISSION TO THE INDEPENDENT COMMISSION ON BANKING

by Ben Dyson, Tony Greenham, Josh Ryan-Collins and Richard A. Werner

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Centre for Banking, Finance and Sustainable Development
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(Professor Richard A. Werner)

nef (the new economics foundation)
(Tony Greenham & Josh Ryan-Collins)

Positive Money
(Ben Dyson)

About the submission and organizations

The is a joint submission to the Independent Commission on Banking by three organizations who share a broad concern that much of the debate on banking reform is failing to address one of the key underlying causes of financial instability in the UK economy: the system by which credit is created and allocated in to the economy. This is an area where there is considerable public and academic misunderstanding and confusion and both **nef** (the new economics foundation) and *Positive Money* are of the opinion that a key first step towards systemic reform is to provide a better understanding of how credit is created under the fractional reserve banking system. Both **nef** and *Positive money* have been working for some time with Professor Richard Werner, one of the most respected and knowledgeable academics in the field of monetary reform and banking, to develop alternatives to this system. The proposal below is by no means the finished article and many areas require further detailed research. But we do hope that at the very least this proposal opens up a space for the ICB members to consider radical alternatives to the status quo. We would, of course, welcome further discussion about any aspects of the submission.

Professor Richard A. Werner, DPhil (Oxon), BSc (Economics, LSE), began his academic career as Marie Curie Fellow of the European Commission at the University of Oxford. From 1997 to 2004 he was Assistant Professor at Sophia University, Tokyo. Since 2004 he has been at the University of Southampton, School of Management, where he is Chair in International Banking and founding director of the Centre for Banking, Finance and Sustainable Development.

Professor Werner has two decades of experience in the financial sector, including as chief economist at Jardine Fleming Securities (Asia) Ltd, Senior Managing Director at Bear Stearns Asset Management, and as senior consultant or visiting researcher at the Asian Development Bank, the Japanese Ministry of Finance, the Bank of Japan, the Japan Development Bank and the Nomura Research Institute. Richard served as a member of the asset allocation board of a US$6.5bn Japanese corporate pension fund, and has been working as global macro fund manager and provider of forecasting services and economic policy advice to investors and governments.

His book *Princes of the Yen* was a No. 1 bestseller in Japan in 2001. In his 2005 book *New Paradigm in Macroeconomics*, he warned about the dangers of “recurring banking crises,” including the pending financial collapse in the UK, and detailed the required policy responses. Richard has been voted one of the top economists by investor surveys and is sought as a commentator by the media. The World Economic Forum, Davos, selected him as “Global Leader for Tomorrow” in 2003.

nef (the new economics foundation) is one the UK’s leading think tanks, developing research and campaigning for social justice, ecological sustainability and well-being. We have a long track record of developing innovative and radical alternatives in the area of financial reform. **nef** was one of the pioneers of the Jubilee 2000 campaign which led to many billions of dollars of ‘Third World’ debt being cancelled. Our reports in this area include *Creating New Money* (2000) and, more recently in reaction to the financial crisis, *The Green New Deal* (2008), *The Ecology of Finance* (2009) and *Where Did our Money Go?* (2010). Our proposal for a Green Investment Bank has been adopted by the coalition government.

Positive Money was launched in 2010 to address the low level of understanding of fractional reserve banking among politicians, the media and the authorities. We work with think tanks, NGOs and universities to raise awareness and understanding of the flaws in the model of money and banking that underpins the global economy.

PositiveMoney

nef
economics as if people and the planet mattered

UNIVERSITY OF Southampton
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Executive Summary

This submission outlines a proposal for banking reform that addresses most of the concerns of the Commission. The proposal has some similarities with 'narrow banking' and 'Limited Purpose Banking' but avoids some of its main drawbacks (such as the need for retail deposits to be backed by government bonds), and offers additional advantages over and above narrow banking.

We believe that the banking sector would be more stable and robust under *a full-reserve banking* model, where the transactional function of banking (the payments system) is separated from the lending function, than under the current business model, which is often labeled 'fractional reserve banking'.

We also believe this reform would create greater competition within the banking sector, by hugely reducing the barriers to entry in the retail sector. In particular, we would hope to see it made much easier for new, 'Transaction Account'-only banks to enter the market to increase competition in the provision of this core payments system service. We also believe this reform would support the development of a more diverse financial services sector, placing institutions such as credit unions and traditional building societies on a level playing field with banks.

The key feature of fractional reserve banking is that the lending activity of banks effectively creates new money, in the form of new bank deposits. As the Bank of England's 2007 Q3 Quarterly Bulletin states: "When banks make loans, they create additional [bank] deposits for those that have borrowed the money". Put another way, **the money supply of the real economy depends entirely on the lending decisions of the banking sector.** Mervyn King, the Governor of the Bank of England recently identified these changes in the money supply as being central to the financial crisis:

> *"At the heart of this crisis was the expansion and subsequent contraction of the balance sheet of the banking system."*[1]

In contrast, in a full-reserve banking system, the effective money supply[2] is unaffected by the lending activities of banks. An economy running on a foundation of full-reserve banking will be less prone to pro-cyclical tendencies and less inflationary than an economy based on fractional-reserve banking. The view that separation of the activities of lending money and creating money would lead to better stability in the financial sector is also supported by Governor King:

> *"Eliminating fractional reserve banking explicitly recognises that the pretence that risk-free deposits can be supported by risky assets is alchemy.* ***If there is a need for genuinely safe deposits the only way they can be provided, while ensuring costs and benefits are fully aligned, is to insist such deposits do not coexist with risky assets****."*[3]

Our proposal for full-reserve banking ensures that risk-free deposits in the payments system 'do not coexist with risky assets'. The proposal to achieve this is simple: **we recommend to require banks to keep safe the money which customers wish to keep safe, and invest only the money that customers wish to be invested**.

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After a few minor changes to the reserve account systems used by the Bank of England, the economy would have a stable money supply, regardless of the economic climate and the willingness of the banks to lend. These changes would also give customers a truly risk-free method of holding money, regardless of the amount held, and remove the need for taxpayer-funded deposit insurance.

Our proposal is similar in spirit to and modernizes those put forward by the leading monetary economists of the twentieth century, namely Irving Fisher (1936), Milton Friedman (1960), and James Tobin (1987). It follows Huber and Robertson (published by nef in 2000) in recognizing the digital nature of modern money, and is designed to cause the minimum amount of disruption to the financial system's computer networks and IT infrastructure in the transition period.

This proposal deserves serious consideration. It is easy and inexpensive to implement – certainly much cheaper than a new bailout, and less disruptive to the City than broader regulation, such as a new 'Glass-Steagal'-type Act. It merely makes banks operate in the way people (including many economists) assume they operate already – as true intermediaries between savers and borrowers. By doing so, it removes one of the primary sources of economic instability.

Advantages of Full-Reserve Banking in Brief:

- The banking system and wider economy would become **inherently stable**, rather than inherently unstable. It would be counter-cyclical and self-limiting, unlike the existing pro-cyclical system.
- The likelihood of severe recessions or crises would be significantly reduced, **reducing the risk to the government's fiscal position.**
- Competition in the banking sector would be significantly enhanced by reducing barriers to entry to retail banking, promoting a more diverse and resilient sector overall
- **Deposit insurance could be removed,** simultaneously removing a huge source of moral hazard that distorts many financial markets and removing the risk to taxpayers and the government.
- **Poorly managed institutions could be allowed to fail** without threat to the wider economic system or the payments system.
- The payments system and money supply would be technically separate and insulated from the lending business, meaning that 'component failure' in the lending business would not affect the users of the payments system.
- There would be no need for future bailouts.
- Despite the withdrawal of deposit insurance, members of the public would have access to a means of storing money that is 100% risk free, whatever quantity of money is stored in the account.
- The money supply and the wider economy would cease to be dependent on the lending activities of the banking sector. **A credit squeeze would not cause a severe recession or rise in government debt.**
- Interest rates could be set by the market, via the supply and demand for funds, rather than by the Monetary Policy Committee. This would reduce the impact of rapid interest rate changes on vulnerable groups.
- Bank lending would be less likely to cause asset-price bubbles and resulting instability and inequality. In the current economic system, rising money supply goes hand in hand with rising debt, creating greater vulnerability to shocks and in many cases a crisis. In contrast, full-reserve banking, with the state creating, or withdrawing, debt-free money, could gradually reduce debt over time, creating a more resilient economy and stronger fiscal position.

In comparison to other reform proposals mentioned in the Commission's 'Issues' paper, the proposal has the following advantages:

- Unlike (for example) Limited Purpose Banking, the changes from the perspective of the consumer would be minimal. They would still be able to access all services from the same bank branch or

website.

- It would make the complicated separation of retail and investment banking unnecessary.
- It would make the limits on proprietary trading and investing unnecessary.
- Unlike narrow banking (as outlined by John Kay) and Limited-Purpose Banking, it does not require retail (demand) deposits to be backed up by government debt.
- It does not require the legal separation of the deposit-taking and investment departments, whilst still achieving the same effect in terms of structural safety.

Response to Common Reactions & Misconceptions:

We have addressed some of the common concerns regarding full-reserve banking. We find that concerns that full-reserve banking will cause a shortage of credit are likely to be overstated when the wider effects of implementing full-reserve banking are taken into account. We also question the assumption that leaving bank deposits 'idle' in an account is an inefficient use of resources, arguing that the principles that apply to scarce physical capital do not apply to intangible digital money that can be created at no cost.

Structure of the Submission:

Part I outlines our particular full-reserve proposal and explains its relevance to the Commission's concerns.

Part II offers a critique of fractional reserve banking, explaining how this business model makes economic stability extremely unlikely, whilst also necessitating bailouts, taxpayer-funded deposit insurance, and a wide range of market distortions.

Part III addresses common misconceptions, objections and reactions to the full-reserve banking proposal.

The appendices offer additional background information, such as the implementation in the UK of a similar reform in 1844 which prevented the creation of bank notes by commercial banks. We discuss the technical changes that would need to be implemented by the Bank of England.

Part I: Full-reserve banking – a proposal

Brief Overview

There are two core elements of our full reserve proposal:

1. The payments system is separated from risky lending activity, so that failure of investments does not pose any risk to the payments system or other crucial parts of the financial infrastructure.
2. The Monetary Policy Committee (MPC), rather than trying to indirectly influence money supply via the setting of interest rates, can leave interest rates to be set by the market and instead directly influences the money supply through the creation of new money when necessary, within strict constraints to avoid inflationary and deflationary pressure. (The MPC could continue to use inflation targeting to guide their decisions).

Step 1: Divorcing the Payments System from Risky Lending Activity

We start by classifying all accounts used by bank customers under the new structure into one of two types: Transaction Accounts, and Investment Accounts. Transaction Accounts collectively make up the risk-free payments system, while Investment Accounts, rather than holding money, actually represent a risk-bearing investment made by a customer. With the option of a risk-free method of saving money in Transaction Accounts, the Financial Services Compensation Scheme guarantee ('deposit insurance') can be removed. The risk of risk-bearing Investment Accounts is shared between the bank and the investor/saver, and is not passed on to the taxpayer through deposit insurance. Further details are given below.

Transaction Accounts

Transaction Accounts would replace present-day 'current accounts' and would provide the full range of payment services, such as cheques, debit cards, ATM cards, electronic fund transfers, and receiving money (such as a monthly salary). Holders of Transaction Accounts will have on-demand access to their funds at all times.

However, a bank will no longer be able to use the money in Transaction Accounts for making loans or funding its own investments. The Transaction Accounts will all be held 'off the balance sheet', in fiduciary trust, and not be considered a liability of the bank – as is the case in custody accounts of custodian banks.

The money paid into Transaction Accounts will be held in full within an aggregate account at the Bank of England. This aggregate account, labelled the 'Customer Funds Account', would contain risk-free, central bank issued 'digital' money. This risk-free central bank digital money, when held in a Transaction Account, will be owned by the customer.

Because the money placed in Transaction Accounts would never be lent or invested by the bank and would technically remain in the Customer Funds Account at the Bank of England, the bank would be able to repay all its Transaction Account holders in full, at any time, without having any impact on the bank's overall financial health. It would be technically impossible for the money to be lost, and a bankrupt bank would still be able to repay all its Transaction Account holders in full. (See discussion below on winding down a failed bank under full-reserve banking).

Because the bank is unable to use Transaction Account funds for investment, Transaction Accounts will not

pay interest, and will very likely incur monthly or annual fees. These fees are unlikely to be too high, as explained later.

Investment Accounts

Investment Accounts replace present-day 'savings accounts'. Under full-reserve banking, the bank would need to attract the funds that it wants to use for any investment purpose (whether for loans, credit cards, mortgages, long term investing in stocks or short-term proprietary trading). These funds would be provided by customers, via their Investment Accounts.

At the point of investment, customers lose access to their money for a pre-agreed period of time. As a legal requirement, there would no longer be any form of 'Instant Access Savings Accounts'.

Customers would agree to either a 'maturity date' or a 'notice period' that would apply to their account. The maturity date is a specific date on which the customer wishes to be repaid the full amount of the investment. The notice period refers to an agreed number of days or weeks notice that the customer will give to the bank before demanding repayment.

Unlike the Transaction Account, the Investment Account will not actually hold money that can be readily withdrawn. Any money placed in an Investment Account by a customer will be transferred to a central 'Investment Pool' held by the bank, and then be used for making various investments. In effect, the Investment Account is a customer-friendly method of representing a fixed-term investment made through a bank.

A Commercial Bank's Bank Accounts at the Bank of England

Under the current system, each large bank (or banking group) must hold a 'reserves account' at the Bank of England. The computer systems to manage these reserve accounts already exist and handle tens of millions of transactions each month. These systems would be adapted slightly to allow full-reserve banking to be implemented. Specifically, the 'reserves account' of each bank would be replaced by three new accounts at the Bank of England:

1. The Customer Funds Account

This is the account in which all of each bank's aggregate Transaction Account funds are held. This account is managed by the commercial bank, but the funds in it belong to the relevant Transaction Account holders. When a payment is made to a Transaction Account holder by someone at another bank, the balance of the Customer Funds Account will increase. When a Transaction Account holder makes a payment to someone who uses a different bank, the balance of the Customer Funds Account will decrease. The Bank of England's computer system (the 'RTGS processor') will only know the aggregate total of this account, and the bank will be responsible for keeping records of the balances of each individual customer.

2. The Investment Pool

This is the account that the bank uses to receive investments from customers, make loans to borrowers, receive loan repayments from borrowers and make payments back to Investment Account holders. The funds in this account legally belong to the commercial bank.

3. The Bank's Operational Accounts

This is the account where the bank can hold funds for its own purposes – retained profits, own capital, money to pay staff wages, etc. The funds in this account legally belong to the commercial bank.

The Loan Making Process:

Within the framework of accounts outlined above, the process of making loans after the reform is very mechanical. Crucially for economic stability, the issuing of a loan under a full-reserve system does not create new money or new purchasing power. In contrast, money - and therefore purchasing power - is transferred from one person (the investor/saver) to another (the borrower).

In the full-reserve banking system, a bank would only be able to make loans using money from one of the following sources:

a) the money that bank customers have given to the bank for the purpose of investment (specifically, the money that bank customers have used to open Investment Accounts);

b) the bank's own funds, for example from shareholders or retained profits;

c) any borrowings from the Bank of England (when permitted).

In contrast with the current system, all money in Transaction Accounts (which would currently be held in 'current accounts') is 'off limits' to the bank's loan-making side of the business. Further, banks cannot borrow from other banks in an inter-bank market (the reliance on which was the source of instability in many cases, such as Northern Rock).

Filling Up the Investment Pool

When a customer opens an Investment Account, the behind-the-scenes transaction will involve money being taken from the customer's Transaction Account and transferred into the bank's own Investment Pool.

How Banks Would Make Loans

When the bank wishes to make a loan, it will effectively transfer the amount of the loan from its Investment Pool into the borrower's Transaction Account. To do this, it will need to instruct the Bank of England's computer system to transfer the amount of the loan from the bank's Investment Pool into the bank's Customer Funds Account, and update its internal records for the borrower's Transaction Account.

How Borrowers Would Repay Loans

When a borrower wishes to make a repayment on the whole or part of a loan (or when the bank regularly takes the regular loan repayment from the customer), money will be transferred from the borrower's Transaction Account back into the bank's Investment Pool.

How a Bank Would Repay Maturing Investment Accounts

When an Investment Account reaches its maturity date or notice period, the bank transfers the money that it owes to its customer from its Investment Pool into the customer's Transaction Account.

Step 2: The New Role of the Monetary Policy Committee

Under full-reserve banking, the Monetary Policy Committee (MPC) could continue their current approach of 'inflation targeting' – aiming to steer the economy towards a target level of inflation.

The MPC Would Not Need to Set Interest Rates

At present, in normal times, the MPC tries to influence the rate of inflation by setting the rate of interest at which the Bank of England lends to the commercial banks. Central bank targeting of interest rates may have a range of effects on the economy, one of which may be to increase (or decrease) borrowing, and therefore accelerate (or decelerate) the creation of new money. If interest rates fall, more people may wish to borrow, and as banks create new bank deposits when they issue loans, a lower interest rate could under certain circumstances lead to the money supply growing more quickly.[E]

However, this is an imprecise and indirect method of influencing the money supply and the economy. Interest rates often lag economic activity, and under a variety of circumstances higher interest rates do not slow an economy, and lower interest rates fail to stimulate an economy, as bank credit may fail to recover (an example of the latter case is provided by the Japanese experience since 1991; see Bernanke, 2000; Werner, 1997; 2005: p49-57).

It is now widely accepted that real economies are characterised by conditions of imperfect information and that under such conditions markets do not automatically clear. Markets that do not clear, including the market for money and credit, are rationed (Stiglitz and Weiss 1981). Rationed markets are determined by quantities, not prices, according to the 'short-side principle': whichever quantity of demand or supply is smaller will determine the outcome. The limited liability of directors within corporations means that incentives are skewed such that entrepreneurs who borrow money main gain disproportionately compared to their potential downside (Stiglitz and Weiss 1992). Concerning the market for money and credit it means that demand is likely to outstrip supply, since lending is supply-determined (Werner 2005: 195). This means that (a) the market for credit is determined by the quantity of credit supplied by the creators of credit, and (b) those suppliers – mainly commercial banks - make allocative decisions about who will obtain loans and who will not (ibid: p195).
Under full-reserve banking, rather than using this imprecise and ineffective method of interest-rate adjustment, the Bank of England would be able to directly control the quantity of money in circulation, by directly increasing or decreasing the money supply which would then be allocated through government spending. Banks would continue to play an allocatory and maturity transformation role but as genuine intermediaries that transfer existing purchasing power, not as credit *creating* entities that expand the money supply. Addionally, under the new banking structure, the central bank could allow interest rates to be set by market forces.

Bank of England Would Choose to Increase or Decrease the Money Supply

Rather than setting interest rates, the MPC will instead make a decision to increase or decrease the money supply. In effect, the Bank of England will be tasked with the responsibility to create new money, or withdraw existing money from circulation, in line with the needs of the economy. This direct control is a much more precise tool than the setting of interest rates, and likely to be much more effective. (Whether the Bank of England should continue to use the current MPC for this key task is another question; most likely a strengthening of the analytical capabilities of the relevant decision-making body within the Bank of England will be desirable; nevertheless the tasks at hand will not be more difficult than currently. To the contrary, they will become easier. But due to their more immediate impact a central bank will be less able to brush off policy mistakes than is currently the case. Thus the new structure also enhances the accountability of the central bank).

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Making the Decision to Change the Money Supply

As happens currently, the Bank of England would have access to a wide range of data and information to guide its decisions. It would still be aiming to meet a pre-determined inflation target, such as 2% per annum.[F]

At the simplest level of analysis, if inflation is below the target, for instance the MPC could increase the money supply, while if inflation was above the target, the MPC would decrease the money supply. An element of judgement and patience is required – between an increase in the money supply and a decrease in the money supply there should be adequate periods of no change, in order to allow the effects of the recent increase/decrease to play out in the economy before further changes are made.

The Mechanics of Creating New Money

The MPC will likely take a 12-month or 2-year view of the economy, and then smooth any increase in the money supply over each month. The MPC will continue to be politically independent and neutral. This is very important, as it prevents harmful political 'tinkering' with the economy. It is important that the MPC cannot be overruled by politicians, whose decisions will be swayed by political matters rather than the long-term health of the economy. It is also important that the MPC is sheltered from conflicts of interest, and from lobbyists for the financial sector.

The Monetary Policy Committee will also still be subject to all the existing rules regarding transparency of its decisions, and the amount of the authorised increase in the money supply will be made publicly known.

Distributing Newly Created Money

Any money created by the MPC would need to be distributed into the economy to have any effect on economic activity and the inflation rate. Rather than lending this money into the economy via the banks (which depends entirely on the willingness of the banks to lend) we recommend that the money is spent into circulation via the state.

In practice, newly-created money would be added to government revenue from taxes, and could be used in a range of ways. There is a further important difference to the current system of money supply creation via banks. Since the government would spend newly-created money into circulation, it is desirable that this money is used for transactions that are productive and contribute to GDP. (For further analysis on these issues, see Werner, 2005).

The government could spend the money into circulation by:

- using the newly-created money to cover existing investment expenditure and reducing taxes by a corresponding amount;
- increasing government spending on public services;
- distributing money directly to citizens.

It should be noted that central banks used to monitor the level of non-productive credit issuance by commercial banks but, following the deregulation advice of neoclassical economic theories, they chose to abolish their "credit guidance" policies and instead allowed or encouraged unproductive bank credit expansions, typically in to real estate or financial speculation (Werner 2002, 2005: 268-294). Following the financial crisis, ironically, the UK, French, and German governments imposed rules on the allocation of new bank lending (to small firms), albeit in an ineffective manner.

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The exact methods by which the money will be spent into circulation should be formulated after a public and transparent consultation process, as they make explicit that the allocation of money is a political process. The details of possible incentive-compatible and time-consistent decision-making systems is outside the scope of this submission. To be clear, in the proposed system the Bank of England would have no involvement in deciding how the money is spent, ensuring that there is a complete separation between those who are deciding how much money to create, and those who are deciding how to spend it. This is a further advantage of our proposal: unlike in the current system, there is a clear and transparent separation of fiscal (allocation) and monetary (money creation) policy.

How Full-Reserve Banking Would Address the Concerns of the Commission:

A Stable Money Supply Leads to a Stable Economy

Lending in a full-reserve banking model involves the transfer of real, risk-free central bank money from the investor to the borrower. In contrast to fractional reserve banking, this process does not increase the quantity of bank deposits that can be withdrawn on demand. As a result, while lending under a fractional reserve banking system actually creates new, additional purchasing power, lending under full-reserve banking would merely transfer purchasing power from one person to another. That is to say, lending under full-reserve banking would not increase or decrease the broad money supply.

Banks in this system become true intermediaries. They become credit brokers rather than credit creators, and their lending decisions have no power to swell or contract the broad money supply. We believe that this would significantly reduce the pro-cyclical tendencies within the financial system and would therefore increase the stability of the banking sector and the wider economy.

Improving Stability Within Individual Banks

Full-reserve banks would be significantly more stable than fractional reserve banks. Instability within fractional reserve banks comes from the fact that the majority of the bank's customers can demand repayment at any time from any accounts that do not have maturity dates or notice periods. This could result in the bank being required to pay back huge sums of money in a short period of time, making the bank effectively insolvent. The banks try to guard against this by keeping back reserves, but they continually walk a knife-edge between keeping reserves high enough to cover the maximum likely net withdrawals, and keeping them as low as possible in order to free money up for making further loans (to maximise profits).

The post-reform situation is much more stable. The stability arises from the fact that the funds a bank uses to make loans are now 'locked in' – customers can no longer demand them back whenever they choose. This makes it much easier for the bank to predict their cash flow into the future, and to prepare accordingly, meaning that full-reserve banks are much less likely to become insolvent.

This increased stability is explained in more detail in Appendix 2.

Reducing Moral Hazard: Risk Stays with the Bank & Investor

Under the current system, the Financial Services Compensation Scheme (FSCS) guarantees bank deposits in eligible banks up to £50,000. This means that a savings account with a bank is seen to be risk-free, even though the money may be used for mortgage lending, personal loans or risky proprietary trading. In effect, while the potential upside of an investment goes to the bank and the saver/investor, the potential losses fall upon the taxpayer.

In contrast, under full-reserve banking, the risk of any investment now stays with the bank and the investor, rather than falling on a third party (i.e. the taxpayer).

In some accounts, the risk will fall entirely upon the bank, while on others a large proportion of the risk will fall on the investor. The exact balance of risk sharing will be determined by the 'Investment Account Guarantees' outlined in Appendix 3. Any investor opening an Investment Account will be fully aware of the risks at the time of the investment, and those who do not wish to take the minimum amount of risk will be able to opt for an (almost) no-risk - and consequently low-return - account.

Addressing the Too-Big-Too-Fail & Too-Systemic-To-Fail Problems

Under full-reserve banking, any bank can be allowed to fail, regardless of its size. A bank can be wound down in the following way:

- Transaction Accounts, being fully funded with central bank money and not held on the balance sheet, would be transferred to other banks (with the customer nominating the new bank that they want to move to). In practical terms and with intelligent design of the computer systems, this process could be completed within days of a bank's collapse and Transaction Account holders should not experience more than an hour when they are unable to access their money.
- Investment Account holders would become creditors of the bank and need to wait to recover as much of their investment as possible through normal liquidation proceedings.
- At no point would taxpayer's money need to be spent on compensation or covering the liabilities of the bank.

Enhancing competition and reducing barriers to entry in retail banking and payment services

Under full-reserve banking, a new bank entering the banking system should not create an ongoing additional workload for the Bank of England, beyond the initial setup process. If the Bank of England's computer systems are designed well at the point of making the switch to full-reserve banking, it should be possible to very easily connect a new bank to those systems and not require any further human intervention on the part of the Bank of England.

This 'plug and play' ability for a new bank to become part of the mainstream banking system should reduce the costs to the Bank of England of dealing with commercial banks. This would help to reduce the barriers to entry for new banks, and would therefore help to increase competition in the sector. In particular, we would hope to see it made much easier for new, Transaction Account-only banks to enter the market to increase competition in the provision of this core payments system service. As well as new limited company retail banks, this could include credit unions, traditional building societies, mutuals and Community Development Finance Institutions (CDFIs) which currently struggle to compete for high street retail custom because they do not have the same 'credit-creating' powers of banks nor the ability to cross-subsidize their retail operations through income from investment banking activities (Werner 2009).[6] As the FSA recently suggested:

> "Current accounts are of course only one part of the services provided by banks. Cross-subsidisation arises in the retail banking business model not just through packaged products, but in other ways. The model is based on providing a range of services such as deposit-taking, savings accounts, home loans, unsecured credit, and insurance. Cross-selling and cross-subsidisation are integral to this model, and the advantages of offering a portfolio of services can have major effects on the scope for entry. It would be very challenging for firms to enter and compete solely as deposit-takers against banks providing an integrated portfolio of services. Similarly, it would be difficult for a firm to enter the loan market profitably as it risks taking on poorer quality credit, as shown by the experience of the former

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building societies which competed aggressively in mortgage lending. Overall, there are strong drivers forcing potential new entrants to adopt an integrated model, and this acts as a barrier to entry to any firms without substantial resources and banking expertise."[7]

Reducing Risks to the Government's Fiscal Position

There are three key ways in which full-reserve banking has a positive impact on the government's fiscal position, in comparison to fractional reserve banking:

1. The reduced risk of instability in the banking sector, and the stable money supply, reduce the risk of a recession, and therefore reduces the risks of a sudden large drop-off in tax revenue. This reduces the risk of the government needing to increase government borrowing to cover normal expenditure.
2. As outlined earlier, full-reserve banking makes taxpayer-funded deposit insurance wholly unnecessary, and ensures that the taxpayer has absolutely no liability for the banking system.
3. Because no full-reserve bank would be 'too big to fail', there is no need for any taxpayer-funded bailouts, potentially saving the government tens of billions of pounds.

Increasing the Pace of the Recovery

Because any new money created by the Monetary Policy Committee would be spent into the economy rather than being lent, this injection of new, 'debt-free' money can help to reduce the overall level of indebtedness of households. This is in contrast to the fractional reserve banking system, in which the only way to inject new money into the economy is to increase the overall level of debt held by the public (since new bank deposits are only created when loans are taken out).

We believe that a falling overall burden of household debt is likely to have positive effects on economic growth and the pace of the recovery.

Other Key Benefits of Full-Reserve Banking:

No Need for Deposit Insurance

Deposit insurance can be completely removed from the banking system, reducing the risks to the taxpayer and also reducing the distortions and moral hazard that arise when the risks of an investment fall on a third party.

Full-Reserve Banking is Not Pro-Cyclical

Fractional reserve banking is pro-cyclical, since rising debt creates an increasing money supply, which in turn generates a 'credit-fuelled boom'. This seemingly benign economic environment encourages others to take on further debt to the extent that inflation becomes a problem, especially in asset prices (such as housing). Eventually the cost of servicing the debt starts to become excessive for certain groups, who then default, triggering a recession.

In contrast, lending under a full-reserve banking system does not increase the total purchasing power, and therefore should never provide such a pro-cyclical stimulus to the economy. This should result in greater economy-wide stability, with massive benefits for real-economy businesses, who will be able to plan with less risk of a severe recession.

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Minimum Disruption for Members of the Public

For members of the public, the service provided by full-reserve banks will appear to be almost identical to fractional reserve banking. The two key differences are:

1. Transaction Accounts will no longer pay interest, and may charge low fees for some or all services (depending on the bank and specific account).
2. There will no longer be any 'instant access savings accounts', and interest will only be earned on money that can be 'tied up' for a period of time.

However, Transaction Accounts could continue to be labelled 'current accounts' and provide all the same services (except for paying interest). The switch from 'savings accounts' to Investment Accounts should cause very little confusion for members of the public (although we recommend that the name 'Investment Account' is used to clarify that these accounts are no longer risk-free storage accounts).

No Need to Manipulate Interest Rates

The setting of interest rates by the Bank of England is a relatively ineffective tool in managing the money supply. By sharply reducing reliance or even removing this tool, and giving the central bank the ability to directly affect the money supply in a quantitative fashion, has two substantial benefits:

1. The creation of new money by the Bank of England, e.g. on the authorisation of the MPC, and the distribution of this money into the economy via spending, will have a quicker and more precise impact on the economy than the changing of interest rates. It is thought that interest rate changes take up to 2 years to have a real impact in the economy, whereas spending of new money into the economy has an immediate impact.
2. By removing the need to manipulate interest rates we minimise the 'collateral damage' of monetary policy. The MPC currently changes interest rates to encourage a relatively small group of people to increase their borrowing, but at the same time, changing the interest rates reduces the income of millions of pensioners who rely on the interest on savings. When the economy is in a recession, interest rates are cut to encourage people to borrow more, but then, once those people have borrowed and the economy improves, interest rates are pushed right up again, causing financial hardship for those who borrowed to stimulate the economy.

Full-Reserve Banks Would Be Exposed to Market Discipline

Since full-reserve banks can be allowed to fail and would not be supported by the taxpayer, banks will be exposed to free market discipline. This should address the worst market distortions currently evident in the banking sector and remove much moral hazard and misaligned incentives.

Full-Reserve Banking Has No Significant Impact on Capital Markets

Unlike commercial banks, participants in the capital markets never had the ability to create credit (in the form of government-guaranteed bank deposits). Consequently, beyond changes in the supply and demand for credit in the long-term (which are addressed in Part 3), a switch to full-reserve banking has very little impact on the capital markets. In fact, the fact that a Transaction Account at any full-reserve bank would be as secure and risk-free as a CHAPS or reserve account at the Bank of England means that capital market participants who are not members of the Bank of England's reserves or standing facilities schemes would still have access to an instantly-clearing risk-free means of settlement. This could actually contribute to the efficiency of capital markets.

Disadvantages of Full-Reserve Banking:

Cost of Transaction Accounts

Because the banks are unable to use the funds placed in Transaction Accounts to invest or lend, they will be unable to earn a return on these funds. As they will still incur the costs of providing payments services (cheque books, ATM cards, cash handling, etc.), they will almost certainly need to implement account charges to cover these costs.

However, it is likely that these fees will be kept low thanks to market competition, even more so if measures are taken to reduce barriers to entry in the payments services side of banking.

In addition, any new annual fees on Transaction Accounts need to be seen in the light of the savings to the taxpayer through removal of its financial exposure to the banking system, and the other benefits of full-reserve banking, such as greater economic stability and a lower likelihood of recessions.

In addition, with the model of full-reserve banking outlined here, multi-lateral net settlement schemes such as BACS, Faster Payments, Credit Card clearing, Visa and Mastercard, may be unnecessary, and all payments could be routed directly through the Bank of England's RTGS Processor.[g] This could significantly reduce the costs to banks of operating via numerous 'middlemen' and make it cheaper overall to provide payments services. We can elaborate on this last point if it is of interest to the Commission.

Lower Liquidity for Households

Full-reserve banking does undoubtedly reduce the liquidity of households who want to invest and earn a return, since it requires that savers/investors give up access to their money for the period of an investment. As a result, a full-reserve Investment Account is less liquid than an 'instant access savings account' currently provided by fractional reserve banks.

However, the benefits of fractional reserve banking in terms of the increased liquidity for households is far outweighed by the costs of deposit insurance, the risk to the government's fiscal position, and the impact upon households of recurrent recessions. There is a real trade-off between liquidity for investors and stability for the banking sector and the economy as a whole. It is worth asking whether the public would have accepted lower liquidity in return for avoiding the recent financial crisis and the resulting tax rises, spending cuts and higher national debt.

If reduced liquidity is thought to be a serious concern, one way of addressing this concern is to allow Investment Account holders to reduce a small proportion of their balance on demand. This does re-introduce some instability to the system (albeit to a much lower extent than fractional reserve banking). We can elaborate on this option upon request.

Tying up of 'Idle' Deposits

This issue is addressed in part 3, 'Addressing Common Misconceptions About Full-Reserve Banking'. We believe that, on analysis, this is not a valid criticism of full-reserve banking.

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Benefits of Full-Reserve Banking over Alternative Reforms

No Need to Back Retail Deposits with Government Debt

With our model of full-reserve banking, members of the public are able to use risk-free, digital central bank money in their Transaction Accounts. Transaction Accounts are held off the balance sheet, and therefore there is no need for a backing asset, meaning that our full-reserve banking proposal does not require retail deposits to be backed by government debt.

Interestingly, backing retail deposits with government debt is illogically circular, since government debt is, in effect, backed by the government's ability to collect retail deposits from the public via taxation. In other words, under proposals by Kay and Kotlikoff, retail deposits would – ultimately – be backed by retail deposits.

Lack Of Need For Limits on Proprietary Trading and Investing

We can require that banks disclose the intended use of money invested in each type of Investment Account, and that they ring-fence this money appropriately. Doing so would mean that banks that wanted to engage in proprietary trading and investing would be able to do so, but only with funds that investors agreed to have used in this way. In other words, savers/investors who were happy to accept the risks that come with proprietary trading or investing, and were fully aware that there would be no government-funded compensation if the investments lost money, would be able to provide the funds for such activities. Banks would be able to engage in proprietary trading, but would need to bid for those funds from members of the public at a price (interest rate) that reflects the risk. This fact would probably reduce the overall amount of funds that banks can put into proprietary trading and therefore reduce instability from speculative trading.

This system would mean that proprietary trading and investing could continue within the same entity as a normal retail bank, without exposing the payments system to any risk.

Lack of Need for Separation of Retail and Investment Banking

As outlined, we can require banks to disclose the intended use of money invested in each type of Investment Account. If we did this, investment banking could continue within the same legal entity as a commercial bank, but only with funds that the savers/investors wish to have used for investment banking.

Minimum Disruption For Members of the Public

In contrast to the Limited Purpose Banking proposal, which requires all investments to be made through mutual funds, members of the public would find it very easy to adapt to the new Transaction Accounts and Investment Accounts, which are almost identical to present-day 'current accounts' and 'savings accounts'.

No Loss of Synergies Between Deposit-Taking and Bank Lending

With our model of full-reserve banking, the same legal entity can provide payment services along with investment and lending services. The same bank branch could therefore provide all the services that the average member of the public needed, and therefore the synergies between these different services are preserved.

Part II: A Critique of the Current Business Model of Banking ('Fractional Reserve Banking')

"…eliminating fractional reserve banking explicitly recognizes that the pretence that risk-free deposits can be supported by risky assets is alchemy."

(Mervyn King, 2010, p17)

"The essence of the contemporary monetary system is creation of money, out of nothing, by private banks' often foolish lending."

(Martin Wolf, Financial Times, 9th Nov 2010) [e]

We contend that a lack of understanding of the wider impacts of fractional reserve banking will lead to an inadequate response to the crisis and inappropriate recommendations with regards to the shape that banking reform should take. We have outlined some of the main impacts of fractional reserve banking below. We have first listed those that are directly within the Commission's remit, before adding some additional issues that are outside the remit but highly relevant to any discussion of the long-term health of the economy and the banking sector.

But before detailing specific consequences, we clarify the relevance of fractional reserve banking.

The Relevance of Fractional Reserve Banking

Under fractional reserve banking, the only way that the public (households and businesses) as a whole can get additional money is to borrow it from the banking sector. Recall that "When banks make loans, they create additional [bank] deposits for those that have borrowed the money" (Bank of England Quarterly Bulletin 2007 Q3).

The missing part of this statement is that bank deposits are only created when a member of the public (or a business) takes out a loan. In other words, the banking sector has an effective monopoly on the supply of money (in the form of bank deposits) to the public and the real economy. In effect, the aggregate money supply in the hands of the public is 'on loan' from the banking sector.

The following statement, from the Commission's Issues paper, partially recognizes the role of banks in providing credit (or money) to households and businesses, but fails to recognize their role as the sole supplier of money to the public:

> "The UK banking sector makes a key contribution to the wider economy through the provision of credit to households and businesses. The financial crisis led to a reduction in the availability of credit, and produced a sharp decline in UK GDP." (Point 3.24 of the Commission's Issues paper)

If banks lend, new money (in the form of bank deposits) is created and the economy grows (even if unsustainably). If they stop lending, the economy slows down and we approach a recession or depression. The lending decisions of the banking sector as a whole have the ability to swell or contract the money supply

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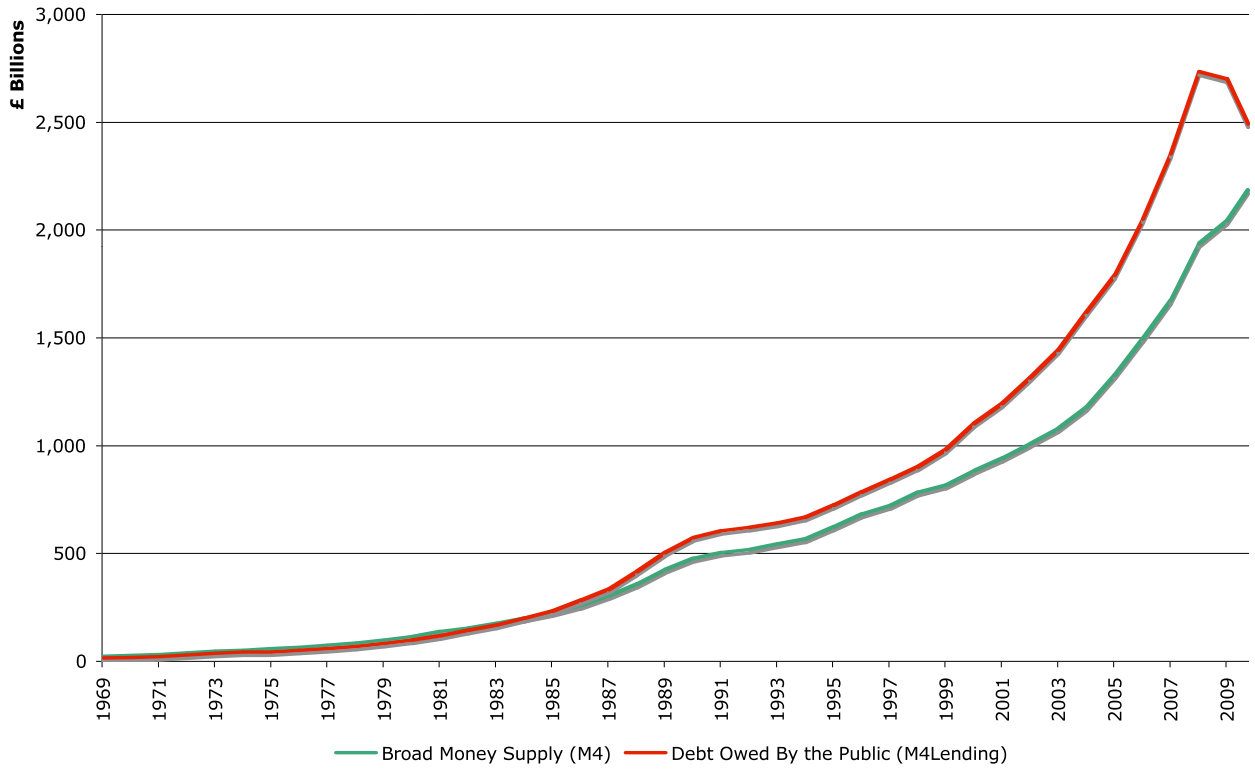
of the nation, with a significant and often negative impact on the wider economy.

A second statement from the Commission's Issues paper also highlights how poorly the effects of fractional reserve banking are understood:

> "One of the most obvious trends was the explosion of debt. In the twenty year period running up to the crisis, the aggregate debt of the UK financial, household and corporate sectors as a percentage of GDP increased more than sixfold…" (Point 2.5 of the Commission's Issues paper)

When bank deposits are only created when an individual or company takes out a loan, then in order to have a growing money supply, the public must have a growing overall burden of debt. As long as the real economy's money supply is issued by commercial banks via fractional reserve banking, then a growing money supply must be accompanied by growing debt. This can be seen in the red and green lines in the chart below, which represent total debt and total (broad) money supply respectively[;D].



How Fractional-Reserve Banking Works Against the Concerns of the Commission:

Banking Sector Instability

Fractional reserve banks are inherently unstable thanks to their fundamental business model. To maximise profits, a fractional reserve bank needs to lend out as much of the deposits that it receives as it can, with the only constraints being:

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1. It must retain or buy enough Tier 1 and Tier 2 capital to meet Basel capital adequacy ratios.
2. It must retain enough central bank reserves to be able to make settlement payments to other banks, either in real time or via multi-lateral net settlement.[;;]

In effect, fractional reserve banks walk a tightrope between:

1. Having more central bank reserves than they need and missing lending opportunities as a result, and
2. Having fewer central bank reserves than they need and risking becoming illiquid and ultimately, insolvent.

The existence of inter-bank lending, the Bank of England's Discount Window Facility, and the implicit assumption that the government will bail out any bank that runs into financial difficulties makes it likely that banks will tend towards option (2) above. In other words, fractional reserve banks have a commercial incentive to run their central bank reserves to the very lowest level that allows them to meet payments on a day-to-day basis. Any bank that holds the practical minimum level of reserves is very vulnerable as soon as economic conditions or market sentiment changes.

There are two other ways in which instability is inherent to fractional reserve banking:

1. Every loan that the banking system makes creates more deposits, and consequently funds more loans. As a result, as people's financial position gets worse and they take on more debt, the overall availability of loans actually increases. This creates a 'positive feedback loop' – as we get further and further into debt, banks become increasingly willing to offer more debt. Particularly when there are relatively benign macroeconomic conditions, e.g. low interest rates and inflation and steady or high growth, this can lead to ever-higher levels of personal and household debt, making economies much more vulnerable to external shocks. As we saw with the financial crisis, financial innovations, including forms of derivatives and securitisation, allow banks to move debt off their balance sheets, creating even greater capacity to issue debt (credit). Eventually, this led to a wave of defaults, such as seen in the sub-prime mortgage market in America, which in turn triggers a domino effect throughout the global economy. This means that the loans that banks originally expected to be repaid are no longer likely to be repaid, creating a huge shortfall in their income and potentially bankrupting them. In short, the design of the current banking system creates a fundamental distortion to the maturity transformation role of banks and creates systemic volatility.

2. The majority of the bank's customers can demand repayment at any time from any accounts that do not have maturity dates or notice periods. This could result in the bank being required to pay back huge sums of money in a short period of time, making the bank effectively insolvent. The banks try to guard against this by keeping back reserves, but they continually walk a knife-edge between keeping reserves high enough to cover the maximum likely net withdrawals, and keeping them as low as possible in order to free money up for making further loans (to maximise profits).

Risk to Economy-Wide Instability, and the Impact on Lending & Money Supply

As outlined above, the banking sector has an effective monopoly on the supply of money to the public (individuals, households and businesses). The amount of money in the hands of the real economy is determined by – and dependent upon – the lending decisions of the banking sector.

This means that the real economy does not have a stable money supply. If incentive structures for bank staff are set in such a way as to encourage irresponsible lending, then the money supply (and level of debt) in the economy will soar, as happened between 2000 and 2007. This creates the illusion of a booming economy,

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which then encourages people to take on even more debt. The cost of servicing this debt eventually starts to act as a brake on the growth of the economy, and as soon as this plays through into an economic downturn, some debtors become unable to service their debts, triggering defaults. These defaults force the banks to reign in lending, causing a contraction in the money supply and exacerbating the downturn. If the banks continue to refuse to lend, then the money supply contracts even further, causing a full-blown recession.

It seems unlikely we will achieve economic stability when the quantity of money in the economy depends entirely on the sentiments of a banking sector that has huge incentives to over-issue credit, shareholders with limited liability, and is underwritten by an implicit public subsidy.[;:] In contrast, full-reserve banking would deliver a stable money supply and is more likely to deliver a stable level of lending.

Household Affordability and Debt

Between 2000 and 2009, bank lending created around £1.2 trillion of new money, in the form of bank deposits.[;Q] A significant amount of this new money was created via the issuing of mortgages: while lending to the real economy remained relatively flat in that period, lending on property increased 5-fold (nef 2010:15). This undoubtedly contributed to the house price bubble.

If house prices had kept in line with earnings since 1950, the average house price would now be £88,807[;E]. The recent house price boom, fueled by excessive lending by the banking sector alongside securitization (making it possible to move risks off the balance sheet), has more than doubled the cost of housing relative to income. When interest costs are factored in, this could add up to an additional £300,000 that each young household will have to pay to the banking sector, via mortgage interest, over the lifetime of the mortgage.

Creation of Asset Bubbles

When banks make loans, they create new deposits (i.e. new money) for the borrowers. As the sole creators of bank deposits, the banking sector is able to control the allocation of credit and investment in the economy. Under the current structure, they have strong commercial incentives to direct their lending towards housing and commercial property, for the simple reason that there is a tangible asset that can be repossessed if the borrower does not keep up repayments, and therefore the loan is less risky than a loan to say, a small business or start-up, and due to the effect their behaviour has on the price of the collateralised assets. By creating credit for asset transactions, banks push up asset prices. This positive feedback also works in the opposite direction as soon as credit creation slows or stops at the height of an asset bubble. Since asset transaction credit is unsustainable, it will turn into bad debts and bring the banking system down with it (Werner, 1991, 1992, 1997, 2005). Whilst our suggested reforms will not change the attractiveness of mortgage lending to banks over other forms of lending and will not deal with the problem of banks shifting mortgage debt off their balance sheets through Residential Mortgage Backed Securitisation (RMBS), it should significantly reduce the quantity of credit that is pushed into the housing market and thus the pro-cyclicality of the housing market more generally.

Drag On Economic Growth & Development

In an economy based on fractional reserve banking, a rising money supply must be accompanied by rising debt (since new money – in the form of bank deposits – is only created if the public borrow from banks). The cost of servicing the rising debt reduces the disposable incomes of members of the public and therefore reduces spending in the real economy, whilst diverting money back into the financial sector. If the money

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paid in interest to the financial sector is retained within the financial sector, then it results in the financial sector growing while the real economy shrinks in relative proportion. If much of the interest is redistributed to bank staff, then, due to the concentration of highly-paid bank staff in the City of London, this would result in increasing inequality between the City and the rest of the country, with the rest of the country becoming poorer while the City grows as a percentage of GDP.

A variety of studies show that economic inequality and the concentration of wealth in the manner caused by the current arrangements of the banking system is detrimental to productive economic growth and well-being (Werner, 2005; Wilkinson and Pickett 2009; Frank 2007; Chang 2010).

Risk To The Government's Fiscal Position

Fractional reserve banking poses a significant risk to the government's fiscal position for two main reasons:

1. As outlined above, the pro-cyclicality of fractional reserve banking appears to be a major contributing factor in the boom-bust cycle. In the bust phase of the cycle, government tax revenues fall significantly, meaning that the government is faced with the choice of either a) rapidly cutting public services or raising taxes, or b) running up a sizeable deficit. Rapid cuts of public services or tax rises are usually politically unacceptable (and have potentially damaging economic impacts in terms of reducing demand) so the government is usually forced to run up a deficit, increasing the national debt and worsening the government's fiscal position.
2. The inherent instability of fractional reserve banking as a business model means that governments are very likely to be called on for financial support sooner or later.

Additional Problems With Fractional Reserve Banking:

Weakness of interest rate adjustment as a macroeconomic tool

When the Bank of England feels that inflation is getting too high, it tries to indirectly reduce the money supply by raising interest rates to reduce borrowing. If the economy is in a recession, it does the exact opposite, lowering interest rates in order to encourage more borrowing, as an indirect way of increasing the money supply.

This method of 'steering' the economy using interest rates is necessary under fractional reserve banking, and is another great cause of instability. It is a little like driving a car by stepping on the brake and the accelerator at the same time. When the economy is 'overheating', the banking sector has its foot on the accelerator (creating more money as debt) while the Bank of England has its foot on the brake (raising interest rates to slow down the borrowing). When the economy sinks into a recession, they swap pedals: the banking sector slams on the brakes (refusing to lend) and the Bank of England steps on the accelerator (cutting interest rates to their lowest level). This type of management of the economy appears unlikely to ever lead to economic stability. Indeed, many studies demonstrate that the weakness of changes in interest rates in effecting the real economy (Blanchard and Fisher 1989; Werner 2005). One of the most widely used examples is Japan in the 1990s, when interest rates were held at zero for an extended period but there was no tangible impact on output mainly because banks were too heavily leveraged. A similar story can be seen today in the UK.

Interest rate manipulation is also a zero-sum game in terms of the social cost to managing the economy. When interest rates are cut, pensioners and other savers who were living off interest income from their savings see their wealth and income rapidly deteriorate. Meanwhile, other individuals, especially the young, are tempted to borrow because credit is cheap. This is supposed to stimulate the economy by raising the money supply. But if the economy does pull out of recession, the Bank immediately increases interest rates,

reducing the income and purchasing power of the very people who rescued the economy by borrowing when interest rates were low.

In contrast, full-reserve banking offers the Bank of England and the Monetary Policy Committee a way of directly increasing or decreasing the money supply, and therefore avoids this 'manic-depressive' management of the economy. It also avoids the need to shift interest rates that affect every existing borrower simply to influence the small group of people who are considering increasing their borrowing at any particular moment in time. Under full-reserve banking, interest rates can be set by supply and demand through the markets, with the banks acting as intermediaries between savers and borrowers.

Re-Distribution Of Wealth Upwards & Inwards

Because the entire money supply is created as a debt by commercial banks, in effect interest must be paid to the banks on every single pound of bank deposits that exists in the economy. A part of this interest is redistributed back to depositors via interest on savings accounts, etc., but by far the bulk of it is distributed to the workers of the banks, via salaries and bonuses. This creates three re-distribution effects:

1. From the Poor to the Rich:

All money is created as debt by the banking system. This shifts the 'baseline' of poverty down to zero or negative, rather than a low but positive bank balance. Because it is those on below-average incomes that end up with much of the debt, they end up paying interest to the banking sector, in effect meaning that the poor subsidise the middle class or rich.

2. From the 'Real' Economy to the Financial Sector

Businesses are also in a similar situation. The 'real' (non-financial), productive economy needs money to function, but because all money is created as debt, that sector will also end up paying interest to the banks. This means that real-economy businesses – shops, offices, factories, etc. – end up subsidising the banking sector.

3. From the Rest of the UK to the City of London and the South East

Because this debt-based system returns money to the banking sector, and the bulk of banking sector salary payments are concentrated within the City of London, this means that there is a transfer of income from the rest of the UK to the City of London and the South-East.

All of these 're-distribution effects' are inherent to the system and will continue year after year as long as the money supply is issued by commercial banks as debt, via fractional reserve banking. Further research needs to be done, but it is very possible that the 'upwards-and-inwards' redistribution of income caused by this system of issuing money cancels out any downwards-and-outwards redistribution of income through the welfare state. Looked at another way, the welfare state may only be necessary because of the design of the banking system, and could be significantly scaled back if the method of creating money was reformed. This should offer a significant opportunity to improve the fiscal position of the government.

The Need for Deposit Insurance

Under fractional reserve banking, a bank will never have sufficient money at any one time to repay all its demand liabilities (instant access accounts) simultaneously. This means that a 'run on the bank' can very

quickly force a bank to close its doors and effectively become insolvent. Once people run on one bank, other members of the public may run on their own bank, triggering the quick collapse of the entire banking system.

To prevent this, the government, through the Financial Services Compensation Scheme (FSCS), guarantees that no customer will ever lose money deposited in any account with an eligible bank up to £50,000.

Whilst making the banking system less likely to collapse, this deposit insurance causes a huge economic distortion to the key process of maturity transformation that banks undertake, as Mervyn King recently pointed out (King 2010). It makes the investment products of a high-street bank appear to be risk-free, making them effectively as safe as government bonds or physical cash. This is despite the fact that the underlying assets backing those deposits may range from conservative mortgages to sub-prime lending to risky proprietary trading.

In short, deposit insurance ensures that while the profits of an investment go to the bank and to the investor/saver, any extreme losses will fall upon the taxpayer. To put it another way, this is the privatisation of profit and the socialisation of risk. This introduces the problem of moral hazard. Savers have no need to take any interest in the activities of their bank, because they know that even if the bank fails, they will not lose money. This makes saving with a bank a 'one-way bet'.

Consequently, deposit insurance means that the level of funding provided to different investments does not appropriately reflect the real risks of those investments. Banks are able to take money from depositors who believe that their investments are 'risk-free', and then invest those funds in risky proprietary trading or investing. If the original depositors were required to shoulder at least some of the risk of proprietary trading, then it is likely that fewer funds would be made available for those investments.

This disconnect between the risks and the potential gains of an investment – caused almost entirely by deposit insurance – is likely to be a root cause of a major shift towards short-term, profit-seeking speculation over the last few years.

Part III: Addressing Common Misconceptions about Full-Reserve Banking

1. 'Full-reserve banking would lead to a shortage of credit'

The first issue to recognise is that the current level of demand for credit is more accurately described as a dependence on debt. This dependence arises for two reasons:

1. The only method by which the public, collectively, can get access to bank deposits ('money') is by taking on loans from a bank. Therefore, if the economy needs more money, this new money must be borrowed from a bank. This means that the lack of an alternative method of injecting money into the economy ensures that the demand for credit is artificially inflated.
2. The fact that every bank loan issued creates brand new, additional purchasing power is a major contributing factor in inflation. The 150% (£1.2 trillion) increase in the money supply from 2000 to 2009 was undoubtedly significant in the 197% increase in house prices[F], given that the bulk of new money created as a result of lending goes directly into the housing market. This implies that the demand for credit now is artificially inflated by the ability of bank lending to inflate house prices and require members of the public to borrow more in order to buy a house.

As a result, we would say that the fractional reserve banking system artificially inflates the need for credit, and that the demand for credit will always be higher under a fractional reserve banking system than under a full-reserve banking system.

In other words, there will be less need for credit in a full-reserve banking system.

In addition, the introduction of a new source of 'debt-free' money via the Monetary Policy Committee and government spending (or tax reductions) will allow the public to reduce their overall level of debt. With lower debt, households will have higher disposable income and therefore less need to borrow.

The implication is that, following a period of transition, the need for credit will be much lower under full-reserve banking than under a fractional reserve banking system.

The transition between our current, high level of dependency on credit, and a lower level of credit under full-reserve banking, can be managed so as to avoid any form of short-term credit crunch. There are various methods of easing this transition, such as the Bank of England and MPC creating additional new money that can be lent-on by the banks, in order to fill the temporary gap between the current demand for credit and the current level of real savings. As the benefits of full-reserve banking start to play out in the economy, this temporary provision of credit may be gradually phased out.

2. '[Full-reserve banks] tie up bank deposits, rather than allowing them to be made available to fund productive investment through financial intermediation.'

This statement, adapted from the Commission's Issues paper, has a number of problems.

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Firstly, the statement implies that intermediation channels funds into productive investment. As the last few years have shown, banks generally have a commercial incentive to funnel more of their intermediated funds into non-productive, asset-price speculation (such as housing and commercial real estate; Werner, 1997, 2005). Only around one third of bank lending goes into productive investment in businesses (nef 2010:15).

Secondly, the statement implies that banks actually undertake financial intermediation. While this is an accurate description when looking at the flows of central bank money between reserve accounts at the Bank of England, it certainly isn't accurate when discussing bank deposits. Banks do not intermediate bank deposits between savers and borrowers – instead, "when banks make loans, they create additional [bank] deposits for those that have borrowed the money" (Bank of England Quarterly Bulletin, 2007 Q3).

Thirdly, the statement implies that bank deposits are scarce and therefore need to be put to good use. This kind of thinking is appropriate when discussing gold coins or expensive hospital equipment, but it is not appropriate when discussing digital money that can be created at no cost.

The statement also implies that money should be intermediated and invested even if the depositors do not wish it to be invested, through the mechanism of fractional reserve banking. This permanent intermediation is possible via fractional reserve banking, but the cost is the instability and excessive debt that fractional reserve banking generates.

For clarity, under our proposal for full-reserve banking, it is inaccurate to think of money as being in either a Transaction Account or an Investment Account. In fact, all money will be held in Transaction Accounts at all times, and an Investment Account will just be a representation of the investment – i.e. a transfer of funds from an investor's Transaction Account to the Transaction Account of a borrower. The same quantity of funds in Transaction Accounts could support either a high or low level of investment, so there is no loss from having funds in a Transaction Account rather than having them on loan via fractional reserve banking.

3. 'Allowing the state to issue money would be inflationary'

The common reaction to the suggestion that the state (or any part of the state) should be responsible for issuing new money is that elected politicians would abuse this power to the detriment of the economy. We consider that a very valid concern, and therefore we have proposed that the Monetary Policy Committee, insulated from political influence, should be responsible for increasing or decreasing the money supply. They would be specifically charged with the task of creating as much money as the economy needs to meet the inflation target. Any excess creation of money under this system would push inflation above the target, in which case the Monetary Policy Committee would need to stop increasing the money supply or even start to withdraw money from circulation to dampen inflationary pressures.

This separation of powers – between those deciding how much money should be created (the MPC), and those deciding how to spend any newly-created money (the government) – should avoid the misaligned incentives that would result if elected politicians had to make decisions over the money supply.

The question, then, is whether inflation is less likely when the commercial banking sector issues money (by creating new bank deposits when they make loans) than if money were created by an agency of the state, such as the Monetary Policy Committee.

The track record of the banking sector with regards to managing the money supply and avoiding inflation is not good. Between 1990 and 2009, the lending activities of banks increased the money supply by an average

of 8.2% p.a. (a total increase over that time of 370%).[T] In this time, the Retail Price Index has increased by 88.5%[V] (an annual average of 3.15%) while total house price inflation in that time has been 180%.[g] From this it appears that removing the ability of bank lending to swell the money supply could go a long way to reducing inflationary pressures in the economy.

Despite this logical analysis, knee-jerk reactions may continue. Martin Wolf points out the inconsistent though with regards to state-issued currency when he states:

> "The essence of the contemporary monetary system is creation of money, out of nothing, by private banks' often foolish lending. Why is such privatisation of a public function right and proper, but action by the central bank, to meet pressing public need, a road to catastrophe?"[e]

Further to the historical evidence, the incentives of banks should be considered. A Monetary Policy Committee with the responsibility for creating the right quantity of new money to meet a particular inflation target will stop creating additional money as soon as the inflation rate rises above the target rate. In contrast, banks will continue creating money as long as they can profitably make loans, since every loan they issue creates brand new bank deposits and income for the bank. It should be obvious that in every situation other than a banking crisis, banks are likely to increase the money supply, creating a permanent upward pressure on inflation.

In conclusion, inflation appears to be significantly less likely in a full-reserve banking system in which the Monetary Policy Committee has responsibility for increasing and decreasing the money supply in line with the needs of the economy. The greatest likelihood of inflation comes when commercial banks are able to increase the money supply through their lending decisions.

4. 'Full-reserve banking would end the process of maturity transformation'

A common misunderstanding is that full-reserve banking would end maturity transformation - the process by which short-term investments are 'transformed' into long-term loans, such as mortgages. But it is important to recognise that under full-reserve banking, there is no direct match between a saver and a lender: full-reserve banking is not peer-to-peer lending.

Under our proposal for full-reserve banking, as customers open Investment Accounts, the money is transferred to the bank's Investment Pool. When the Investment Pool is sufficiently 'full', the bank is able to make a loan to a borrower. At all times, there are multiple cashflows in and out of the Investment Pool:

Cashflows into the Investment Pool:

1. The monthly repayments (principal + interest) from multiple borrowers
2. New investment funds from customers of the bank
3. New investment funds made from the bank's own capital (which would come from the bank's

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Operational Account)

Cashflows out of the Investment Pool:

4. New mortgages and loans issued to borrowers
5. Payments of interest to Investment Account holders
6. Repayments in full of maturing Investment Accounts
7. Transfers of profits to the bank's Operational Account (in order to pay salaries etc.)

Maturing investment accounts may be repaid with the monthly repayments from existing borrowers, but they may also be paid with the funds from new Investment Accounts. While at first glance this may appear to be similar to Ponzi-financing (new investments paying off old investors), it is more accurate to see it as a new investor 'buying out' the previous investor's share of an income stream, with the income stream being the assets of the commercial bank.

Through this process, it is entirely possible for maturity transformation to take place. Throughout the life of a particular mortgage, some of the bank's Investment Account holders will want to reclaim their investment at the same time as other customers wish to open new Investment Accounts. Providing the bank manages its investments and cashflows well (and as outlined in Part 1, this is far easier under full-reserve banking than under fractional reserve banking), it is entirely possible to transform multiple short-term investments into multiple long-term mortgages.

In other words, maturity transformation under full-reserve banking operates in much the same way as maturity transformation under fractional reserve banking. The main difference is that under fractional reserve banking, the short-term finance can evaporate rapidly as customers withdraw their money on demand, whilst in full-reserve banking this process could only happen at a much slower rate, thanks to the maturity dates or notice periods that apply to Investment Accounts. Consequently, full-reserve banking allows much more robust maturity transformation than fractional reserve banking.

5. 'The Monetary Policy Committee would be unable to judge the correct level of money needed by the economy'

There is an argument that a committee such as the Monetary Policy Committee would find it impossible to correctly estimate the appropriate level of new money needed in the economy. This argument implies that the banking sector would be more effective in managing the money supply. However, on analysis it becomes apparent how unlikely it is that the fractional reserve banking system will generate the appropriate level of money for the economy:

- Every loan issued by a bank increases the money supply in the hands of the public;
- Banks have a commercial incentive to lend whenever they can find a credit-worthy borrower;
- Most bank staff are unaware that bank lending creates new money, and therefore do not understand the macro-economic impact of their lending decisions;
- Most bank staff are incentivised to maximise the amount of loans that they issue. They will receive a bonus or commission for any loan they issue, and get no reward if they do not issue a loan.

Consequently, under the fractional reserve banking system, the decision over how much money the economy requires is taken by thousands of loan officers who are incentivised to make only one decision: issue a loan and increase the money supply. This naturally leads to a constantly increasing money supply, regardless of the needs of the real economy.

Those individuals (bank staff) and companies (banks) with control over the money supply have no oversight of the whole economy. In contrast, the Monetary Policy Committee would have big-picture oversight of the economy, with the remit to consider the needs of the wider economy before making a decision on altering the money supply.

In addition, the MPC is the only institution with no conflict of interest and an alignment of incentives with the needs of the economy. The members of the MPC could be rewarded for achieving a target rate of low and steady inflation, and creating too much money would result in them losing this potential reward. In contrast, both banks and elected politicians would get a reward – in the short-term at least – by increasing the money supply excessively, even if to do so was against the best interests of the economy.

6. 'Full-reserve banking would force banks to leave the UK'

The full-reserve banking requirements would apply to any bank that deals in pound sterling and which therefore requires accounts at the Bank of England. In other words, any bank wishing to do business in pound sterling would need to operate under the full-reserve banking rules. Being registered or located abroad would not help the bank circumvent the changes.

In short, full-reserve banking is completely unlike changes such as bank levies or a 'Glass-Steagal'-type change – there is no way to circumvent it, as long as a bank wants access to the huge sterling lending market.

Appendices

The following appendices give further details on specific areas of the proposal:

- Appendix 1: How We Got Here - The 1844 Bank Charter Act
- Appendix 2: How Full-Reserve Banking Increases Stability Within Each Bank
- Appendix 3: Investment Account Guarantees
- Appendix 4: The Impact of Full-Reserve Banking on the Bank of England's Balance Sheet
- Appendix 5: Dealing with Cash Under Full-Reserve Banking

APPENDIX 1: How We Got Here – The 1844 Bank Charter Act

Prior to 1844, commercial banks were allowed to print their own pound sterling bank notes, while coins could only be created by the state. Over time, banks started to issue (print) and lend out so many bank notes that they caused significant inflation and destabilised the entire economy.

In response, the government of Robert Peel passed the 1844 Bank Charter Act, which made it illegal for anyone other than the Bank of England to print pound sterling bank notes. In theory, this should have returned control over the money supply of the nation back to the state.

Number Money (Bank Deposits)
However, the 1844 Bank Charter Act did not make it illegal for banks to create 'bank deposits' - the numbers in your bank account, and in the bank accounts of any citizen or company in the country. With the rise of the digital age, these bank deposits are now the primary means of payment, used in 99.91% of transactions.

The banks are able to create bank deposits through the accounting process that they use to make loans. Rather than taking money from a saver and lending it to a borrower (as per the common understanding of banking), they simply write new numbers into the bank account of a borrower - effectively creating new money. Their only constraint in this process is the need to have a small pool of central bank money at the Bank of England, but as more in-depth briefings can explain, in practice this does not act as a constraint upon the lending of banks.

Without seeing the process in action, it can be a little hard to believe. A comprehensive and fully referenced explanation of this money creation process is available from Positive Money but below are a few quotes 'straight from the horse's mouth' which confirm this amazing fact:

> "...by far the largest role in creating broad money is played by the banking sector... when banks make loans they create additional deposits for those that have borrowed the money."
> - Bank of England Quarterly Bulletin, 2007 Q3

> "Subject only but crucially to confidence in their soundness, banks extend credit by simply increasing the borrowing customer's current account, which can be paid away to wherever the borrower wants by the bank 'writing a cheque on itself'. That is, banks extend credit by creating money."
> - Paul Tucker, Deputy Governor of the Bank of England and member of the Monetary Policy Committee

> "... changes in the money stock primarily reflect developments in bank lending as new deposits are created."
> - Bank of England Quarterly Bulletin 2007 Q3, p378

> "...the banking sector plays such an important role in the creation of money. Changes in the terms for deposits will affect the demand for money, while changes in the terms for loans will affect the amount

[illegible]

of bank lending and hence money supply." - Bank of England Quarterly Bulletin 2007 Q3, p383

"The money-creating sector in the United Kingdom consists of resident banks (including the Bank of England) and building societies"
– Bank of England Quarterly Bulletin 2007 Q3, p405

By failing to update the 1844 Bank Charter Act to cover the creation of 'digital money' in the form of bank deposits, control over the nation's money supply has shifted from the state to the private banking sector. An illusion of control is given via the Bank of England's setting of interest rates, but as has been seen over the last decade, this is a very ineffective method of control.

APPENDIX 2: How Full-Reserve Banking Increases Stability Within Each Bank

Full-reserve banks would be significantly more stable than fractional reserve banks. Instability within fractional reserve banks comes from the fact that the majority of the bank's customers can demand repayment at any time from any accounts that do not have maturity dates or notice periods. This could result in the bank being required to pay back huge sums of money in a short period of time, making the bank effectively insolvent. The banks try to guard against this by keeping back reserves, but they continually walk a knife-edge between keeping reserves high enough to cover the maximum likely net withdrawals, and keeping them as low as possible in order to free money up for making further loans (to maximise profits).

The post-reform situation is much more stable. The stability arises from the fact that the funds a bank uses to make loans are now 'locked in' – customers can no longer demand them back whenever they choose.

As a result, the bank knows:

1. What it will need to repay to customers who have made investments, and when.
2. What it will receive from borrowers making repayments on their loans, and when.

Money withdrawn from Transaction Accounts does not affect the bank's solvency in any way, as the money is stored in full at the Bank of England, and therefore doesn't need to be 'found' from anywhere when it has to be repaid.

Since all the investment funds that will be used by the bank come from Investment Accounts, and every Investment Account has a defined repayment date (or minimum notice period), the amounts that the bank will need to repay on any one day will be statistically many times more predictable than under the current system.

For Investment Accounts with maturity dates, a bank will know the exact amount that must be repaid on any particular date, and will also know, from experience, what percentage of customers with maturing accounts will ask for the investment to be rolled over for another period (in other words, what percentage of accounts will not need to be repaid on the maturity date).

With regards to minimum notice periods, a bank will know the statistical likelihood of an account being redeemed within the next 'x' days, and so will be able to forecast the payments that will come due on any particular day for up to 6-12 months into the future. In addition, because a bank has, on its assets side of the balance sheet, a collection of contracts with specified monthly repayment dates and amounts, it knows almost exactly how much money it will receive on any particular date up to 6-12 months in the future

(allowing for a small degree of variation due to defaults and late payments).

Consequently, the bank's computer systems will be able to easily calculate how much money should be required on any particular day up to 12 months into the future. If it identifies any potential cashflow problems (such as a large number of Investment Accounts maturing in a short period of time and insufficient income from loan repayments to cover them all) the bank can rein in loan-making activity until it has built up a buffer to cover the upcoming shortfall. On the other hand, if the cashflow forecasts identify a period when repayments from existing borrowers are in excess of the amounts required to repay Investment Account holders, it can increase loan making activity to ensure that it does not end up with a swelling Investment Pool Account full of 'idle' funds.

This degree of forward planning and predictability is impossible within the current fractional reserve banking system.

It should be noted that there are still risks of a 'slow-motion bank run' with full-reserve banking. For instance, rumours of a bank's insolvency may cause all customers with minimum notice period Investment Accounts to serve their minimum notice period and withdraw their funds at the earliest opportunity. However, considering that all demand liabilities are now held off the balance sheet and are not backed by risky assets, the impact of this slow-motion bank run would be very manageable in contrast to a run on fractional reserve banks, and would be unlikely to pose any threat to the wider financial system, in contrast to a run (or 'silent run'[::]) on any fractional reserve bank.

APPENDIX 3: Investment Account Guarantees

Under the existing system, if a bank fails due to bad investments, a third party (the taxpayer) will reimburse the savers who had money invested with that bank.

This creates a few serious flaws or 'distortions' in the economic system:

1. It means that the banks can gamble with their customers' money in the knowledge that the government will step in to cover any serious losses. This creates 'moral hazard' and encourages the banks to take greater risks in their investments.

2. It means that one group stands to benefit if the bank is successful in its investments, while another group (taxpayers) stands to lose if the bank is unsuccessful. The government-backed guarantee on funds in any UK bank account means that bank account customers do not need to pay any attention to the activities of the bank that they choose to invest with. If customers bear at least some of the risk of the investment, it should encourage them to be more vocal in how the banks invest their money – maybe expressing concern that large sums of money go into risky proprietary trading, or requesting accounts where the money is ring-fenced for certain types of investment.

Our proposal contains a few simple rules that collectively 'fix' these fundamental problems in the current design of the banking system. Practically, it works as follows:

1. A bank has the option of offering Investment Account holders a guarantee that they will be repaid a

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minimum percentage of their original investment. For example, the bank may say that a particular Investment Account product guarantees to repay the investor at least 100%, or 80%, or 60%, of the amount originally invested.

2. A bank may also offer a guarantee on the rate of interest that will be paid on the Investment Account product, for example, guaranteeing to pay 2%, 4% or 5% interest.

A Worked Example:

Let's look at a worked example. Imagine that a bank wants to attract funds to fund conservative housing market loans to middle-income families. It charges an interest rate of 8% on the mortgages, and it knows that only a tiny percentage of the loans that it makes to these middle-income families will actually default. Consequently, allowing for defaults, the normal case rate-of-return will probably be around 7.8% overall (over all the funds invested in this type of mortgage), and in the very worst case scenario, with a high rate of defaults, the rate of return might drop to 2% (with the losses of the defaults being cancelled out by the interest paid by those who don't default).

Because the bank knows that, in the very worst case scenario it is still likely to make a return of 2%, then it knows that investing in this market is effectively 'risk free', in that it is highly unlikely to lose more than the bank originally invests.

Consequently, in order to attract more funds into its Investment Accounts in order to fund more lending in this particular market (i.e. mortgages for middle-income families), it may offer to guarantee the original sum invested, and guarantee a rate of return of 2%. This makes this a 'risk-free' investment for the Investment Account holders, and provides a good investment vehicle for savers/investors who don't want to take much risk and don't need a very high return.

In this situation, the bank holds all the risk of the investment. If the investments were made badly and the bank actually lost 10% of everything it invested, it would still need to repay the entire original sum to each Investment Account holders, plus 2% interest. It would then need to cover its losses with its own profits – in other words, bad investments by the banks might wipe out their profits for the year (or the next few years, if they really miscalculated their investments).

Let's look at another scenario. Imagine that the bank wants to raise funds for investing in a risky, emerging market. The possible return here is much higher, but the risk of loss is much greater too. The bank wants to limit its own risk by sharing some of the risk with customers. The potential interest rate that it will offer if its investments are successful is 8%. However, if it is unsuccessful, and the market turns out to be a bubble about to burst, it could end up losing up to 50% of the funds invested.

In this case, the bank may opt to offer no guarantee on the rate of return, and to offer a guarantee of 60% of the principal invested. This would attract funds but would force the investors to share the risk with the bank. If the investments failed badly, the investors would lose 40% of the principal, and the bank would need to make up the other 10% of the losses from its own profits.

In every case, each investor would have been made aware of the guarantees, and therefore made their own decision to invest in a particular Investment Account, knowing the risk to them and the potential upside. At no point will the risk or the losses fall back on the taxpayers.

These two 'guarantees' set up the conditions in which competition between the banks will lead them to offer a full range of products for every type of investor. Investors who want a high rate of return will need to take on some of the risk themselves, and investors who are happy with a low rate of return will be able to invest

effectively risk-free.

These Guarantees Prevent the Banks From Passing On All the Risk
These two 'guarantees' make it much more difficult for banks to pass all the risk onto the savers/investors. Since Investment Accounts are not guaranteed by the state or taxpayer, it would be possible for the banks to simply pass the risk onto the saver, by simply saying that if the value of the underlying investments falls, then the value of the Investment Account will also fall. This may seem fair, but it creates another 'one way bet' for the bank – if they make good investments, they get a cut of the gains, but if they make bad investments, the savers/investors take the full loss. This one-sided incentive structure would likely lead to risky investing on the part of the banks. Allowing the banks to offer these two guarantees ensures that banks must shoulder part of the risks of an investment.

No Government Guarantee on Investment Accounts
The Treasury and government do not back the guarantees made by the banks. If a bank went bankrupt, Investment Account holders would become creditors of the bank and would have to wait for normal liquidation procedures to take place to see if they will get back part of their investment. While this is likely to be unpopular with savers who have, to date, been able to save without taking any risk at all (thanks to the taxpayer-funded guarantee) there is no morally or economically justifiable reason why savers/investors should have their investments effectively insured by UK taxpayers.

The Bank of England May Forbid Specific Guarantees
To prevent banks offering unrealistic investment account guarantees, the Bank of England, in its new supervisory role, should be able to forbid an institution from offering a particular rate of return on a particular Investment Account product.

We know from history that professionals in the financial sector are not very good at identifying bubbles while they are in one. When a bubble takes off in say, hotel construction, a bank has an incentive to offer a better guarantee than all its competitors in a particular Investment Account product in order to attract the maximum amount of funds for investment in the bubble. The guarantee they offer may be one that is based on the 'best case scenario'.

If the bank tries to offer an Investment Account product with a guaranteed rate of return of 8%, the Bank of England may judge that it is highly likely that the investments themselves will not generate a return of 8%, and therefore the bank will end up with a shortfall, which will increase the likelihood of the bank going bankrupt or appealing to the Bank of England for emergency funding. In short, offering a guarantee (on either the rate of return or the principal) which bears no relation to the real risks of the investment makes it more likely that the bank will run into financial difficulties, and therefore the Bank of England should be allowed to disallow any guarantee in order to maintain the stability of the banking system.

APPENDIX 4: Impact on the Bank of England's Balance Sheet

Under fractional reserve banking, central bank money and bank notes must be 'sold' to commercial banks. Commercial banks 'pay' by exchanging bonds (usually government debt) for the central bank money or bank notes. This means that for every pound of central bank money or notes, the Bank of England will hold a (roughly) corresponding asset in the form of government debt. It currently holds around £250 billion of government debt across both its balance sheets. It is unlikely that the quantity of central bank money and bank notes will ever decrease significantly, implying that the Bank of England will end up holding an ever-greater quantity of government debt. This is counter-productive: it reduces the supply of safe assets (government bonds) to the investment sector, and by artificially inflating the demand for government debt it

reduces the pressure for governments to be fiscally responsible.

Under our proposal for full-reserve banking, money is created via a different mechanism. As outlined under 'Step 2: The New Role of the Monetary Policy Committee', the Bank of England would authorise the creation of new money, which would be then credited to a central government account held at the Bank of England. This money would then be distributed via government spending or tax rebates. The newly-created money would not be a liability of the Bank of England at any point but rather an asset of the state (on the balance sheet) at the moment of creation, and an effective liability of the public, although this liability would be a general liability rather than a contracted liability between two parties.

The accounts held by banks and the government at the Bank of England are held off balance sheet, and are not considered liabilities of the Bank of England (in the same way that a Transaction Accounts are not recorded as liabilities of the commercial bank). The money in those accounts is owned entirely by the holder of the account.

Consequently, under our proposal for full-reserve banking, central bank money is a unit of account and medium of exchange, but is not a liability of the central bank. Instead, it is government money issued by the central bank in its function as the Issue Department of the Bank of England. There is consequently no need for the Bank of England to accumulate assets to match the quantity of central bank money. This removes the illogical situation where state-issued currency is 'backed' with government debt, when government debt is essentially 'backed' by the ability of the government to tax the state-issued currency back from the public. In other words, state-issued currency is backed by government debt, which is (indirectly) backed by state-issued currency.

Our proposal for full-reserve banking would therefore treat state-issued currency as an asset of the state (or Central Bank) and an effective liability of the public to be retired when taxes are paid. This simply follows the widely accepted understanding that it is the state that determines the value of money through accepting it as tax, as stated by Knapp (1924), Keynes (1930) and Hyman Minsky (1986: 231):

> "In an economy where government debt is a major asset on the books of the deposit-issuing banks, the fact that taxes need to be paid gives value to the money of the economy… [T]he need to pay taxes means that people work and produce in order to get that in which taxes can be paid."

To clarify:

- Transaction Accounts are held separately from the balance sheet of the commercial banks, and are not recorded as liabilities of the commercial bank; they are merely held in custody.
- The Customer Funds Accounts (which hold the aggregate funds of a commercial bank's customers' Transaction Accounts) are held OFF the balance sheet of the Bank of England and are NOT recorded as liabilities of the Bank of England
- The commercial banks' Operational Accounts and Investment Pools are held OFF the balance sheet and are NOT recorded as liabilities of the Bank of England. However, they are held ON the balance sheets of commercial banks and are recorded as assets of the commercial banks
- Loans from the Bank of England to a commercial bank will be recorded as an asset of the Bank of England and a liability of the commercial bank
- Loans from a bank to a customer will be recorded as assets of the commercial bank, as happens currently

In effect, the Customer Funds Accounts, Investment Pools, Operational Accounts and the government's bank account at the Bank of England are just pools (or digital safe deposit boxes) where state-issued currency (physical and digital) can be kept.

This means that the shift to full-reserve banking, in which demand liabilities of the banks would be converted into central bank money, would not require an increase in the Bank of England's liabilities.

APPENDIX 5: Dealing With Cash

There are two procedures needed for dealing with physical money (notes and coin) under full-reserve banking:

1. A commercial bank buying cash from the Bank of England:

The commercial bank would 'buy' physical cash by exchanging it for digital money held in the commercial bank's Operational Account at the Bank of England. The bank would take physical delivery of the cash, and the Bank of England would decrease the value of the bank's Operational Account by a corresponding amount.

The amount of cash circulating outside the Bank of England would increase, and the amount of digital money owned by commercial banks would decrease by the same amount.

In effect, digital money would be converted into physical money without affecting the overall money supply at all. This ensures that seasonal changes in the demand for cash (such as the Christmas season) do not increase the total money supply, and therefore do not cancel out or amplify the activities of the Monetary Policy Committee.

2. A bank customer taking cash out (via an ATM or bank teller):
Initially, the commercial bank would own the physical cash in its ATM, tills and vaults. This cash would be recorded as an asset on the bank's balance sheet.

When the customer takes £10 out of their account via an ATM (for example) then:

- The customer's Transaction Account balance will decrease by £10
- Simultaneously, the commercial bank's aggregate Customer Funds Account balance will decrease by £10 and the bank's Operational Account will increase by £10 (£10 will have been transferred from their Customer Funds Account to their operational account)
- The bank's cash holdings will fall by £10
- The customer will have the physical £10 note

In effect, the bank has 'sold' the customer a £10 note in exchange for £10 of the digital money in their Transaction Account. The £10 of digital money that belonged to the customer now belongs to the bank.

The bank's assets are unchanged (cash holdings have decreased but the Operational Account has increased by the same amount), and the bank's liabilities are unchanged (because Transaction Accounts are not recorded as a liability of the bank).

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