

FULL RESERVE BANKING



Ralph S. Musgrave

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ISBN: 978-605-2132-86-9 (e-Book)

KSP Books 2018

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Introduction

Under the existing bank system, it is not just central banks and governments which create money: commercial banks do so as well. Many leading economists, including at least five Nobel laureate economists, have had doubts as to whether commercial banks should be allowed to do that. Indeed one of those Nobel laureates, Maurice Allais, described money creation by commercial banks as counterfeiting.

“Full reserve” and “100% reserve” are names given to bank systems where commercial banks are not allowed to create or “print” money, or at least where that money creation is curtailed. Other names include “Sovereign Money” and “Vollgeld”.

The arguments for and against full reserve are complicated. One of the best arguments for full reserve, put by Joseph Huber among others, is that letting commercial banks create money amounts to a subsidy of those banks: clearly a money lender (and that is what commercial banks are) which can simply create the money it lends out is in a better position than a money lender who has to obtain money the same way every household and non-bank firm obtains money: earning it or borrowing it.

Put another way, there is no obvious reason why money lenders should enjoy the luxury of being able to print money, while garages, restaurants, etc cannot. The only reason why commercial banks can create money so easily is that money creation merges seamlessly with what they do anyway, namely grant loans.

Another important argument for full reserve (set out in detail in Ch 5 below) is that banks, in that they accept deposits and lend on depositors' money are essentially no different other investment intermediaries like stockbrokers, unit trusts, mutual funds, private pension schemes etc. But for some strange reason, those who place money with banks enjoy taxpayer backed deposit insurance, while those who deposit money at other investment intermediaries do not. That clearly amounts to preferential treatment for banks, a form of preferential treatment which should be abolished.

The chapters below consist of a series of working papers written by the author and related in some way to full reserve. Those working papers were published by the Munich Personal RePEc Archive between 2011 and 2018 inclusive. In contrast, the author's most recent and full treatment of full reserve is in a KSP book entitled "The solution is full reserve / 100% reserve banking." That is the 3rd edition of that book.

1. Sir John Vickers backs maturity transformation and opposes full reserve banking

Sir John Vickers (Chairman of the UK's Independent Commission on Banking, 2011), published a discussion paper entitled "Some Economics of Banking Reform" (Vickers, 2012). This is my contribution to the "discussion", that is, I make some criticisms of the paper. The Independent Commission on Banking is referred to as the "Vickers commission" below, while the word "Vickers" (without an accompanying date) refers to his 2012 discussion paper.

Two central points in Vickers's paper are addressed here. First Vickers defends the existing banking system partially on the grounds that it engages in "borrow short and lend long", i.e. "maturity transformation" (MT), which Vickers claims brings a large benefit. Vickers makes the standard claim for MT, namely that depositors gain the additional interest that comes from having their money invested in long term loans or investments while still retaining quick access to their money, i.e. liquidity. One flaw in that argument is that MT involves risk, a risk which went wrong around five years ago and would have crashed the world economy far more seriously than it actually did, had banks not been rescued with trillions of dollars of public money.

A second flaw in MT is that if it is curtailed, the resulting reduced quantity of money / liquidity can be made good at zero real cost by having central banks issue more money. And that involves no risk of the bank runs, credit crunches and so on that are inherent to MT. Thus the case for MT is badly flawed.

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The second central point addressed below, in Part II, is Vickers's claim that full reserve banking or "narrow banking" as he calls it, is defective.

The paragraphs below are not supposed to be a REVIEW of Vickers's paper: to repeat, it is just the above two points made in the paper which are considered here.

That is, there are various parts of Vickers's paper which I agree with, or which I am not qualified to judge.

Maturity Transformation

As pointed out in the abstract above, Vickers defends an aspect of the existing banking system, namely that it engages in MT. Whether the phrase "existing banking system" is taken to mean the existing system enhanced by Vickers's ring fence proposals or not does not greatly matter because it is MT *as such* which is discussed here.

On p.5 Vickers advocates MT. He says:

"banks engage in maturity transformation insofar as they 'borrow short but lend long'. This brings huge efficiency benefits... It is efficient because it reconciles the freedom for depositors to meet their short-term liquidity needs with the financing of long-term lending both to households (e.g. residential mortgages) and for corporate investment."

To rephrase that quote, when people deposit money at commercial banks and banks lend on that money to mortgagors and so on, depositors can have instant access to their money (i.e. liquidity of a sort) while they also share in the benefits of the relatively high interest rates that are earned from making long term loans. (Incidentally, any readers who think that banks simply lend out money they've created out of thin air, and do not in any sense act as intermediaries between lenders and borrowers, please see this article. Commercial banks actually perform BOTH activities: create fresh money AND ACT as intermediaries.)

However, loans can be funded not entirely from deposits but also, to a greater or lesser degree, via shareholders. For example in contrast to the 3% or so capital ratio that was common before the recent crisis, Martin Wolf advocates a 25% or so capital ratio (Wolf, 2012). And under Laurence Kotlikoff's version of full reserve banking (FR), loans are funded ENTIRELY by shareholders (effectively a 100% ratio). Or to be more accurate, under Kotlikoff's version of FR, loans are funded by people who buy into mutual funds ("unit trusts" in the UK), but those people amount to shareholders. (Klein, 2013) gives a good summary of Kotlikoff's version of FR).

In the latter sort of scenarios there is clearly less MT. That is, there is a loss of liquidity, i.e. the money supply would contract. (For the exact reasons, see endnote 3). But that would be no problem because it would cost nothing in real terms to supply the economy with extra money: the central bank could just create new base money and spend it into the economy, and/or cut taxes. As Milton Friedman (1960, Ch3) put it in reference to base money, *“It need cost society essentially nothing in real resources to provide the individual with the current services of an additional dollar in cash balances.”*

Incidentally, even if there were no central banks, and savers who funded loans had to lock up their money for extended periods, COMMERCIAL BANKS would actually be able to make good the resulting loss of liquidity. (For more on that, see endnote 1 below).

To summarise this section, intermediaries that connect savers and borrowers make sense in that lending requires various skills, including legal skills. However, making the relevant savers’ investment highly liquid (aka MT) is totally unnecessary, because central banks (at zero cost) can issue whatever amount of liquidity / cash is needed to keep the economy operating at capacity or full employment (aka NAIRU).

Having depositors fund lenders means bank fragility

Moreover, there is a serious problem involved in having commercial banks (or more generally “lending entities”) funded by depositors: depositors can withdraw their money on demand or at short notice, and if depositors withdraw too much, the relevant bank is insolvent.

For example, if a bank is funded about 3% by capital and about 97% by deposits or other debt (which was common prior to the recent crisis), the value of the loans made by a bank only has to fall by slightly more than 3% (e.g. when it is discovered that incompetent loans have been made), and the bank is technically insolvent. And if faith in the bank is lost, a bank run starts, leading to ACTUALLY insolvency.

That system is defective, to put it mildly. And it’s not just the recent crisis that demonstrated that the existing system is defective. According to Robert Peston (2012, Ch1) various large UK banks were in dire straits in the 1970s, 80s and 90s. There has to be a better way to run a railroad.

And as distinct from depositors, funding loans via bonds and loans from the wholesale money market poses an equally serious problem (as Northern Rock discovered). Loans from the wholesale market amount to little more than very big depositors.

As to bonds, they have in common with deposits the fact that they represent a liability which (on maturity) is fixed in value (inflation apart), though repayment i.e. “maturity” may not be for several years. (That is as distinct from shares which have no fixed value).

Commercial banks cannot give us liquidity without fragility

In short, there is a big problem with commercial bank provided MT or liquidity, which is that that method of liquidity or money creation gives us fragile banks and worse: bank runs, and credit crunches as a side effect.

Indeed, the latter point was made by Douglas Diamond (1999). In his abstract and in reference to the liquidity producing characteristics of commercial banks he says, “*We show the bank has to have a fragile capital structure, subject to bank runs, in order to perform these functions.*” And Vickers himself says “*Banking, including retail banking, is inherently risky.*”

To summarise so far, the “huge efficiency benefits” of MT to which Vickers referred in the above quote are beginning to look unimpressive.

Decent capital ratios and government guarantees

Of course the latter fragility can be reduced by requiring banks to have decent capital ratios and/or having government stand behind private banks. But the problem with having government stand behind private banks (e.g. offer the “lender of last resort” facility or deposit guarantees) is that in practice that usually amounts to a subsidy of private banks. IN THEORY, those types of support for banks need not amount to a subsidy, but in practice, and because of political pressures, they normally do amount to subsidies. (Politicians always prefer quickly papering over cracks to implementing fundamental reforms). And as it explains in the introductory economics text books, subsidies misallocate resources and reduce GDP (unless there are very good social reasons for subsidies, as is the case for example with children’s education). Or as the Vickers commission final report put it “*The risks inevitably associated with banking have to sit somewhere, and it should not be with taxpayers*”.

But lender of last resort (LOLR), deposit guarantees, etc do not really influence the argument here and for the following reasons. If those types of support for banks are in fact subsidies, they misallocate resources and are unjustified. But if they are not subsidies, then they are compatible with the arguments put here, namely that banks should be treated like any other business: that is,

no special favours should be extended to banks by governments (i.e. taxpayers).

A further weakness in LOLR is thus. Walter Bagehot is often said to have given his blessing to it. Indeed Vickers cites Bagehot in support of LOLR. In fact Walter Bagehot did not approve of LOLR. In the last chapter of his book “Lombard Street” he said he did not intend opposing it because he thought it was so entrenched that it would be near impossible to remove.

Deposit insurance is flawed

As to deposit insurance, clearly if that is funded by taxpayers, it amounts (to repeat) to a subsidy of banking, which does not make economic sense. But deposit insurance does not actually make much sense even when it is funded by depositors and for the following reasons. (Incidentally it might seem that deposit insurance of the self-funding FDIC type in the US is paid for by banks, not depositors. In fact any payment made by a corporation, if it calculates its costs correctly will be debited to the people or products that occasion that payment.)

Suppose a bank is funded entirely or almost entirely by depositors (to take the extreme case), and suppose the risk of their being wiped out is 1%pa. Obviously the appropriate insurance premium will be 1%pa of total deposits. But suppose instead, all those depositors had been shareholders. The chance of their being wiped out would be exactly the same (assuming the bank funds the same set of mortgages and other loans). Thus the return that depositors and shareholders would want in respect of that risk will be EXACTLY THE SAME. Ergo assuming that depositors insure themselves rather than being insured by taxpayers, banks are not funded any more cheaply when funded by entirely by depositors as distinct from entirely by shareholders.

The only difference between those two scenarios is as follows. When depositors do the funding, and assets of the lending entity fall in value far enough relative to the value of liabilities (say assets fall to X% of liabilities) the entity is declared insolvent and depositors get about X pence in the pound. In contrast, when shareholders do the funding and assets fall to X% of liabilities (if one can call shares a liability), all that happens is that the value of the shares fall to about X pence in the pound.

So what is achieved by having lending entities funded by depositors? All that is achieved is that the entity may go insolvent when it doesn't need to: not much of an achievement.

And indeed under Kotlikoff's version of FR, incompetence by lending entities does not result in insolvency. (Lehmans was a Musgrave, (2018). *Full Reserve Banking*

classic example: its liabilities never actually exceeded its assets – that is, it ran short of cash or encashable assets, not assets as such.)

As George Selgin put it in his book on banking (Selgin, 1988) “For a balance sheet without debt liabilities, insolvency is ruled out...”. (Incidentally, that was an aside made by Selgin: his book did not actually advocate FR).

Incidentally there are other versions of FR, e.g. Milton Friedman’s, Positive Money’s and so on. But Kotlikoff’s is my preferred version, so I’ll stick with that. There are a few details on the different versions of FR in Endnote 2 below.

Funding partly by deposits and partly by shares does not cut bank funding cost

Of course it is possible to have a bank or other lending entity funded PARTIALLY by depositors and partially by shareholders, and indeed that is a more usual arrangement. And in that scenario, and given serious problems, shareholders are wiped out before depositors. But that still has no effect on the TOTAL RISKS involved in running bank, as Messers Modigliani and Miller explained. There is therefore no effect on the total charge made by shareholders, depositors and any other bank funders for funding the bank.

The Modigliani Miller theory (MM) has been criticised of course. But the criticisms are feeble. See this paper of mine, section 1.4 under the heading “Flawed Criticisms of Modigliani Miller.” Also Vickers devotes several paragraphs to MM, and suggests a few possible weaknesses in the theory, but does not seriously question it.

To summarise so far, the liquidity produced by banks funded by depositors brings fragility with it (i.e. bank runs, and credit crunches). But that liquidity is useless because liquidity / money can be produced by central banks at zero cost. Moreover, funding lending entities via depositors does not result in banks being funded any more cheaply than when they are funded by shareholders. Ergo having lending funded by depositors is pointless: it involves risk and brings no benefits.

Thus the best set up for the lending industry is one in which lending is funded just by shares, while money is produced only by central banks, and that is exactly what full reserve banking (a la Kotlikoff) consists of. (Incidentally, while as just pointed out there are different versions of FR, having just central banks issue money is a characteristic they all have in common)

As to the central bank which issues money, that cannot fail either.

The price paid for bank capital does not equal its real cost

Having said that there is no difference cost-wise between funding a bank via shares rather than deposits, bonds, etc, that is not quite how it works out in the real world, but that does not alter any of the above conclusions.

For example the tax treatment of capital and deposits and other types of debt is different in the real world. But the answer to that is that tax is an ENTIRELY ARTIFICIAL imposition and should thus be ignored for the purposes of working out REAL COSTS AND BENEFITS, which are the important criteria here.

Second, the cost of bank capital will currently doubtless be higher than the cost of debt because bank shareholders in the US have recently had to pay around \$100bn in fines for sundry crimes committed by banks and for which shareholders were not responsible. Yes that's billion, not million. (The people ACTUALLY RESPONSIBLE, i.e. sundry bank executives have got off Scott free.) But that again is an entirely artificial imposition: it does not reflect REAL costs and benefits.

As to the UK and other countries, similarly large fines have been born by bank shareholders.

Third, as capital ratios are raised, implicit subsidies are inevitably withdrawn. That is, and ignoring the fact that as capital ratios are raised the return demanded by shareholders declines because there are more shoulders to carry the risk, shareholders will want a bigger return when investing in a bank with a decent capital ratio as opposed to one where the ratio is ridiculously low and everyone knows that the risk is really being covered by taxpayers. But again, implicit subsidies are ENTIRELY ARTIFICIAL: they do not represent REAL COSTS OR BENEFITS.

Conclusion and summary of Part I.

Maturity transformation achieves nothing. First, while it produces liquidity i.e. a form of money, it can only do so while also giving us bank fragility. Moreover, the liquidity or money issuing function can be performed by central banks at zero real cost.

Second, having lending entities funded by depositors and bondholders does not result in those entities being funded at any lower cost than where they are funded just by shareholders. Third, in the event of problems and where lending entities are funded just by shareholders, there is no need to close down lending entities. And having just shareholders fund lending entities is what Kotlikoff's version of full reserve banking amounts to.

And finally, exactly that policy is being imposed on money market mutual funds in the US at the time of writing. That is, funds which invest in anything other than government securities and base money will not be allowed to promise not to break the buck. (See Weiner (2014) and SEC (2014)). In short, FR is being imposed on money market mutual funds in the US, which very much calls into question any claims that FR is not workable or practical.

Narrow / full reserve banking

The above paragraphs explained the flaws in the existing banking system and the flaws in MT and suggested that FR is a better system. Vickers's objections to FR are now considered.

Vickers actually uses the phrase “narrow banking” rather than “full reserve banking”, but his definition of narrow banking (his p.15) amounts to the same thing as for example Werner's “full reserve banking” (Werner, 2011). It also comes to the same thing as Milton Friedman's “100% reserve” banking (Friedman, 1960, Ch3 and 1965), and Laurence Kotlikoff's “limited purpose banking”. I'll use the phrase “full reserve” (FR).

Vickers's definition of FR (his “narrow banking”) and his criticisms of it are as follows.

“So-called ‘narrow banking’ is the idea that the basic services of deposit-taking and payment systems should be separated from other, inherently risky, banking activities by a requirement that deposits are fully backed by safe liquid assets. This idea faces several problems. First, as the crisis has underlined, even government bonds are not necessarily safe liquid assets. Second, despite large government debts, there might not be enough government bonds to back retail deposits, especially of short- to medium-term maturity. Third, narrow banking could lead to a very inefficient misallocation of resources. Natural holders of government bonds such as pension funds would find them in short supply, while credit in the economy was deprived of a prime funding source – deposits. Narrow banking would also lose the natural synergy that exists between deposit-taking and the provision of overdraft facilities. Fourth, deposit-taking and payments systems are not the only banking services for which continuous provision is essential; the same is true of some credit supply, which would happen outside the narrow bank. So narrow banking, despite entailing large economic costs, would not address a major part of the problem.”

Safety of government debt

I'll take those points in turn. The first point (to repeat) was:

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“First, as the crisis has underlined, even government bonds are not necessarily safe liquid assets.”

The answer to that is as follows.

There have of course been numerous governments throughout history which have defaulted on their debts. But if you live in that sort of country then obviously it is not wise to put your life savings into government bonds: better to keep your savings under the mattress or in the form of gold or a more trustworthy currency.

However, the “ring fencing” system which the Vickers commission advocated was based on the assumption that UK citizens are not living in some sort of Greece or Zimbabwe: it was based on the assumption that the UK government CAN BE TRUSTED. So Vickers cannot claim that government might be IRRESPONSIBLE when it comes to FR: that is not a fair comparison between the existing banking system (enhanced or not by Vickers’s ring fence proposals) and FR.

Not enough government debt?

Vicker’s next criticism in the above passage was thus.

“Second, despite large government debts, there might not be enough government bonds to back retail deposits, especially of short to medium-term maturity.”

The answer to that is that the above mentioned advocates of FR (Werner, Kotlikoff, etc) do not basically argue that safe accounts under FR should be backed by government debt. They advocated that it should be backed by base money. Or put another way, they advocated that where people want total safety (or something as near total safety as is possible in this world) the relevant money should be lodged at the central bank or be backed by base money.

However, government debt, short term debt in particular is very similar in nature to base money. That is, short term government debt is simply a promise by government to pay the holder of the debt some base money in the near future. And Milton Friedman (1960, Ch3) and other advocates of FR have indeed argued that SOME of the money which people want to be totally safe should be put into short term government debt. But if there is not enough (or indeed ANY) of such debt, that is not a big problem for FR because, to repeat, most advocates of FR argue that money in the safe half of the banking industry should be backed by base money, with backing in the form of government debt being an optional extra.

Another weakness in Vickers’s claim that shortage of government debt / bonds is a problem is that it is not entirely clear that government borrowing makes any sense at all. Certainly

Milton Friedman argued for the abolition of government debt (Friedman, 1948), see para starting “Under the proposal..”). Mosler (2010) argued likewise (see his second last paragraph). And Kellerman (2006) also questioned the logic of government debt.

So the “shortage” of government debt / bonds which Vickers claims to be a potential problem for FR, it not a problem at all. Indeed FR could function perfectly well where there is no government debt at all.

Of course that scenario would mean that those wanting their money lodged in a totally safe manner would get no interest (assuming government does not pay interest on reserves / base money). But my answer to that is “tough luck”. In particular, there is no obligation on one set of people to provide a form of saving that pays interest just because some other set of people want same. Moreover, people with large amounts of cash to spare are the better off, while it’s the average taxpayer who effectively pays the interest. Thus the mere fact of paying interest on reserves tends to increase inequalities. And finally it is arguably a bit of a cheek to demand total safety AND INTEREST. Reason is that interest can only be earned by lending out or investing money, and lending or investing money is never an entirely safe activity.

Put another way, if any given set of people want a profitable form of investment, and none is available, then it’s up to that set of people to create their own form of profit yielding investment: perhaps building houses to let.

Not enough base money?

Also, in connection with Vickers’s above point about there possibly not being “enough government bonds” to meet demand, that point could be extended to base money. That is, since base money and short term government debt are so similar, those of a “Vickers” persuasion might argue that by the same token, a shortage of base money might arise.

In fact it wouldn’t because given an increased demand for base money, the state would just have to create about the quantity demanded. Put another way, if the private sector won’t spend at a rate that brings full employment unless it is supplied with some given quantity of base money / government debt, then government just has to supply that base money / government debt if government wants to bring about full employment.

The latter point is nicely illustrated in Japan. The Japanese have a high propensity to save, or to be more accurate to save government bonds and/or base money. The result is that the Japanese government IS FORCED to issue a relatively large

amount of debt. (Japanese government debt stands at over 200% of GDP).

But that is not to suggest that the supply of base money will EXACTLY equal demand on an hour by hour basis. However, any significant disparities between supply and demand can always be dealt with by manipulating interest rates, including having interest rates at a small negative level when appropriate. Also banks can maintain THEIR OWN stock of reserves / base money, and allocate some of that to customers when customers demand same.

Incidentally, the idea that the state is forced to supply whatever amount of debt and/or base money the private sector wants is widely accepted in Modern Monetary Theory circles.

To summarise, Vickers's fears about there not being enough government bonds are unfounded and for the following reasons. 1, there is no obligation on the state or any set of individuals to supply interest yielding bonds in the quantity wanted by savers.

2, in contrast, the state IS FORCED to supply whatever amount of base money the private sector (pension funds included) wants, but that "supply" would happen more or less automatically under any sort of well run government.

Allocation of resources

Vickers's third point in the above passage is thus.

"Third, narrow banking could lead to a very inefficient misallocation of resources. Natural holders of government bonds such as pension funds would find them in short supply, while credit in the economy was deprived of a prime funding source – deposits. Narrow banking would also lose the natural synergy that exists between deposit-taking and the provision of overdraft facilities."

As readers will doubtless notice, that point is a bit of a repetition of the second point dealt with above. But never mind: there is actually another point that can be made against Vickers's "shortage" claim and as follows.

Why does a shortage of government debt mean a "very inefficient misallocation of resources"? If demand for stock exchange shares exceeds supply, no one complains about a "misallocation of resources". All that happens is that the normal laws of supply and demand kick in and the Dow or FTSE rises. Likewise, if there is increased demand for government debt, then its price rises and interest rates fall. As to why falling interest rates should be a big problem, Vickers does not tell us.

Moreover, there is yet another option for pension funds experiencing a shortage of government debt, and that is not to invest at all: they can always move towards an "investment free" Musgrave, (2018). *Full Reserve Banking*

system, that is a pay as you go system. The biggest pension system in the UK, the state pension system, is pay as you go, as are a proportion of private pension systems.

Deposits are a source of credit?

Vickers's next claim in his above third point is that separating deposit accepting from lending means the economy is deprived of a source of credit. That's the passage which runs

“credit in the economy was deprived of a prime funding source – deposits.”

What actually happens on converting to FR is that depositors have a choice. Either they can have their money lodged in a totally safe manner, in which case it is not loaned on, i.e. it is not used as a “funding source” (except perhaps being loaned to government). Alternatively, they can have some or all their money loaned on, i.e. used as a “funding source” or source of “credit”, but THEY THEMSELVES carry the risk if incompetent loans are made instead of taxpayers carrying the risk.

Now it is hard to see what is wrong with that especially since the Vickers commission and other regulators (to repeat) disapproved of subsidies for the private banking industry, and quite right. Subsidies misallocate resources, as explained in the economics text books, and result in reduced GDP.

Plus under FR there is no need for savers to take any significant risks in order to earn interest. That is, under FR savers have A CHOICE as to what to put their money into. If they want to put it into conservative mortgages (i.e. mortgages where mortgagors have a minimum 20% or so equity stake) they can. The chance of losing money on that sort of investment is vanishingly small.

To summarise, converting to FR does not, as claimed by Vickers result in borrowers being denied a “source of funding”. What happens is that they are funded, but on a commercial basis, rather than a subsidised basis.

Obviously that would result in a finite rise in interest rates (and a decline in total debts). But interest paid by mortgagors in the UK in the 1980s was up to THREE TIMES what they pay nowadays. That did not result in a widespread homelessness or an inability to buy houses. Plus economic growth was far better in the 1980s than during the last five years during which we have enjoyed the dubious benefits of very low interest rates.

Of course a SUDDEN rise in interest rates is best avoided, but a significant and SLOW RISE would do no harm.

Another point which weakens Vickers's claim about lenders being starved of funds is that he claimed a few sentences earlier

that pension funds under FR would be SHORT OF ways of investing their funds.

Should deposits fund loans?

The next phrase in Vickers's above third point is thus.

“Narrow banking would also lose the natural synergy that exists between deposit-taking and the provision of overdraft facilities.”

That phrase, again, rather repeats a point already made by Vickers when he said “credit in the economy was deprived of a prime funding source – deposits” (a sentence dealt with above). However there is an additional point to be made in connection with those two sentences, as follows.

A problem with that claim is that it begs one of the BASIC QUESTIONS addressed by and solved by FR, which is thus.

Using deposits to fund loans means by definition that banks have liabilities that are FIXED IN VALUE and assets that can fall in value (when incompetent loans are made). And that is asking for trouble: indeed the world experienced several trillion dollars of “trouble” during the last five years. That is trillions of dollars of public money had to be used to deal with the consequences of the above risks involve in having deposits (and bonds) fund loans. In other words it is precisely the fact of funding loans via deposits rather than via shares that gives us bank “fragility”, to use Douglas Diamond's phraseology.

FR solves that problem by having bank SHAREHOLDERS fund loans rather than depositors or bond holders.

Let's leave the last word on that to the economics Nobel Laureate, James Tobin: “The linking of deposit money and commercial banking is an accident of history...”

4. Continuous provision of loans

Vickers fourth criticism of FR is thus.

“Fourth, deposit-taking and payments systems are not the only banking services for which continuous provision is essential; the same is true of some credit supply, which would happen outside the narrow bank. So narrow banking, despite entailing large economic costs, would not address a major part of the problem.”

The first answer to that is the only reason the EXISTING BANKING SYSTEM managed to “continuously provide credit” over the last five years or so was thanks to trillions of dollars of assistance in the form of public money.

In contrast, under FR, the half of the banking industry that lends just CANNOT go insolvent (if it is funded entirely by shareholders).

Nevertheless, it is legitimate to ask what would happen under FR in the scenario that played out around five years ago, that is where banks suddenly found their loans / assets were worth much less than book value.

Well the answer is, first, that on finding that bank or lending entity's assets are worth say X% less than book value, the price of those banks' shares would drop to about X% of their initial value. Or in the case of Kotlikoff's system, the value of stakes in relevant mutual funds would drop to X% of initial price.

Second, banks / lending entities would realise their lending activities had been over-optimistic, thus they'd cut down on lending (in exactly the same way as any business contracts its operations when it realises it has over-estimated what it can sell). But there'd be absolutely no reason for banks to cease lending altogether. That is, as loans were repaid, they'd tend to use that money to lend to obviously credit worthy customers. Indeed, that is more or less what happened during the recent crisis: banks reduced their lending.

The big difference of course is that it required billions of pounds of taxpayers' money to keep banks lending at that reduced rate during the crises, whereas under FR, there'd be no need for one penny of taxpayer support because, to repeat, it's plain impossible for a bank to go insolvent under FR. Instead of taxpayers taking a hit, bank shareholders take a hit if they sell out during the above sort of crisis. Of course if those shareholders hang on for a year or two, their shares might recover in value.

Would introducing full reserve banking reduce aggregate demand?

A final possible criticism of FR to be considered here (not one made by Vickers) is thus. As pointed out just above, when FR is introduced, depositors have a choice of having their money lodged in an entirely safe manner or alternatively they can have it loaned on to mortgagors, businesses, and so on, but those depositors themselves carry the risk involved.

Now if we assume that the state does nothing with the money that is lodged in a totally safe manner, rather than use it to fund extra state owned investments, then the effect would be to reduce demand and raise unemployment. However, that is no problem because demand can be raised any time by standard stimulatory

measures: interest rate cuts, an increased deficit, quantitative easing, and so on.

Notes

Endnote 1. Liquidity creation by commercial banks

As explained in the main text, if lending entities are funded just by shares, that reduces the amount of MT or money creation done by those entities, and some form of compensatory money creation would probably be required. The private or commercial bank system can actually do that, and as follows.

With a view to obtaining day to day transaction money as distinct from getting a loan, anyone can have any amount of money credited to their account by a bank by depositing enough collateral. If they don't have collateral, they'll still be able to get day to day transaction money, but will have to pay more interest, perhaps the extortionate rates charged by pay day lenders. By way of a simple example, suppose everyone has £Z credited to their account.

Assuming that money is used just for day to day transaction purposes, the balance on everyone's account will fall below £Z and rise above £Z several times a year, but ON AVERAGE over the year the balance will be £Z. Thus no long term loan takes place. In short, money can be created when the existing or fractional reserve banking system makes loans, but the reverse does not apply. That is the existing banking system can issue or create money without any long term loans being granted.

Put another way, there is a distinction in principle between the creation of day to day transaction money and granting long term loans, though of course those two activities get mixed up in the real world.

Endnote 2. Different versions of FR

As pointed out in the main text above, Kotlikoff's version of FR involves lending entities being funded just by shareholders. In contrast, there is Milton Friedman's version. In Ch3 of Friedman's book "A Program for Monetary Stability" he says (under the heading "How 100% reserves would work"):

"The effect of this proposal would be to require our present commercial banks to divide themselves into two separate institutions. One would be a purely depository institution, a literal warehouse for money. It would accept deposits payable on demand or transferable by check... The other institution that would be formed would be an investment trust or brokerage firm. It would acquire capital by selling shares or debentures and would use the capital to make loans or acquire investments. Since it would have no power to create or destroy money, monetary considerations would not demand any special control over its activities."

Note that Friedman contemplates funding lending entities via "debentures" (i.e. bonds). As explained in the main text, that has the problem that it means such entities can go insolvent.

The same goes for the Werner / Positive Money's version of FR. That version involves those who want their money loaned on putting their
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money into a special investment account at their bank. Those depositor / savers are promised £X back for every £X deposited which as is explained in the main text above, makes the lending entity vulnerable and to no great benefit.

Of course of course given a depositor to shareholder ratio of say 50:50, the chances of depositors losing money is vanishingly small. However, there are still arguments for a 100% rather than 50% capital ratio and as follows.

First there are no costs involved in raising the ratio to 100% and for reasons spelled out by Modigliani and Miller. And second, 100% is a clear line in the sand. In contrast, anything less will increase the chances of bankers lobbying for a gradual reduction of that ratio back down to the ludicrous 3% or so that prevailed before the recent crisis. (Irving Fisher (1936) made a similar point about clear lines in the sand: see his paragraph starting “Furthermore, the 100% plan...”.)

Endnote 3. How commercial banks create money

Where someone buys shares in a lending entity worth £Y and that money is loaned on, no money creation takes place.

In contrast, where someone DEPOSITS £Y at a bank / lending entity, and that money is loaned on, the borrower has £Y, but the depositor also regards him/herself as being the proud owner of £Y. Hey presto: £Y has been turned into £2Y. Money has been created out of thin air.

Endnote 4. If MT is so useless, why do banks do it?

Having poured cold water on MT above, the fact remains that commercial banks do MT, and it is a not bad assumption that where something takes place in a free market, that may well be beneficial (though of course there are glaring exceptions to that rule). At any rate, the above question merits an answer, and the answer is thus.

Banks are in competition with each other. And with a view to attracting funds, banks make impressive claims as to the safety of any funds attracted. Indeed, they take it to the point of claiming that anyone depositing £X is absolutely guaranteed to get £X back (maybe plus interest and maybe less bank charges). However that claim is fraudulent because banks lend or invest on sums deposited, and there is no such thing as a totally safe set of loans or investments. (I’m assuming a pre-1930 free market scenario where bank bail outs were unheard of).

In contrast, if banks said to depositors something like “we’ll do our best to return your money, but there are not absolute guarantees”, that would be more honest. But that would turn those deposits into something resembling shares. But that is precisely what is advocated here: funding lending entities via shares rather than “guaranteed to get your money back” deposits.

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2. Forty two flawed arguments for and against full reserve banking

Full reserve banking in brief

The term full reserve banking (FR) refers here to the system advocated by Friedman (1960, 2nd half of Ch3), Kotlikoff (2012, p.43), Levitin (2015), and Werner, et al. (2011) amongst others. That system is sometimes called “100% reserve banking” and is as follows.

The existing banking industry is split in two. One half offers depositors totally safe accounts (or accounts which are as near total safety as it is possible to get). In order to ensure that the money really is completely safe, nothing is done with the money: it is just lodged at the central bank (CB). Though possibly (as advocated by Friedman) some of that money could be invested in short term government debt. That money thus earns little or no interest, but *it is* instant access, and is used by account holders for day to day transactions.

The second half of the industry lends to mortgagors, industry and so on. But that half of the industry is funded just by shareholders, or stakeholders who are in effect shareholders. For example under Kotlikoff’s system, both halves of the industry consist of mutual funds (“unit trusts” in the UK), with the first half consisting of money market mutual funds and the second half consisting of non-money market mutual funds. And those with a stake in non-money market mutual funds (as is the case with existing non-money market mutual funds) are in effect shareholders, though they are not normally referred to as such.

As to Friedman's system, there again, the entities making up one half of the former banking industry are separate from the entities making up the second half. In contrast, under Werner et al's system, safe accounts and accounts which lend on account holders' money are offered under the same roof. However, the basic principle of all three systems is the same.

One advantage of FR is that no bank or bank like entity can suddenly fail in the same way as banks tend to suddenly fail under the existing system. Thus no taxpayer backing or subsidies are needed to underpin the system. However, any entity can decline *slowly* given poor management. The reasons why sudden failure is ruled out are as follows.

As to safe entities / accounts, the money there is near completely safe. And as to lending entities, if lending is done in an incompetent manner, all that happens is that the value of the relevant shares (or mutual fund units) falls: the actual entity does not become insolvent.

As Selgin (1988) put it "For a balance sheet without debt liabilities, insolvency is ruled out..." – which is not to suggest Selgin supports FR.

Incidentally, and returning to the above mentioned mutual funds, a particular type of bank / mutual fund in the US is being forced to obey the rules of FR, namely existing money market mutual funds. E.g. see SEC (2014).

Another important merit in FR is that it disposes of the seignorage profits which private banks (PBs) make. Those profits are effectively a subsidy of PBs in much the same way as a traditional backstreet counterfeiter is subsidised by the community at large. As the economics Nobel laureate Maurice Allais put it:

"In reality, the 'miracles' performed by credit are fundamentally comparable to the 'miracles' an association of counterfeiters could perform for its benefit by lending its forged banknotes in return for interest. In both cases, the stimulus to the economy would be the same, and the only difference is who benefits."

However, the question as to whether PBs really do enjoy seignorage profits is not simple, and is examined in more detail in section 39 below.

Criticisms of FR

FR limits the availability of credit

Claimed by Van Dixhoorn (2013, p.21), Vickers (2011, para 3.21.) and Kregel (2012). See Kregel's passage starting, "In a narrow banking system".

Answer. FR certainly limits the availability of credit in that it requires those who fund loans and investments to carry the risk involved (as opposed to the existing system where the taxpayer carries the ultimate risk). And that means the cost of funding loans and investments will rise a bit. But that rise in the cost of borrowing simply reflects the removal of a subsidy: that's the current practice of letting people have their money loaned on or invested, with the taxpayer carrying the ultimate risk.

As to the deflationary or demand reducing effect of that reduced availability of credit, that is easily dealt with by standard stimulatory measures (the measure favoured by advocates of FR, at least Friedman (1960) and Werner et al. (2011)) being to simply create new base money and spend it into the economy and/or cut taxes).

As implied above, taxpayers do not carry *all the risk* involved in lending. For example in the US there is the Federal Deposit Insurance Corporation (FDIC) which charges banks an insurance premium and reimburses depositors when a bank fails. However, the FDIC only deals with relatively small banks. Thus it's taxpayers who carry the risk when it comes to large banks. Plus even in the case of small banks, there is only one way of providing depositors with complete and total safety, and that's to have the full power of the state involved (backed by taxpayers of course). After all, any insurer (e.g. the FDIC) can face the situation where it just cannot meet all claims if enough large losses occur at once.

Safe account money is not invested under FR: a waste

I.e. as regards the safe accounts or safe entities that are set up under FR, that involves storing significant amounts of money which on the face of it could be used for loans and investments, and that is a waste.

Claimed by Vickers (2011, section 3.21).

Answer. When FR is implemented and \$Xbn is lodged in safe accounts (which comes the same thing as people storing \$Xbn under their mattresses), it costs nothing to supply the population with the sums that it wants to keep under those hypothetical mattresses. As Friedman (1960, Ch3) put it, "It need cost society essentially nothing in real resources to provide the individual with the current services of an additional dollar in cash balances."

That argument can be put the other way round and as follows. Assume FR has been implemented, and to keep things simple, assume the economy is at capacity. And assume that the above money in safe accounts is then used to fund loans. That amounts to, or causes an increase in aggregate demand, and that's not possible,

assuming the economy is already at capacity. Thus to counteract that increase in demand, interest rates would have to rise. Thus the net effect would be no increase in lending. Thus the above claim by Vickers that unused money in safe accounts is money that can be actually used does not stand inspection.

Central bank money is not debt free

I.e. the claim by some advocates of FR that CB money is “debt free” is false because all money is a form of debt.

Claimed by Van Dixhoorn (2013, p.21) and Wray (2015).

Answer. In a not very important sense the above “all money is debt” idea is right: that is, base money or CB created money is NOMINALLY a debt owed by the CB to the holder of that money. Indeed British £10 notes and other notes actually state “I promise to pay the bearer on demand the sum of £10”.

But of course that “promise” is a farce. That is, anyone trying to get £10 of gold (or anything else) from the Bank of England in exchange for their £10 notes, would be told to go away (perhaps assisted by the police). Thus in effect, CB created money is indeed debt free.

In contrast, for every dollar of money created by commercial banks there is, or so it seems, a dollar of debt (owed by a borrower to a commercial bank). But even that argument is debatable (See No.39 below).

It could be argued that base money is a debt in the following sense. A characteristic of a debt is that it can be used to nullify and equal and opposite debt. Thus when government suddenly demands \$X of tax from you, you can use base money to pay them (in fact it’s the only money they will accept in many countries). Thus it could be argued that base money BECOMES a debt when you receive a tax demand. But that is not the normal meaning of the word “debt”.

So the conclusion is that when it comes to the amount of debt associated with privately issued money as compared to publically issued money, there are important differences. The claim that publically issued money (base money) is debt-free may not be totally accurate, but it is not far from the truth. (For some slightly different arguments against Wray’s “all money is debt” argument, see Lonergan (2016)).

Bank capital is expensive for tax reasons

I.e. increasing bank capital as occurs when FR is implemented would involve a cost in that the tax treatment of equity is more onerous than in the case of deposits.

Claimed by Elliot (2013).

Answer. The above argument contains an extremely simple flaw, namely that tax is an *entirely artificial* imposition, and should thus be ignored. To illustrate, if government taxed red cars more heavily than blue cars, that would raise the price of red cars. But that would not be evidence that the REAL COST of producing red cars was any more than the cost of blue cars.

Central banks will still have to lend to commercial banks

I.e. to deal with any lack of availability of credit, the CB may need to lend to private banks (PBs) which exposes the CB to risks. Thus FR does not dispose of risks for taxpayers.

Claimed by Van Dixhoorn (2013). See paragraph starting “Fourth, we consider...” (p.34).

Answer. Some FR advocates claim that CBs may indeed need to lend to PBs, but most of them argue that new CB money should only be spent into the economy when there is room for stimulus. As to lending, most FR advocates believe in leaving that and interest rates to the free market. That is, if demand for credit exceeds supply, most FR advocates believe in simply letting the price of credit rise.

Moreover the logic used by the authorities in the recent crisis to justify assistance to banks is very debatable: that logic being that banks have made large losses, therefore they should be supplied with enough taxpayers’ money to enable them to return to the amount of lending that existed prior to the crisis.

In any normal industry, the fact that losses are made is a good indication that the industry is too large and needs to contract. And as to the fact that if the total amount of lending declines if the banking industry declines which in turn reduces aggregate demand, that is easily dealt with by standard stimulatory measures.

Indeed, according to the former governor of the Bank of England (King, 2010) the assets of banks in Britain are now *ten times* what they were relative to GDP in the 1960s: additional evidence that the banking industry should be shrunk.

Of course, assuming we continue with the existing banking system, giving banks enough assistance during a crisis to prevent a *total collapse* of an economy or the world economy is justified. But the recent trillion dollar bailout of banks is just additional evidence of the flaws in the existing system: it’s not an argument for CBs to lend to commercial banks on a regular basis.

Moreover, the lender of last resort facility available to commercial banks is just one of forms of preferential treatment (i.e.

subsidy) enjoyed by commercial banks: other industries do not enjoy the same luxury.

FR stops banks producing free money from thin air which can fund investments

I.e. when a private bank grants a loan, it can be argued that the relevant money comes out of thin air and that money can be used to fund investments. Thus (so it might seem) people do not really need to save in order to fund investments.

Claimed by Pettifor (2014) and Kregel (2012). See Kregel's passage where he claims that FR would create a system "in which all investment decisions...." See Pettifor's paragraph starting "Unlike commodity money...".

Answer. The idea that we don't need to save in order to provide ourselves with investments (houses, office blocks, etc) is too good to be true. And as the old saying goes, if anything seems to be too good to be true, it probably is.

If an economy is at capacity and a bank grants a loan, the latter will raise demand unless someone abstains from spending (i.e. saves). And if the economy is at capacity and demand rises, then inflation rises. As a result the central bank will raise interest rates, which cuts lending, borrowing and demand. Thus the net effect is zero: back to square one. Thus the idea that commercial banks can create money or wealth out of thin air which enables someone to make real investments is a myth.

The latter "zero effect" obviously plays out slightly differently depending on *exactly how* the authorities counteract the above increase in demand (e.g. they could counteract it with a fiscal tightening up). Plus the zero effect would play out differently depending on whether the country was on the gold standard or not. But certainly the idea that we can enjoy the benefits of new investments without having to save or abstain from consumption to fund those investments is nonsense.

In contrast to the above assumption that the economy is at capacity, the alternative and equally valid assumption is that it is *not at* capacity. In that case there is indeed a free lunch to be had. That is, as suggested by Pettifor and Kregel, private banks can produce money from nowhere which can fund investments, and there is no need to cut down on current consumption to pay for that investment. What happens is that unemployed resources (e.g. unemployed labour) is put to work to create those investments.

However, there are two problems with that argument. First, private banks act in a *pro-cyclical* fashion: that is in a recession, far from lending out more money to fund investments, they do the

opposite, namely cut down on lending. And come a boom, they create and lend out money like there is no tomorrow, thus exacerbating the boom: exactly what we do not want. Thus the implication made by Kregel and Pettifor namely that PBs help us out of recessions is very questionable.

Second, the fact that private banks in practice do not give us the free lunch alluded to by Kregel and Pettifor does not matter at all because the state or central bank can provide the free lunch. That is, the state can implement stimulus in some form or other. Indeed, there is no particular reason to assume, given a recession, that the cause is inadequate investment: that is, does it not make more sense to implement *general* stimulus, as a result of which businesses where they see fit will doubtless invest more?

Investments under FR might not be viable

Claimed by Kregel (2012). See his passage starting “First, the real investments chosen....”

Answer. The advocates of FR do not claim that investors will be any more competent under FR than under the existing system. Clearly under both systems there are, or will be competent and incompetent investors.

FR will not reduce pleas by failing industries to be rescued by government

Claimed by Kregel (2012). See his passage starting “There would always be a risk...”

Answer. Advocates of FR do not claim that FR is a solution to corruption: in particular, politically well-connected individuals trying to extract taxpayers’ money from politicians.

The cost of converting to FR will be high

Claimed by Van Dixhoorn (2013, p.21 and by Warner (2014).

Answer. Assuming a country benefits from FR and continues to benefit for the next century or two, then transition costs are near irrelevant compared to the long term benefits. Moreover, as one advocate of FR (Friedman, 1960, Ch.3) put it “There is no technical problem of achieving a transition from our present system to 100% reserves easily, fairly speedily, and without serious repercussions on financial or economic markets”.

Central bank committees won’t be politically neutral

I.e. FR involves some committee of economists (and perhaps non-economists) deciding on how much money to create and

spend, or deciding on other forms of stimulus, and there is no guarantee such a committee will be independent or politically neutral.

Claimed by Van Dixhoorn (2013, p.22) and by Pettifor (2014). See Pettifor's paragraph starting "Wolf's proposal is problematic".

Answer. There is no reason why this should be any more or less of a problem than with *existing* committees that determine stimulus. For example there is the Bank of England Monetary Policy Committee which has a *huge influence* on stimulus (via interest rate adjustments, quantitative easing, etc). Other countries obviously have similar committees. And those committees are certainly not supposed to stray into political territory. But the dividing line between the political and the strictly economic will never be totally clear. However (and to repeat) that would be no more of a problem under FR than under the existing system.

Moreover, Dyson & Jackson (2013) (and doubtless other advocates of FR) are *very specific* on the point that the above sort of committee should *never* interfere with political decisions. The exact way this is done under Dyson's system is for the "committee" to decide *how much* money should be spent net of changes tax into the economy over the next six months (or some other period), while the *exact way* that money is spend (or whether the adjustment to net spending comes in the form of adjustments to tax) is left *entirely* to politicians and voters.

Also, the form of stimulus advocated by most supporters of FR (i.e. creating new base money and spending it and/or cutting taxes) comes to exactly the same thing as a form of stimulus that has been applied in very large doses over the last two or three years: that is fiscal stimulus followed by quantitative easing. Thus if political interference by the above sort of committee is inevitable under FR, one has to wonder how those sort of committees have managed to avoid interfering in politics to any significant extent over the last few years.

Administration costs of FR would be high

Claimed by Van Dixhoorn (2014) and Krugman (2014). See Krugman's paragraph starting "Cochrane's proposal calls for...".

Answer. Obviously the central bank or some other body of bank regulators would have to do a fair amount of auditing of commercial banks to make sure they were obeying the rules. But such auditing is necessary under the *existing system*. Moreover, compare that with the rules which make up the Dodd-Frank regulations: those stand at 20,000 pages and counting (several times the length of "War and Peace"). And then there is the near

incoherent ring-fence proposals put by Vickers (2011). Compared to those two, FR is simplicity itself.

For a scathing indictment of Vickers, see Kotlikoff (2012). As to Dodd-Frank, the head of the Dallas Fed (Fisher, 2013) said “We contend that Dodd–Frank has not done enough to corral “too big to fail banks” and that, on balance, the act has made things worse, not better.” And for two more criticisms of current attempts at bank reform see Schiller (2014) and Brown (2013).

The cost of current accounts will rise under FR

Claimed by Van Dixhoorn (2013, p.22) and Aziz (2014).

Answer. It is true that under FR, those with transaction / safe / current / checking accounts get little or no interest: i.e. probably less interest than on such accounts under the existing system. However interest under the existing system only comes as a result of being able to have one’s money loaned on or invested with the taxpayer carrying the ultimate risk. But the latter is a totally unwarranted “have your cake and eat it” subsidy.

If restaurants had been subsidised for the last century and that subsidy was removed, then (to use Van Dixhoorn’s phrase) “losses would be imposed on” those eating at restaurants. But that would not justify continuing to subsidise restaurants.

A possible solution to the above problem would be to allow bank customers to do debit card transactions or draw cheques on investment accounts (that’s accounts which fund loans to mortgagors, businesses, etc). That would be the equivalent of telling your bank under the existing system keep the balance in your current or checking account to a minimum: i.e. telling them to put any surplus funds into a term or deposit account. However banks would charge for that service, thus costs for customers would probably not be reduced: probably one of the reasons why that sort of service is not normally available from banks under the existing system.

FR is dependent on demand injections

Claimed by Kregel (2012) and Fontana & Sawyer (2016, section 3).

Answer. One wonders how Kregel (2012) and Fontana & Sawyer (2016) would describe the trillion dollars recently used to bail out the bank industry and the large amounts of stimulus needed to rectify the effects of the recent crisis. Kregel uses the phrase “chronically dependent on demand injections”. The phrase “chronically dependent” would seem more appropriate to the existing banking system, rather than to FR.

Moreover, stimulus costs nothing in real terms: to put it figuratively, printing and spending dollar bills (and/or cutting taxes) costs nothing. (See the quote from Friedman in No.2 above).

The effect of FR on inflation and unemployment is unclear

Claimed by Van Dixhoorn (2013). As Van Dixhoorn put it: “it would be difficult to predict what the ultimate effects on output and inflation would be..”.

Answer. There is *no need whatever* to predict what the effect on output or inflation would be because the latter two can be adjusted (just as they are under the existing system) by adjusting stimulus. That of course is done under the existing system by adjusting interest rates, quantitative easing, the size of the deficit, etc. In contrast, most advocates of FR advocate a slightly different form of stimulus (which actually amounts to fiscal stimulus plus QE). But that’s a minor technical point.

Moreover, under the *existing system*, governments have only the haziest ideas as to what inflation and unemployment will be five years from now: e.g. there might be another credit crunch, or there might not. Thus the above criticism applies to the *existing system* as much as it does to FR.

The state cannot be trusted with peoples’ money.

I.e. the so called “safe accounts” set up under FR are not entirely safe.

Claimed by (Van Dixhoorn, 2013) section VIII, p.32.

Answer. Clearly governments are not entirely reliable and for two reasons. First, governments may cause excess inflation, which means that sums deposited in safe accounts lose their value, and second, governments have been known to renege on promises to return sums they have borrowed or which have been lodged with them. However, neither of those two points stands inspection.

As to inflation, if money lodged at the central bank is losing its value, then money lodged at a private bank will lose value at exactly the same rate.

And as to the point that governments can renege on promises to return monies lodged with them, the sort of government which does that is quite likely to also confiscate monies lodged at private banks (sometimes known in polite circles as “bailing in depositors”).

Moreover, FR is a system suitable for a country with a reasonably responsible government. Obviously where government is near non-existent or chaotic, citizens would be well advised to

keep their savings under their mattress and/or in the form of valuables like some rare metal.

And finally, under the existing system, millions of UK citizens seem to be happy to lodge a portion of their money with National Savings and Investments, a state run savings bank. That is, the reality is that a significant proportion of the population in Britain regard government as being responsible enough to be entrusted with a portion of their wealth.

FR will reduce innovation by banks

Claimed by Van Dixhoorn (2013). Van Dixhoorn's actual words are: "will reduce the amount of innovation in the payments system".

Answer. Under FR, banks compete with each other exactly as they do under the existing system. Thus why there is less incentive to innovate is a mystery. Van Dixhoorn does not explain.

Also the above claim about lack of innovation is hard to square with the fact that at least two advocates of FR (Dyson, 2016 and Niepelt, 2016) strongly support what is probably the biggest "innovation in the payments system" for a hundred years, namely a system where anyone can have an account at the central bank with such accounts being run on block-chain technology.

The reason for that support is that the latter type of accounts and payments system comes to the same thing as the safe accounts advocated by FR enthusiasts. Thus if those central bank accounts came to dominate the system, then FR would have been partially implemented.

Incidentally, Niepelt is not an *ardent* supporter of FR in the same way as Dyson is. But Niepelt *does say* the above CB block-chain system would ease the introduction of FR.

Lenders will try to turn their liabilities into "near-monies"

Claimed by Van Dixhoorn (2013) p.33.

Answer. Obviously some lenders will try to do that. In fact advocates of FR in the 1930s were well aware of that potential problem as are present day advocates of FR, Dyson & Jackson (2013) in particular. However there is a fundamental reason for thinking that while obviously a finite amount of near money creation will always take place, the actual amount of that money creation will never be significant. The reason for that stems from the text book definition of the word money, which is something like "anything widely accepted in payment for goods and services or in settlement of a debt". The crucial phrase there is "widely accepted".

Large banks or “money creators” (e.g. Barclays or Chase) are widely recognised, thus their liabilities are widely accepted. But it is impossible for those large organisations to escape the attention of the authorities. To illustrate if Barclays said in its promotional literature something like “We offer you the combined advantages of instant access to your money, plus we guarantee you’ll get £X back from us for every £X you deposit, plus you get a decent rate of interest because we will lend out your money”, auditors and/or the authorities would have to be stupid not to notice that.

In contrast, there will doubtless always be small shadow banks which manage to issue liabilities that are used as money, but those sort of organisations are not widely recognised. Thus their liabilities are not (to quote the above definition of money) “widely accepted”. Thus even if they do manage to issue near monies, those liabilities would not be very “money like”.

Are debts owed by one non-bank firm to another a form of money?

Van Dixhoorn (2013) - claims they are. See paragraph starting “The sector will...” p.34).

Answer. The definition of the word money is something like “anything widely accepted in payment for goods and services”.

Now the liabilities of banks are “widely accepted” because they are *specifically designed* to be easily transferrable. In contrast, it is quite untrue to suggest, as Van Dixhoorn does that an ordinary trade credit is a form of money. To illustrate, if firm A delivers goods to firm B worth \$X, B is then indebted to A to the tune of \$X. And B could issue an IOU in payment. But is that liability (the IOU) likely to be of any use to A for the purposes of “paying money” to some third party? It is unlikely. Thus an ordinary trade credit just isn't money in a large majority of cases.

The latter form of “IOU” money creation was much more common in the 1700s and 1800s: the IOUs took the form of bills of exchange. But those are rare nowadays.

But that is not to say that after implementing FR there would be a total absence of types of money other than what the average household or firm regards as money. In particular, in the world’s financial centres various types of debt serve the purpose of money: e.g. short term government debt. However for about 95% of households and the large majority of firms, particularly small and medium size ones, there is only one form of money and that is CB created money and money created by well known PB which trades at par with CB money.

Advocates of FR are concerned just with retail banking

Claimed by Van Dixhoorn (2013, paragraph starting “Third the critics have..” p.34 and Krugman (2014).

Answer. While VanDixhoorn claims the advocates of FR concentrate on the “small saver”, she cites no evidence to support the claim. Nor does Krugman.

Having read a large amount about FR, my impression is that the advocates of FR are concerned with *general principles*. One of the main principles is that banks should not promise to return \$X to depositors for every \$X deposited when that money is loaned on in a less than entirely safe manner. Whether the depositors are large corporations with several million deposited, or pensioners who have deposited much smaller amounts is wholly irrelevant.

The government and/or central bank will not be better than the market at regulating the amount of money

Claimed by Warner (2014) passage starting “..it takes quite a leap to think..”.

Answer. We have just been thru a crisis caused by a catastrophic failure of private banks to regulate the amount of money / loans in a stable manner. Thus the above alleged weakness in FR flies in the face of reality.

Moreover, most of those who make the above criticism seem quite happy for government and CB to regulate aggregate demand (e.g. by regulating interest rates). And that regulation is necessary *precisely because* the free market produces booms and busts.

Of course governments’ and CBs’ efforts to tone down booms and busts are nowhere near 100% competent. But, the people who make the above criticism clearly think that the latter efforts are better than nothing.

An even more glaring self-contradiction inherent to the above criticism is that the *form* of stimulus effected over the last two or three years (fiscal stimulus followed by QE) comes to *exactly the same thing* as the form of stimulus advocated by most FR advocates.

FR would drive business to unregulated sector

Claimed by Krugman (2014) passage starting “If we impose 100% reserve..” and by Diamond & Dybvig (1986).

Answer. Clearly if government regulates just one part of an industry, that will cause a number of operators to flee to the unregulated sector. And that has indeed happened over the last decade. That is, there has been a shift of business away from official banks and into the shadow bank sector. But the simple Musgrave, (2018). *Full Reserve Banking*

solution to that is to regulate any entity above a certain size that amounts to a bank.

As the former head of the UK's Financial Services Authority, Turner (2012) put it: "If it looks like a bank and quacks like a bank, it has got to be subject to bank-like safe-guards."

As for the fact that the unregulated sector contains numerous small entities which the authorities might not be able to keep tabs on, that point was dealt with above. Briefly, the smaller an entity, the less widely accepted will its liabilities be, thus the less money like will those liabilities be.

Also most FR advocates do not advocate a complete ban on forms of money other than state issued money: most FR advocates favour *local currencies* (currencies issued by individual cities and similar small geographical areas).

It wasn't just banks that went wrong in 2008: also households became over-indebted

Claimed by Krugman (2014).

Answer. So who were those households indebted to? It was banks (or those who banks had sold mortgage backed securities to). It was banks who sold those "No Income No Job or Assets" mortgages.

Under FR, if a lending institution makes silly loans, all that happens is that the shareholders or stakeholders in the entity find the value of their stakes decline. The entity does not go insolvent.

Creation of liquidity / money is prevented

Claimed by Diamond & Dybvig (1986).

Answer. True, but that is the whole object of the exercise. That is, advocates of FR claim that just the CB should create money, while commercial banks continue to act as intermediaries between borrowers and lenders much as they do now (with the exception that lenders carry all losses when poor loans are made rather than the taxpayer carrying some of those losses as occurs at present).

Put another way, CBs can and do create money / liquidity just as much as PBs. Thus the important question is: should we have just the CB doing it, or CBs plus PBs or just PBs? Given that we already give CBs doing the job of countering the instabilities created by the free market (including PB money creation), why not just go the whole way and have just CBs doing the job?

Having both type of bank do the job is similar to allowing your child access to the steering wheel of a car: you can no doubt counteract any silly moves the child makes (the equivalent of CBs

countering the “silly moves” of PBs), but it’s simpler just to bar children / PBs any access to the controls.

Funding via commercial paper would be more difficult under FR

Claimed by Diamond & Dybvig (1986).

Answer. Funding via commercial paper would certainly become more difficult if the rules applied under FR were extended from banks to non-bank corporations. But there is not much reason to do so.

It is true that borrowing specific sums of money (which is what is involved in commercial paper) is a more risky method of funding a corporation than funding via shares. But mass collapses of non-bank corporations just do not seem to have been a problem over the last two centuries in contrast to catastrophic collapses (but for the intervention of governments) of banking systems.

Also, liabilities issued by non-bank corporations are not by any stretch of the imagination a form of money, and it is money printing by PBs which is one of the root flaws in the existing bank system.

FR is nearly the same as monetarism

Claimed by Pettifor (2014), and Fontana (2016, section 2.2).

Answer. It is true that advocates of FR (just like the advocates of Modern Monetary Theory) claim that the size of the stock of base money (or more generally “Private sector net financial assets” to use MMT parlance) influences demand. To that extent, both groups have something in common with monetarists.

However, advocates of FR (like the majority of economists probably) also claim that *the process of* spending extra money into the economy also has an effect. I.e. they claim fiscal boost has an effect. That is, if government decides to hire an extra thousand employees by this time next month and pay for that with new money, then employment goes up by a thousand, all else equal (assuming the extra money is not inflationary, i.e. assuming the economy was below capacity before the extra thousand were hired). And that all happens despite there being no “monetary” effect (at least initially). That is, during the first few months of the above thousand employees work, there is a negligible increase in the money supply.

Deposit insurance and lender of last resort solves existing banking problems.

I.e. there is no need for FR.

Claimed by Aziz (2014).

Answer. Lender of last resort (a luxury not available to other industries) is a *subsidy* of the bank industry, particularly where the loans made by CBs to PBs are at a zero or near zero rate, as occurred at the height of the recent crisis. That's in contrast to the penalty rate advocated by Walter Bagehot.

Same goes for deposit insurance where that is funded by taxpayers, as was the case in the UK till recently.

As it explains in the introductory economics text books, subsidies misallocate resources, that is, they reduce GDP (unless there is a very good social justification for a subsidy.)

Incidentally, and contrary to common perception, Walter Bagehot did not approve of lender of last resort (Bagehot, 1873: final chapter). He regarded it as something that was so ingrained in the system that it would be impossible to remove.

It can of course be argued that the FDIC is a self-funding insurance system, and hence that there is no subsidy element there. Well the answer to that is that there is no such thing as a totally reliable private sector self-funding insurance corporation. Reason is that the latter type of insurers can and do go bust. In contrast, the near 100% safety that comes from state owned insurance systems like FDIC derive from the fact that the taxpayer backs up the FDIC. And taxpayer backing equals a subsidy.

There is no demand for safe or warehouse banks

I.e. there has been no demand for throughout history for banks which simply lodge money without lending it on and thus earning depositors some interest. Thus there would be no demand for the safe accounts under FR.

Claimed by White (2003) and Van Dixhoorn (2013).

Answer. First, the above contradicts the equally common claim by opponents of FR that there'd be a stampede for safe accounts when FR is introduced. See No.28 below.

Second, there is good evidence as to what would happen that can be gleaned from what depositors at US money market mutual funds have done recently as a result of the rules of FR being imposed on MMMFs. It seems that a majority of depositors are opting for safe accounts rather than accounts where they bear the costs of poor loans and investments.

Third, accounts already exist in some countries (e.g. National Savings and Investment accounts in the UK) which are essentially Musgrave, (2018). *Full Reserve Banking*

the same as the safe accounts envisaged under FR. Billions have been deposited at the NSI.

Fourth, to the extent that there *is a limited* demand for warehouse banking since WWII, that is hardly surprising. Reason is that taxpayer funded backing for conventional banks enables ordinary depositors to enjoy total safety while getting interest. Why go for an account that pays no interest when you can get interest gratis the taxpayer?

FR would cause a stampede to safe accounts

I.e. few existing depositors would want their stake in their bank to be effectively converted to a shareholding.

Claimed by Dowd (2014).

Answer. The reality is that shareholders (in corporations in general rather than specifically in banks) do not demand a particularly high rate of return compared to depositors or bondholders.

Moreover, the above claim by Dowd contradicts the claim made by several opponents of FR, namely that there'd be no demand for safe accounts - see No.27 above.

FR would raise the cost of funding banks

I.e. it might seem that the cost of funding banks rises because shareholders demand a bigger return on their investment than depositors. Thus if the proportion of bank funding that comes from shares as opposed to deposits is increased then the cost of funding banks would seem to rise.

Answer. The flaw in the above argument was set out by Franco Modigliani and Merton Miller. As they pointed out, the risks involved in running a bank which performs a given set of activities is a GIVEN. Thus the price charged by those covering the risk involved is also a given. Thus increasing the number of people who cover that risk has no effect on the total charge they make for covering the risk.

But even if FR did increase the cost of funding banks, that is explained (wholly or partially) by the removal of a subsidy from the bank industry, namely the bank industry's right to print or create money. Removing a subsidy (unless there is a very good social justification for the subsidy) increases GDP.

Fractional reserve is not fraudulent

I.e. Fractional reserve (that is the existing banking system) has been going for centuries and is not widely perceived as fraudulent.

Claimed by White (2003).

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KSP Books

Answer. The first problem there is that White in the latter work doesn't say what the alleged fraud actually is. Instead, he refers readers on his first page to about ten books and articles which apparently set out the fraud. It is thus impossible to know what fraud or alleged fraud White refers to.

Second, given the number of works he cites that apparently set out the fraud, it's unlikely those works all agree with each other. Indeed, there are several popular "fraud" charges made against fractional reserve which are clearly invalid.

It's thus near impossible to deal with his claim that for fraud to exist, someone must be duped. Reason is that there are all degrees of "duping" from slight misrepresentation to serious and carefully thought out fraud. And the extent of misrepresentation doubtless varies depending on which of the fraud charges levelled against fractional reserve one is considering.

However, as a second best, let us consider White's arguments as they relate a "fraud" charge against fractional reserve which does have some substance, and which is as follows.

A fractional reserve bank promises to return to depositors the exact sum deposited (maybe plus interest and maybe less bank charges). But of course the flaw or fraud there is that the money is loaned on or invested by the bank and that involves the risk that the loans or investments go bad. And sure as night follows day, once every twenty or thirty years the loans do go wrong, and one or more large banks can't repay all the money they owe depositors. And as to small banks in the US, they go bust at the rate of about one a week.

So how much fraud or misrepresentation takes place there? Well commercial banks certainly do not advertising the fact that there is a one in twenty chance that depositors will lose their money! Quite the reverse: their publicity normally stresses the safety of the relevant bank.

Of course the contract governing an account at a typical bank, the small print in particular, may say something different. But that's near irrelevant. The typical bank customer does not read the small print - and probably wouldn't understand it if they did. It is thus indisputable that banks are guilty of a certain amount of misrepresentation or to put it more strongly - "fraud".

A 25% or so capital ratio is good enough

I.e. a 25% or so ratio brings near total safety, which means there is nothing to be gained from a 100% ratio, which is what FR involves.

Claimed by Wolf (2012). Wolf's exact words were "I accept that leverage of 33 to one, as now officially proposed is frighteningly high. But I cannot see why the right answer should be no leverage at all. An intermediary that can never fail is surely also far too safe."

Answer. First, under FR, "intermediaries" *can fail* in the sense that shareholder / stakeholders can lose a sizeable proportion of their stakes. Indeed, in theory they can lose everything. Plus they can fail in the sense that a poorly performing intermediary can be taken over with the existing management sacked, as is normal for non-bank corporations which perform poorly.

Second, as explained in section 29 above, the whole "high cost" idea is very debatable.

Third, the Vickers commission (of which Martin Wolf was a member) *claimed* such costs were involved (see [Vickers, 2011](#)). They claimed that total safety would suppress bank lending, which in turn would suppress economic growth. However, any such "suppression" can be countered by standard stimulatory measures (or the specific stimulatory measures advocated by those who argue for FR).

Fourth, if the capital ratio is raised to just 25% (or any other non-100% level) banks will simply bribe and cajole politicians over the years into reducing the ratio back down to the 3% or so that has obtained over the last decade or so. In contrast, 100% is a clear line in the sand.

Indeed, George Osborne, Britain's finance minister at the time of writing, has campaigned against *any improvement whatever* in the capital ratio. The fact that his political party, the Conservatives, is partially funded by banks is of course entirely coincidental (See [Wolf, 2013](#)).

And on the subject of "bribes and cajoling" it should be born in mind that the British finance industry spends £93m a year on lobbying, according to Mathaison, Newman, & McClenaghan (2012), while in Europe as a whole, there are 1,700 lobbyists working for banks ([Corporate Europe Observatory, 2014](#)).

Fifth, assuming the idea set out at the start above, namely that it's money creation by PBs that is one of the main flaws in the existing system (because that money printing amounts to a subsidy of PBs), then the capital ratio needs to be 100%. That is, if PBs can to any extent accept deposits, lend on those deposits then money multiplication takes place.

As Cochrane (2013) argued, the best and cleanest system is to simply remove all runnable liabilities from the liability side of bank's balance sheets, i.e. implement the 100% ratio.

A Glass-Steagall or Vickers type split is better than an FR type split

I.e. splitting the banking industry into a retail half and investment half is better than the FR type split: splitting the industry into safe accounts and investment accounts.

Claimed for example by Vickers (2011) and Pettifor (2014). See Pettifor's paragraph starting "Next, bank's retail arms..."

Answer. Vickers sets out three basic reasons for separating investment from retail banks on p.9 & 10. Their first reason starts "structural separation should make it easier and less costly to resolve banks that get into trouble". Plus Vickers claims that "Investment banks can fail. Retail ones can't be allowed to." Now that rather conflicts with Vickers's claim that some investment banks (as is the case with retail banks) cannot be allowed to fail (3.28).

Indeed, the above first reason goes on to say that each case or "failing bank" should be treated differently or treated on its merits. But that makes a mockery of the investment / retail split. You might as well categorise banks according to which letter of the alphabet their names start with and then "treat each case on its merits".

Their second reason is that the crisis stemmed largely from the investment banking sector and that "Separation would guard against the risk that these activities (i.e. problems in the investment banking sector) might de-stabilise the supply of vital retail banking services."

Well first, Northern Rock was a retail bank, and it got into trouble. And second and as regards those "vital retail banking services", Vickers admits (to repeat) that some investment banks are also "vital". So Vickers's distinction between retail and investment banks is largely spurious.

Third, Vickers claims "The proposed form of separation also gives scope for UK retail banking to have safer capital standards than internationally agreed minima.."

Note Vickers does not claim that their proposals render retail banks 100% safe: in other words such banks would still have to have taxpayer funded backing, i.e. such banks would still need to be subsidised (which of course conflicts with Vickers's claim that taxpayers should not subsidise banks). In contrast, under FR, bank accounts which depositors want to be totally safe really are totally safe, thus no taxpayer funded backing or subsidy of those accounts is needed.

Incidentally, the claim in the paragraph just above that taxpayer funded backing equals a subsidy is not *necessarily* valid: that is, it Musgrave, (2018). *Full Reserve Banking*

is clearly possible to charge banks for such backing. However, the idea that politicians (in receipt of “donations to election expenses” from bankers) will ever actually make that charge realistic is itself plain unrealistic.

In short, Vickers’s proposals are a mixture of happy talk and self-contradiction, all couched of course, in impeccable English.

In contrast, under FR, the entities that arise to replace the existing banking industry cannot suddenly fail. Thus there is no need for bank subsidies. In short, FR achieves the objectives that Vickers sets itself, whereas Vickers fails to achieve its own objectives.

Bank shareholders will demand a high return to reflect their uncertainty about what a bank actually does

I.e. bank management knows more about its bank than shareholders or potential shareholders, thus the latter will want insurance against possibly being misinformed by bank management, thus equity is an inherently expensive way of funding banks.

Claimed by Elliot (2013).

Answer. Depositors and bond-holders who fund *existing* banks suffer from *exactly the same* asymmetric information problem. Of course depositors are protected from the latter problem by deposit insurance and the too big to fail subsidy, but the latter two are entirely artificial and unjustified subsidies. (That’s where deposit insurance is funded wholly or partially by taxpayers rather than by banks themselves).

Irresponsible lending under FR would be as harmful as under the existing system

Answer. There is a big difference between a bank becoming *insolvent*, and its shares declining in value. As the former governor of the Bank of England (King, 2010) put it:

“And we saw in 1987 and again in the early 2000s, that a sharp fall in equity values did not cause the same damage as did the banking crisis. Equity markets provide a natural safety valve, and when they suffer sharp falls, economic policy can respond. But when the banking system failed in September 2008, not even massive injections of both liquidity and capital by the state could prevent a devastating collapse of confidence and output around the world.”

Thus the “harm” done by irresponsible lending under FR is significantly less than under the existing system.

FR reduces commercial bank flexibility

I.e. under the existing system, an individual bank can lend without being too concerned about whether it has enough deposits to fund those loans, plus the commercial bank system as a whole can expand the total amount it lends without reference to government or CB. And as to those amounts loaned out, they of course just become deposits somewhere in the commercial bank system. That is, loans precede deposits.

Answer. As to the above first scenario (an *individual* bank), that will result in the bank losing reserves to other banks, i.e. becoming indebted to other banks. And there is nothing wrong with that if the indebted bank has found particularly worthwhile or viable borrowers.

But under FR, almost exactly the same happens. That is, any bank can expand the amount it lends if it can attract funds from somewhere: other banks, shareholders, etc. In other words in both cases, the bank which is expanding faster than others becomes indebted to other entities: the only difference is that under FR the latter bank has to line up its creditors *before* it increases its loans, whereas under the existing system those creditors come into existence *after* the new loans are made.

Aggregate lending.

As to the second scenario (the bank system as a whole) it is hard to see any good reason for any significant gyrations in the *total amount* that commercial banks lend. In fact it is precisely such gyrations which are half the problem. To illustrate, in the three years prior to the crunch, commercial bank created money / loans in the UK were expanding much faster than normal and much faster than the stock of CB created money (base money). And that resulted in a boom followed by a bust.

Then, as always happens in busts, commercial banks did exactly what we do not want them to do, i.e. put the whole process into reverse: they called in loans, etc. In short, the commercial bank system *exacerbates* the boom bust cycle.

To summarise, when there is a faster than usual expansion in the amount of commercial bank lending, that's probably a sign of a boom or bubble. In contrast, if the money supply is under the control of the CB, it can expand the money supply in a way designed to be in the best interests of the country as a whole: i.e. in accordance with what inflation and unemployment are doing.

Moreover, opponents of FR (i.e. defenders of the existing banking system) are perfectly happy for CBs and governments to try and control the boom / bust cycle via interest rate adjustments, quantitative easing and so on, and the latter necessarily involves

influencing the amount of commercial bank lending. Those opponents of FR thus need to explain why they object so much to commercial bank lending being controlled in a slightly different way, as occurs under FR.

Profitable loans.

An apparent excuse for the flexibility that the existing bank system affords is that it enables banks to make particularly viable or profitable loans *quickly*. The answer to that is that under FR, as indeed under the existing system, banks would give priority to the most viable loans. Thus any lack of flexibility stemming from FR would not stop viable loans: i.e. it's the least viable loans that would not take place.

FR would not stop bank runs

I.e. given suspicions about a bank / lending entity, it's shares would be dumped in the same way as depositors withdraw money en masse from a traditional bank about which there are suspicions.

Answer. Runs on stock exchange quoted shares just do not happen. Reason is that given bad news about a firm or corporation, the value of its shares drop before anyone has time to sell (with the possible exception of some inside traders). When the oil multinational BP caused a very large oil spill in the Gulf of Mexico a few years ago, it's shares were immediately marked down: there was no "run" on its shares.

In contrast, given bad news about a conventional bank, the bank tries to pretend that its liabilities are still worth 100 cents in the dollar until it finally has to admit they are not, at which point it closes its doors. That is, the banks creditors have a motive to get their money out before the doors close.

As Cochrane (2013) put it, "the financial system needs to be reformed so that it is not prone to runs."

Vickers demolished the arguments for FR

Answer. The Vickers commission was the main official response to the 2007/8 bank crisis in the UK. One of the flaws in the arguments put by Vickers (2011) were set out in No.2 above. That's the argument that FR involves putting large amounts of money in to safe accounts or entities where such money is not loaned on. And that that, on the face of it, is a waste of resources.

Another point made by Vickers, also dealt with above, is the claim that since FR curtails borrowing and lending somewhat, the latter activities would move to the less regulated sector. That point was addressed in No.21 above.

Further flaws in Vickers's arguments are as follows.

In section 3.22, Vickers makes a whole string of errors, so let us run through it sentence by sentence. (Vickers's actual words are in italics below).

“Limited purpose banking²¹ offers an alternative solution, under which the role of financial intermediaries is to bring together savers and borrowers but risk is eliminated from the intermediary because it does not hold the loan on its books. All of the risk of the loan is passed onto the investors in the intermediary (or fund), so that effectively all debt is securitised. However, limited purpose banking would severely constrain two key functions of the financial system. First, it would constrain banks' ability to produce liquidity through the creation of liabilities (deposits) with shorter maturities than their assets.”

Now what's the word “constrain” doing there? FR does not “constrain banks' ability to produce liquidity”. It totally destroys banks' ability to create money / liquidity: the job of creating money / liquidity is handed over to the CB. (Incidentally, “limited purpose banking” is just an alternative name for FR.)

As to “securitisation”, FR does not necessarily involve securitising the loans that banks or lending entities make (though banks would be free to securitise loans if they chose to).

Moreover, there is an absolutely fundamental point here not addressed by Vickers, namely: is the move towards a regime where borrowing is more difficult a move towards a genuine free market, or a move *away from* free markets? The reason that is an important question is that it is widely accepted in economics that GDP is maximised where prices are at free market prices, unless there is a clear social justification for a subsidy or a tax (e.g. children's education and alcoholic drinks respectively).

Now there is a simple reason for thinking that moving away from the existing bank system and towards FR is a move towards a free market. It is that the existing bank system is subsidised: indeed it is so inherently fragile that it *has to be backed by taxpayers*. Plus the right to create or print money is a subsidy of PBs for reasons set out in the quote from Huber in section 39 below.

Next, the “21” near the start of the above quote is a reference to Kotlikoff's version of FR, and Kotlikoff (like other advocates of FR) does not advocate simply turning the existing banking industry into lending entities funded just by shareholders, as Vickers suggests. FR (to repeat) involves splitting the industry into *two halves*, one of which consists of lending entities funded just by shareholders, while the other offers totally safe transaction accounts.

Vickers's next sentence reads: *The existence of such deposits allows households and firms to settle payments easily.*"

Now amazing as it might seem, FR does not involve the destruction of all bank accounts which "allow households and firms to settle payments easily". All FR does is (to repeat) is to have the CB rather than commercial banks create the units / money making up those accounts. Plus under FR, accounts which are used to "settle payments easily" are separated from accounts where relevant sums are loaned on or invested. Next, Vickers claims:

"Second, banks would no longer be incentivised to monitor their borrowers, and it would be more difficult to modify loan agreements. These activities help to maximise the economic value of bank loans."

Answer. Where loans really are securitised, then obviously "modifying loan agreements" is difficult. But (to repeat) securitisation is not an essential ingredient of FR. (To be accurate, securitisation is inherent to FR in the sense that the risk involved in loans is carried by those who buy stakes in lending entities. But presumably Vickers means securitisation in the sense of offloading the risk to some third party which has not an inherent part of a particular lending entity.) At any rate, on that interpretation of what Vickers means by securitisation, there is no obvious reason why the amount of securitisation under FR would be much different as compared to the existing system. And as to the fact that banks are not "incentivised to monitor their borrowers" where loans are securitised, that is no more a problem under FR than under the existing system.

Regulating loans is better than FR

I.e. an obvious way to make banks safer is to impose more stringent regulations on lenders for example insisting on minimum equity stakes for mortgagors (i.e. insisting on maximum loan to value ratios for mortgagors).

Answer. The first problem there is that that is relatively easy to do in the case of mortgages, but not in the case of loans to businesses. For example some bank managers, quite rightly, lend to particular businesses because they know the relevant business proprietors and know the latter to be competent and trust-worthy. Setting up rules and regulations to cater for those elusive characteristics of business proprietors is impossible.

Second, even if it were possible to forbid the making of risky loans, it is hard to see the case for doing so where lender and borrower now what they are doing, and assuming there are no harmful systemic consequences when a significant proportion of

those loans go wrong. And the latter is exactly what FR achieves because when a significant number of loans go wrong, lending entities do not become insolvent: all that happens is that shares in lending entities decline in value. It is precisely risky loans that sometimes turn out to be the most profitable and productive.

Moreover, under FR, those who fund loans are free to have their money loaned on in whatever way they want: if they really want to fund NINJA mortgages, they are free to do so.

Private banks do not earn seignorage profits

Answer. The word seignorage is not defined in exactly the same way in every dictionary. The word is used here to refer to profit made by an entity that prints or issues money: the simplest and crudest example being a backstreet counterfeiter who prints inherently worthless bits of paper, and uses them to buy goods of real value.

Governments, assisted by their central banks do much the same. That is, they simply print money and spend it. Governments get something of real value (e.g. a road, school or war ship) and simply pay with bits of paper, or to be more realistic, with book-keeping entries.

Certainly where recipients of that money are prepared to hold the money without demanding interest (as is the case with £10 notes, \$100 bills, etc), government enjoys seignorage. As to where government has to pay interest to recipients of that money, then essentially government funds its spending by borrowing, and there is no real seignorage there.

Of course few people are bothered by the seignorage enjoyed by governments because government property is property that everyone benefits from.

In the case of PBs, it is much less clear whether and if so how they enjoy seignorage. However, Huber & Robertson (2000) explain pretty clearly how they do it in this simple illustration:

“Allowing banks to create new money out of nothing enables them to cream off a special profit. They lend the money to their customers at the full rate of interest, without having to pay any interest on it themselves. So their profit on this part of their business is not, say, 9% credit-interest less 4% debit-interest = 5% normal profit; it is 9% credit-interest less 0% debit-interest = 9% profit = 5% normal profit plus 4% additional special profit. This additional special profit is hidden from bank customers and the public, partly because most people do not know how the system works, and partly because bank balance sheets do not show that some of their loan funding comes from money the

banks have created for the purpose and some from already existing money which they have had to borrow at interest.”

Of course PBs do not lend to one lot of borrowers at the free market rate and to another lot at the artificially low rate that comes from lending out freshly printed money, as is rather suggested in Huber & Robertson’s simple illustration. Rather, PBs use the freedom to print money to lend at a lower rate than would otherwise obtain, and that expands the total amount of business that PBs do. The profit derived from that extra lending is certainly seignorage of a sort.

Fontana & Sawyer (2016, p.3) claim that PBs do not enjoy seignorage. Fontana & Sawyer do not produce any arguments worth talking of to back that claim, but they do cite the first half of a chapter from Graziani (2003, p.58-66). So let us run through that passage of Graziani’s.

The first problem with Graziani’s argument is that he *defines* money, or at least his ideal form of money as something that does not involve seignorage!

Well I can prove that boats don’t float using my own special definition of the word boat which is something like “anything that sinks”!

The relevant words of Graziani’s are (his p.60), “A real money should satisfy three main characteristics ... iii) the use of money must be so regulated as to give no privilege of seignorage to any agent.”

Graziani’s basic argument is that the simple / basic / obvious activity of banks involves no seignorage, which is correct. That basic activity is that a bank creates and lends money to person X as needed so that X can pay Y for goods or services supplied. Y then deposits the money at Y’s bank, which in turn demands payment (in the form of base money) from X’s bank. Clearly there is no seignorage profit there for either bank.

However (and to repeat), the freedom that PBs have to print a proportion of the money that they lend out is a clear boost or subsidy for the PB industry. I.e. that amounts to seignorage.

Full reserve nullifies automatic stabilisers

Fontana & Sawyer (2016) claim, “Finally, FRB will nullify the automatic stabilisers...”.

Answer. Fontana & Sawyer are right to say that under the existing system, when unemployment rises, government does not need to plead for funds to pay for the increased unemployment benefit burden: government just borrows more.

However, it really doesn't take a genius to set up a rule under which government under a FR *automatically* gets funds from the central bank to pay for a rise in the unemployment benefit bill (or at least a proportion of it). But there's another problem with Fontana & Sawyer's above alleged problem with automatic stabilisers, as follows.

As explained above, even under the existing system, assuming an independent central bank, the central bank has the final say on the amount of stimulus. Now suppose there's a rise in the unemployment benefit bill: that probably means demand is too low which means the central bank will not raise interest rates, and indeed may cut them.

On the other hand, it's always possible that despite a rise in unemployment, the central bank still thinks demand is too high (i.e. inflation is too high). In that case the central bank is likely to *counteract* a rise in demand stemming from the automatic stabilisers kicking in. So even under the *existing system*, central banks can scupper the automatic stabilisers. And a central bank may in fact be right to do that: for example a rise in unemployment in one month is not a brilliant reason for thinking a recession is on the way. In fact Sumner (2013) takes that point further and claims that all forms of fiscal stimulus (including automatic stabilisers) are near pointless because central banks are dominant.

So.... the automatic stabilisers only work under the *existing system* gratis the central bank! And that set up really isn't much different to what would obtain under FR where (as Fontana& Sawyer suggest) FR scuppers the automatic stabilisers. But if you don't like that, i.e. if you're an "automatic stabiliser" enthusiast, then it's not difficult (to repeat) to incorporate an automatic stabiliser element in FR.

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3. Monetary and fiscal policy should be merged, which in turn changes the role of central banks

The recession which started in 2007-8, like many recessions, was sparked off by excessive and irresponsible borrowing. The world responded by cutting interest rates to an all-time low with a view to bringing stimulus via increased borrowing: on the face of it, an absurdity.

However pointing to absurdities or self-contradictions in a system does not prove that the system is not the best available: it must be shown that the system has fundamental flaws which do not plague some alternative and better system. And indeed the purpose of this paper is to point out the fundamental flaws in the existing system for regulating aggregate demand, and set out a better system.

Keynes and Abba Lerner advocated that where additional aggregate demand was required, GCB should spend more, and fund this extra spending from borrowing or creating extra money. And conversely, when inflation loomed, GCB should do the opposite, for example, rein in money via additional tax and “unprint” or extinguish such money.

I will argue in this paper, first that the above borrowing is pointless: that is, in a recession, GCB should simply create or “print” extra money and net spend it without funding this extra net expenditure from borrowing or tax.

I will also argue that if printing extra money and raising net spending by the same amount become the only or the main tool for regulating aggregate demand, this has two implications. First it Musgrave, (2018). *Full Reserve Banking*

implies abolishing monetary and fiscal policies as separate entities, and that in turn implies abolishing interest rate adjustments, since the latter is monetary policy pure and simple. And second, abolishing the distinction between monetary and fiscal policy implies a different relationship or split of responsibilities between central bank and government.

These two changes (merging fiscal and monetary policy and changing the role of central banks) do not involve any significant problems: in fact the results of these changes are entirely beneficial. In particular, merging monetary and fiscal policy disposes of a problem that is inherent in keeping the two policies separate, namely that the separation involves distorting the economy in numerous ways. Plus the new relationship dispenses with an illogical element in the current typical relationship, namely that both central bank and government can influence aggregate demand.

This paper says nothing new in the sense that it basically just advocates Abba Lerner's "money pump". However, some of the points made below are hopefully new, as follows. First, a couple of mistakes made by Lerner about interest rates are dealt with. Second, there are the above mentioned points about merging fiscal and monetary policy and the resulting change for central banks, and hopefully some of this is new.

I have written this paper with countries which issue their own currency in mind. The points made below obviously have implications for common currency areas, but these implications are not considered here.

The futility of "borrow and spend"

Governments borrow for various reasons, but the one that is relevant here is what might be called Keynesian "borrow and spend" with a view to stimulus.

The idea that government borrowing is pointless (for stimulus and other purposes) is not new. Friedman (1948) and Mosler (2010) advocated a "zero borrowing" regime.

I also advocated the idea (Musgrave, 2010). So I'll just summarise the arguments here rather than set them out in detail. The arguments are thus.

First, when GCB borrows, it borrows something (money) which GCB itself has created and which it can create in limitless amounts. Thus for a sovereign currency issuing country to borrow units of its currency is similar to, and as pointless as a dairy farmer buying milk in a shop.

Second, borrowing is deflationary. Given that the object of the exercise is the opposite of deflation, i.e. stimulus, it is hard to see the point of the borrowing. “Borrow and spend” is a bit like throwing a mixture of petrol and water on a fire.

Third, the extent of the above deflationary effect (i.e. crowding out) is uncertain. Crowding out would not matter if there were agreement on the extent of the problem. But there is a lack of agreement. Thus introducing crowding out first introduces uncertainty. Second, if crowding out is a serious problem - say 90% of borrow and spend is nullified by crowding out - the expansion in the national debt for given stimulus is likely to be much larger than the expansion in the monetary base required for the same stimulus. This large increase in the debt for given stimulus is hardly desirable, particularly in view of recent concerns about the size of national debts. Indeed, it is possible that the recent large increases in national debts combined with resulting increases in demand which have been scarcely enough to counter the recession, are explained by crowding out.

The alleged reasons for government borrowing

Keynes and Lerner both believed that extra government net spending was needed in a recession. As to the choice between funding this expenditure from borrowing versus printing, Keynes was on the face of it fairly indifferent between the two, while Lerner favoured printing.

As to whether Keynes was really indifferent as between the two options, there is some evidence that in public he favoured the borrowing option only because he regarded himself as being surrounded by economic illiterates under the illusion that creating extra money necessarily leads to inflation.

As distinct from borrowing for stimulus purposes, Lerner thought borrowing would still be desirable so as to control inflation. Lerner (1943) claimed that “The second law of Functional Finance is that the government should borrow money only if it is desirable that the public should have less money and more government bonds... This might be desirable if otherwise the rate of interest would be reduced too low... and thus induce too much investment, thus bringing about inflation.”

This argument contains a contradiction, as follows. Keynes, Lerner and indeed most economists agree that extra spending brings extra demand, which, if it goes too far, will cause excess inflation. Now if inflation really is a problem, then clearly raised interest rates may solve the problem. But why not just cut spending? In other words, to implement excess spending, and then

ameliorate the problem by raising interest rates is bizarre to put it politely.

The only possible justification for the above interest rate policy is that adjusting interest rates works more quickly than adjusting spending. Certainly interest rates can be adjusted at the flick of a switch, but that in itself does not influence the economy for a year or so. Thus what might be called “speed of implementation” is irrelevant: the important question is the lag between the decision to influence the economy and the actual effect on the economy. And there does not seem to be much difference between fiscal and monetary policy here. Thus the argument for using interest rate adjustments rather than spending adjustments to rein in excess demand looks weak.

A second argument that seems to have been put by Lerner for government borrowing is that this would enable governments to adjust interest rates and thus bring about the optimum amount of investment (according to Colander, 2002, p.2)). I take this to mean “optimum” in the sense of “optimum total amount of investment for purposes other than controlling inflation”.

This idea is just plain unrealistic. That is, the idea that politicians, bureaucrats or economists actually know what the optimum level of investment is, is laughable. Moreover, there are large uncertainties involved in any investment. Plus most investments involve large costs in addition to interest rate costs. Thus altering interest rates by a percentage point or two does not have a big influence on the amount that businesses invest.

Of course the difference between central banks’ base rate in a recession as compared to more normal times is more than “a percentage point or two”. But that is near irrelevant for households seeking a mortgage or for businesses, because it is primarily long term investments involved here, thus it is long term interest rates that are relevant. And long term rates do not vary by more than the above “percentage point or two”.

To summarise so far, hopefully it has been established that where stimulus is needed, GCB should simply net spend more, and do so without borrowing to cover that spending.

The next problem or set of problems to be considered are the distortions that result from separating fiscal and monetary policy.

Distortions

Before considering the specific ways in which different fiscal and monetary policies distort economies, a word about why distortions matter is in order.

There is nothing wrong with distorting an economy in the sense of making a permanent change where government has decided on that change (e.g. spending more on state education). These sorts of changes will raise unemployment while people shift from one sector of the economy to another. But that is unavoidable.

It is quite a different matter where a change or distortion is effected, only to be reversed a few months or years later, as is normally the case with anti-recessionary monetary or fiscal policies. The initial change has an unemployment raising effect; then a short time later the unemployment raising effect continues, as the change is reversed!

Various specific and distortionary anti-recessionary policies will now be examined.

Interest rate adjustments involve distortion

Adjusting interest rates is one of the main elements in monetary policy. But this distorts the economy in several ways, as follow.

- Constantly making artificial changes to interest rates must result in an interest rate which is not the free market rate most of the time.

The basic purpose of interest is to optimise the relationship between lenders and borrowers. That is, borrowers in their own opinion derive benefits from borrowing, while lenders undergo a cost, namely foregone consumption. If the latter cost and benefits can be equalised, at least at the margin, then the relevant economy will enjoy the optimum amount of lending and borrowing.

It is generally accepted that interfering with the free market is not justified unless market failure can be demonstrated, and secondly, it can be demonstrated that having the state make the relevant decisions results in a better outcome than the market.

Now there may well be specific instances of market failure when it comes to lending and borrowing, e.g. loan sharks or “No Income No Job or Assets” mortgages. But I know of no evidence that for the bulk of borrowing and lending, the market gets interest rates wrong. Thus artificial interferences with the rate of interest will result on a non-optimum amount borrowing.

ii) Interest rate adjustments work only via entities that are significantly reliant on variable rate borrowing. Thus for example, come an interest rate cut, a firm that is heavily reliant on variable rate borrowing will benefit, while firms that are in other respects identical except that they don’t rely on variable rate borrowing will not benefit. This constitutes a distortion. Given that the purpose of an interest rate cut is to boost the whole economy, not just parts of

the economy, interest rate cuts are clearly not a very good tool for the job.

iii) Even if every firm and household borrowed the same amount relative to turnover, interest rate adjustments would influence investment decisions in ways that are harmful, and for the following reasons.

If there were some evidence that at the start of recession, the total amount of investment was below optimum, then interest rate reductions at the start of a recession would make sense.

But unfortunately the evidence is that the amount of investment at the start of recessions is excessive, not deficient. This was certainly the case with the recent recession where ludicrous and unsustainable levels of investment in both residential and commercial property were one of the main roots of the problem (as mentioned at the outset above).

And not only was this obviously the case with the recent recession, but there are plenty of economists who argue that this “excess investment” is the norm just before recessions (e.g. [Huerta do Soto, 1998](#)). Thus dropping interest rates at the start of a recession is wholly illogical.

It is true that after two or three years of recession, the stock of capital equipment may fall to less than the level that would obtain at full employment. Indeed, America’s stock of capital equipment fell during part of the recent recession. But the latter point does not make the case for using interest rates to ameliorate recessions. That is, if an economy is two or three years into a recession, a straight rise in demand would induce employers to expand investment. So why it is necessary for politicians or central banks to give employers any sort of special incentive to invest is a mystery.

Or perhaps there is no mystery here. Perhaps it is simply that politicians, central bankers and economists seriously think they know better than the average business when and when not to invest. So far as most entrepreneurs are concerned, politicians, bankers and economists can take their views on investment, and feed them into the nearest shredder.

The above point can be put another way, as follows. Altering interest rates alters the amount that employers invest relative to turnover. Now where is the evidence that the latter ratio (investment to turnover) suddenly changes just because an economy is well into a recession rather than at the start of a recession or not in a recession at all? The very idea is a joke.

iv) Adjusting interest rates results in hot money flowing in or out of a country, which in turn changes the value of the country’s

currency on foreign exchange markets. And this in turn makes life difficult for exporters and importers.

Of course adjusting demand in a merged monetary and fiscal policy scenario would not leave the value of the relevant country's currency totally unaffected, but this is unavoidable. That is, where demand rises for any reason (e.g. increased consumer confidence), that will tend to draw in imports, which in turn will tend to reduce the price of the relevant country's currency. That effect is, to repeat, unavoidable.

v) It is precisely variations in demand for capital equipment which is one of the main causes of economic instability (via the accelerator). Thus trying to vary demand for capital equipment with a view to stabilising an economy is not a smart move.

Quantitative easing

Quantitative easing is a monetary policy. But its main effect is to increase asset prices, which in turn increases spending by the rich. But unfortunately, this is not an effective policy in that the propensity of the rich to change their spending habits when their income or assets change in value is significantly smaller than is the case for the poor. That is distortionary. In other words anti recessionary measures should be neutral as between rich, poor and all other groups. Or to put it a third way, altering the incomes of the rich relative to the incomes of the poor is a perfectly legitimate change to make. But it is illogical to use this sort of change as an anti-recessionary tool.

The distortions caused by fiscal policy

Some fiscal changes deliberately alter the structure or shape of an economy, and to that extent could be called distortionary, but are nevertheless justified. Examples include a decision to raise direct taxes at the expense of indirect taxes or to spend more on state education.

These types of changes are perfectly legitimate. But they are not of much relevance here. That is, there is no good reason, in attempting to combat a recession to concentrate, for example, on education.

In contrast, there are various fiscal changes much more suited to combating a recession precisely because they do not concentrate on particular sectors of the economy, and are thus not distortionary. Examples include cutting a payroll tax or cutting a sales tax. (The UK temporarily cut its sales tax (VAT) during the recent recession).

For example, cutting employees' contribution to a payroll tax affects every employee in the country. That of course leaves out various groups like pensioners and the unemployed. But it would not be difficult to alter the take home pay of both the latter groups at the same time as altering the take home pay of employees. Indeed, in the UK, pensioners pay is given a temporary boost in the middle of winter to help them pay heating costs (plus this varies with the severity of the winter).

However, even if fiscal policy is as non-distortionary as possible, using fiscal policy alone (i.e. without monetary policy) is still distortionary, and for the following reasons.

Where government spends more, and funds this with increased borrowing, this is pure fiscal policy. But the interest rate hike that ensues is itself distortionary, for reasons given above (unless you believe that the latter borrowing involves no crowding whatever).

The fundamental reason for distortions

If there was a significant tendency for people with brown hair to have more car accidents than people with black hair, there would have to be some explanation. Likewise, if there are several instances of fiscal or monetary policies when implemented in isolation having a distortionary effect, there must be some explanation. The explanation is quite simple and is as follows.

What is required in a recession is an OVERALL expansion in the economy. That is, the existence of a recession is not a reason to favour one sector of the economy above any other. Thus any policy which DOES favour some sectors more than others is ipso facto distortionary.

Moreover, what is required in a recession is an increase in aggregate demand, and effecting the latter involves boosting the source of all demand: that is, first, the consumer, and second government spending. In fact the latter (government spending) is essentially a form of consumer spending in the sense that consumers vote at election time to have part of their income confiscated by government and spent on various communal or public goods: maintaining law and order, state education, etc.

So in a recession, the aim should be to expand government spending and consumer spending by the same percentage.

A new relationship between central banks and governments

Under current or conventional arrangements, most central banks adjust interest rates or make other monetary adjustments, while governments make fiscal adjustments.

However, in a merged fiscal and monetary scenario, the two obviously cannot act independently. That is, when it is decided to raise government spending by \$X a year, that implies the creation of \$X of additional monetary base. The former is fiscal and the latter is monetary. What to do?

A possible way of effecting the above would be to have finance ministers and/or other politicians sitting in the same room as supposedly independent central bank staff when making changes to total government spending. But that probably involves having politicians too close to the printing press.

A solution to this problem is to have the central bank responsible for deciding whether inflation is subdued enough to allow more government net spending, while political parties and parliaments decide the obviously political questions, such as how GDP should be split as between public and private spending, and how the public portion should be spent.

The latter split of responsibilities as between governments and central banks is a perfectly logical division of labour. That is, the decision on how big a threat inflation poses is a technical one, and is best taken by technicians, that is economists. Of course economists' record in predicting inflation levels a year or two hence is far from perfect. But they are better at it than politicians. Plus economists have no motive to bias their forecasts, or ignore the forecasts and advocate more spending than they think is warranted by inflation.

In contrast, and as mentioned above, the decision as to how GDP should be split as between public and private spending is a purely political decision, as are decisions on the make-up of public spending. The latter sort of decision should be taken by politicians and the democratic process.

Indeed, this split of responsibilities makes more sense than current arrangements for the following reasons. Allowing governments to abstain from collecting enough tax and borrow instead is generally regarded as having a stimulatory effect. But central banks also take a position on the “stimulus / deflation” scale. So we have two organisations with a say on the stimulus/deflation question. This makes about as much sense as having a car with two steering wheels, each of which is controlled by a different person.

Put another way, while an independent central bank keeps politicians away from the money printing press in the narrowest sense of the word “money”, it does not keep politicians away from a slightly different type of printing press: the “debt printing press”. And this has proved a huge problem over the last decade or so: that

is, many countries' national debts have ballooned recently to record levels. The above re-arrangement of responsibilities as between governments and central banks would solve this problem.

Of course that is not to say that all of the above "ballooning debt" is wholly unjustified. For example if you believe that Keynesian "borrow and spend" works, and that it is the best option for stimulus purposes, then you will believe that part of the debt is justified (although one of the central claims of this paper is that there is a better option than Keynesian borrow and spend).

On the other hand a significant portion of many countries' current debt stems from attempts by politicians to ingratiate themselves with voters by borrowing as a substitute for tax. This form of borrowing is wholly unjustified, and the merged fiscal and monetary policy advocated here ought to prevent this form of borrowing.

Fiscal committees

Having claimed above that central banks alone should be responsible for the degree of stimulus or deflation applied to an economy, this is not to say that this decision absolutely has to be in the hands of central banks. The important point, as mentioned above, is that the decision is in the hands of experts who are independent of politicians. Whether those experts are part of a central bank or not is probably not too important.

Indeed committees or organisations which consist at least partially of such experts already exist in some countries in the form of so called fiscal committees. And in the US there is the Congressional Budget Office, though the latter is far too close to political parties to be called "independent" at the moment. And in the UK, there is the Office for Budget Responsibility.

However, the existence of THREE bodies, government, central bank AND a fiscal committee does not make sense. To repeat, there are just two types of decision and thus two bodies required. First there are the strictly political decisions, like the proportion of GDP devoted to public spending. And second, there is the technical decision, namely whether inflation is subdued enough to warrant more aggregate demand.

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4. Removing bank subsidies leads inexorably to full reserve banking

Definitions

Bank. The word bank is used here very much as per Oxford Dictionary of Economics. The latter starts its definition: “A financial institution whose main activities are borrowing and lending money. Banks borrow by accepting deposits from the general public or other financial institutions.”

Money. Likewise, the word “money” is used very much as per standard definitions, that is, the word is used to refer to anything widely accepted in payment for goods and services or in settlement of debts.

Full reserve banking. This is also known as 100% reserve or narrow banking. It is a system where only the central bank creates money. That is in contrast to the existing fractional reserve system under which commercial banks when making a loan do not need to obtain funds from depositors or others before making loans: commercial banks can simply credit borrowers’ accounts with money produced from thin air.

There are of course differences between central bank and commercial bank created money, so to that extent the above definition of full reserve banking over-simplifies things. However, both types of money fit the above definition of the word money.

Removing bank subsidies leads inexorably to full reserve banking

A fundamental and very simple principle that should underlie banking is that banking is a business like any other: it should make a profit or at least break even. That is, the normal assumption in economics is that resources are best allocated and GDP is maximised where market forces prevail, unless overriding social considerations or market failure can be demonstrated. And having “market forces prevail” means abiding by the latter “break even” condition. All the arguments and conclusions below flow that very simple and widely accepted principle.

The latter mode of argument, that is arguing FROM the proposition that businesses should at least break even TO full reserve is a robust form of argument for full reserve, because the latter “break even” idea is widely accepted.

The basic flaw in banking

There is a very simple and basic flaw which lies at the heart of banking as it has been practiced for centuries, and which breaks the latter principle. It is thus.

The value of the bulk of bank’s liabilities (deposits) are fixed in money unit terms (i.e. in terms of dollars, pounds, etc). In contrast, their assets (loans, investments, etc) vary significantly in value, and can and do fall disastrously in value from time to time. That happens when a bank makes a string of bad loans or investments: something that is guaranteed to happen sooner or later.

The latter large fall in value has happened over and again and has led to repeated bank failures throughout history. And that problem is currently solved by taxpayer backing, which amounts to a subsidy of the banking industry: the so called “too big to fail subsidy” (TBTF). But the latter subsidy contravenes the basic principle set out at the start above, namely that banks should not be subsidised. (As to the actual size of subsidies enjoyed by banks, there are numerous estimates. Haldane (2011a; 2011b) puts the subsidies at several times bank profits, which if true would make fractional reserve banks LUDICROUSLY uneconomic.)

Moreover, contravention of the “break even” principle is worse than might at first appear, and for five reasons.

1. There is the “lender of last resort” facility offered by central banks to commercial banks. Now if supposedly “commercial” banks have the luxury of lender of last resort, then every other business should have access to the same facility if there is to be an absence of bank subsidies or absence of preferential treatment for banks.

But even better would be no such facility at all. Reason is that funds for such a facility are inevitably funds withdrawn from the rest of the economy, that is from viable businesses (assuming constant GDP). Put another way, absent last resort largesse, the relevant funds would be available to be spent on goods and services provided by normal and viable businesses.

2. The lender of last resort facility is supposed to be on the basis of the principles set out by Walter Bagehot, namely that funds are available only at penalty rates and in exchange for first class collateral. In practice of course, lender of last resort has degenerated into almost the opposite: that is in the recent crises, banks have sometimes been offered loans at very favourable rates and on the basis of QUESTIONABLE collateral.

3. Bagehot did not even approve of central banks or of the lender of last resort facility. His point was that if central banks exist and offer a lender of last resort facility, it should be on the basis of penalty rates and first class collateral (see [Selgin 2010: 492](#)).

4. Another form of preferential treatment for banks is that in recent decades they have been allowed to publish balance sheets which are essentially works of fiction ([Peston, 2012](#), p.15-16): an activity which would result in severe penalties for the directors and/or accountants of any other business.

5. The main beneficiaries of bank bail outs and the TBTF subsidy are those with above average amounts of money deposited in banks. Thus those subsidies pretty much amount to the average taxpayer subsidising the rich: a policy devoid of social justice. Indeed that unjust policy has taken an even more extreme form over the last five years in the form of having ordinary taxpayers rescue not just rich depositors, but bond-holders as well! The latter policy caused extreme and justified resentment amongst the less well off in some Euro periphery countries, like Ireland.

The above points can be put another way and as follows. When someone invests DIRECT (for example in property or the stock exchange) and it goes wrong, they lose money, and quite right. On the other hand if they put their money into a bank and the bank invests in property or the stock exchange and it goes wrong, the depositor / investor is rescued by the taxpayer. Advocates of the existing banking system need to tell us what the justification is for the latter artificial assistance for banks and their customers. Of course those advocates cannot answer the latter question. In fact I know of no instances of them even asking the question, and if there are indeed no such instances or very few, that says something

about the tenuous grip on reality possessed by advocates of fractional reserve banking.

It follows from the above that the only system that completely dispenses with bank subsidies is one that makes it abundantly clear that under no circumstances will there be any taxpayer assistance for banks. And as to the idea that the current attempts at bank reform (Basel III, ICB, 2011), etc) actually achieve the latter “abundant clarity”, that is laughable.

As the governor of the Bank of England at the time of writing (King, 2010) put it, “Basel III on its own will not prevent another crisis..”. Plus there are more references below to the widespread scepticism about current attempts at reform. And we all know what will happen come the “next crisis”: taxpayers will come riding to the rescue. So current attempts at reform just don’t remove the TBTF subsidy or the spectacular billion dollar bailouts that will appear come the next crisis.

Instant access accounts should not earn interest

To summarise so far, the basic activity carried out by banks, namely, 1, taking deposits, 2, lending on or investing the relevant money, while 3, promising to return the exact sums deposited to depositors is nonsense, because it is almost guaranteed at some point to fail, which in turn makes bank subsidies necessary.

So the obvious conclusion would seem to be that banks should not lend on or invest depositors’ money. Indeed, if banks do not lend on such money, that money is then very near 100% safe, which in turn means no taxpayer exposure or taxpayer funded subsidy.

Or as King (2010) put it: “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.”

Moreover, where money is not lent on, it does not earn interest, thus depositors who want 100% safety cannot expect any interest (not that depositors get any significant interest anyway at the time of writing).

So called banks which simply accept deposits and do nothing with those deposits will henceforth be referred to as “depository banks”. (Incidentally, the obvious objection to the latter sort of system, namely that it would curtail bank lending and hinder economic growth, is dealt with in Section II below.)

Depositors who want interest must accept risk

As distinct from the above mentioned depositors who want 100% safety and accept that that means they get no interest, there are depositor / investors who want some sort of interest or dividend on their money. However it is a flagrant self-contradiction to ask for interest or a dividend AND for 100% safety. Reason is, as already intimated, that the only way interest can be earned is by lending on or investing money, and the very fact of doing that means the money is not 100% safe: the loans or investments can go wrong. (Of course some form of self-funding insurance, like FDIC in the US, can deal with the failure of a small bank. However, when it comes to systemic failure or the failure of an individual large bank, only the state can come to the rescue, and indeed, entire states have been near bankrupted in the recent crisis.)

Thus if the basic principle mentioned at the start above (namely that banks should pay their way) is to be observed, depositors who want interest must carry the loss when the underlying loans go wrong. And where the latter policy obtains, those depositors are little different to bank shareholders. Or put another way, such depositors are little different to those who buy into unit trusts (“mutual funds” in the US).

Indeed, Kotlikoff (2012; 2010), an advocate of full reserve, argues that where depositors want interest and are prepared to take the concomitant risk, they should SPECIFICALLY be offered a range of unit trusts to choose from.

Moreover, unit trusts, whether they are run by banks or not are essentially separate from banks. Certainly if the assets of an EXISTING unit trust run by a bank turned out to be worthless, that is not supposed to harm depositors, or bondholders or shareholders of the bank itself.

Indeed, there is much merit in making unit trusts run by banks fully open to or available to those who ARE NOT customers of the bank in question: it increases the independence of those trusts from the relevant banks still further. First that tests the value of the relevant units. Second, absent the latter “independence”, under a Kotlikoff system, it is 100% certain that banks would try to promise their existing customers that investments in their unit trusts were as good as cash and would try to maintain that fiction by restricting access to bank run unit trusts to existing bank customers. Commercial banks always want to get into the money creation or seignorage business, and the latter is one way of doing it. That is, absent any test of the real value of those unit trusts, banks might claim those trusts’ value was more than was really the case. And that would enable banks to turn unit trust units into a

form of quasi-money. Thus if full reserve were to be introduced along “Kotlikoff” lines, there are good reasons for having any unit trusts run by banks very much separate entities from banks themselves, just as is the case with unit trusts currently run by banks.

To summarise, there is a logical place for institutions that accept deposits, but do nothing with those deposits (depository banks). Plus there is a logical place for institutions which (like unit trusts) accept investors’ money, but do not promise to return any SPECIFIC SUM to such investors.

As to institutions which fall within the above Oxford Dictionary Definition of the word “bank”, there is no place for such institutions: at least not if the principle mentioned at the outset is to be obeyed, namely that commercial organisations should make a profit or at least break even.

In other words to use the phrase “ring fence” (a phrase popularised by Britain’s Independent Commission on Banking (ICB, 2011)), the fence should be between on the one hand, safe accounts and on the other hand, investment accounts or unit trusts or other investing / lending institutions.

Full reserve banks do not create money

Under fractional reserve, commercial banks can create money when they lend. That is, where a bank grants a loan which is not matched by any corresponding “loan reduction” or loan repayment, then money creation takes place. The latter process involves simply crediting the borrower’s account with money that comes from nowhere.

Now since depository banks do not lend, they do not create money. Thus such banks are essentially full reserve banks.

As to investing institutions like unit trusts, they do not create money either. That is, when someone invests £X in a unit trust for example, they lose £X and gain £X of units. That is different to where someone deposits £X in a traditional bank and their money is loaned on. In that case, both depositor and borrower hold £X: that is, £X is turned into £2X.

Bank failure is near impossible under full reserve

Under full reserve, and absent large scale and blatant criminality, it is impossible for depository banks to fail. As to investing institutions, they are not prone to the sort of sudden collapse or “run” that occurs with traditional or existing banks. Of course a significant fall in the value of unit trusts can take place. But that is not the same as a run on a traditional bank. A bank run

can start where there is just a SUSPICION that the bank is insolvent. And which TYPE OF insolvency is involved – cash flow insolvent, balance sheet insolvency, etc – does not matter too much.

In contrast, those who buy into unit trusts or similar investing entities DO NOT EXPECT to be able necessarily to withdraw exactly the sum that they invested. At worst, the value of unit trust falls. But that happens every time there is a stock market set-back, and stock market set-backs of themselves do not cause recessions.

Or as King (2010) put it, “And we saw in 1987 and again in the early 2000s, that a sharp fall in equity values did not cause the same damage as did the banking crisis. Equity markets provide a natural safety valveM”

The Werner system

There are of course variations on the full reserve theme. One was set out by Werner (2010). Under the latter system, those wanting their money invested rather than simply being lodged in a 100% safe manner, put their money into so called investment accounts for a specific and longish period, or they have to give a period of notice before withdrawing their money.

Under that system, if the average maturity of those deposits is less than the maturity of the relevant investments, then maturity transformation (MT) takes place, which in turn amounts to money creation. And there is no question but that MT involves risks. That is, it is precisely MT (i.e. “borrow short and lend long”) that has brought down hundreds of banks throughout history, Northern Rock being just a recent example. In short, MT necessitates bank subsidies.

So to ensure no risks of the latter sort arise, the above average maturities have to match. But even then it’s possible that the value of the relevant investments declines substantially, in which case the bank may not be able to repay depositors. Werner does advocate letting depositors choose how much risk they are prepared to accept (in exchange for a better or worse rate of interest or dividend). But if investors are not exposed to losing all their money, then someone carries the risk. And we all know who that is: the taxpayer.

Thus the Kotlikoff system seems preferable. Under the latter system, depositors are free to try to cash in their investment any time, but the risk is that that depresses the value of the relevant investments, which in turn dissuades others from cashing in. The Kotlikoff system certainly gives depositor / investors more flexibility.

For that reason, the Kotlikoff system will be assumed from now on.

Money market funds and checking facilities

In the U.S. there are so called “money market funds” which offer checking facilities and invest only in supposedly safe securities, which makes them compliant or very near compliant with the principles of full reserve.

Kotlikoff actually regards these funds as being “compliant”. But there are two problems with counting ANY FORM of investment (even if only in government securities) as “full reserve compliant”.

1. Financial institutions may bribe or cajole politicians and regulators into progressively accepting and counting ever more risky investments as being compliant.

The latter is not a problem at the moment because money market funds are run by risk averse individuals, while “riskphiles” work for investment banks. But if the activities of banks, investment banks included were to be more heavily regulated, there could be a movement of riskphiles, accompanied by smart lawyers, into the money market fund sector.

2. As to the government debt that money market funds invest in, that is far from entirely safe. Government securities even in well run countries rise and fall substantially in value. As to the idea that the debt of Eurozone periphery countries is safe at the time of writing, that is completely unrealistic. Indeed, one money market fund in the US failed during the recent crisis.

So much the best solution here is a clear line in the sand: “instant access or checking account money should never be invested in anything”.

The alternative (for those who want to invest in very safe securities) is to have unit trusts or similar investing institutions which (a la Kotlikoff) concentrate on such securities. But in that case the value of depositors’ stakes must be allowed to float (again a la Kotlikoff). Indeed the Financial Stability Oversight Council in the U.S. has realised this. See Wall Street Journal (2012).

A subsidy free fractional reserve system

Having argued that removing bank subsidies leads to full reserve, it could be argued that a subsidy free fractional reserve system would be possible. That is, it would be possible under a fractional reserve system for government to simply refuse to recompense depositors in the event of a bank failing (as indeed was the case in for example the US prior to the 1930s). But in that case,

Musgrave, (2018). *Full Reserve Banking*

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depositors become risk carriers, just as under the full reserve system advocated here: i.e. those depositors become very similar to bank shareholders. So that system comes to much the same as full reserve.

As to depositors who wanted 100% safety under the above “subsidy free fractional reserve” system, they would go for government provided savings accounts of some sort (e.g. National Savings and Investments in the UK). And that also amounts to the same thing as full reserve.

The alleged justifications for fractional reserve

What is wrong with improved capital ratios a la Basel?

The obvious alternative to the near 100% safe banks that full reserve brings is to retain fractional reserve and improve capital ratios and/or make sure bondholders bear some of the costs when a bank fails.

Indeed the latter sort of objective is very much what the ICB, Basel III and Frank-Dodd are all about. And certainly such legislation could in theory make banks near 100% safe. But there are several problems with the latter sort of legislation. I will set out the problems briefly, and then consider each in detail.

- ICB type legislation is complicated. 2. Because of the complexity, it is easy for banks to water down the legislation via lobbying. 3. Fractional reserve does give private banks freedom to influence stimulus, but it is largely governments nowadays that determine stimulus, plus banks tend to give stimulus a boost just when it is not needed. 4. Fractional reserve does give banks more freedom to boost lending given an increased number of viable lending opportunities. Unfortunately “viability” is normally code for “speculation”, and even where it is not, the latter boost to lending just boosts inflation.

Now for a more detailed consideration of those four points.

1. ICB or Basel type regulation is horrendously complicated.

Many economists are frustrated by this complexity, for example Haldane (2012) in his introduction, Kay (2009, p. 9-10), Mallaby (2012) and Rogoff (2012). The need for simplification is referred to in the preface of Kregel (2012).

In contrast, the basic rules of full reserve are just two in number and are simple. First, banks or other entities which hold money on behalf of depositors cannot invest or lend on that money if the depositor wants 100% safety and/or instant access to the money. Second, if the depositor is prepared to forego instant access and have their money invested or loaned on with a view to earning interest or a dividend, the depositor loses access to money, and Musgrave, (2018). *Full Reserve Banking*

instead holds an asset which is little different to a shareholding or a stake in the latter investments or loans.

Science awards top marks to the simple ideas that explain a lot, with $E=MC^2$ being a classic example. Conversely it is right to be suspicious of complex alleged solutions to problems.

2. Banks devote HUGE efforts to watering down bank regulations. For example in Britain, the finance industry spends £93 million a year on lobbying (Mathaison, 2012). A complex set of rules governing some reserve figure other than 100% is easy for banks to nibble away at. In contrast, 100% is a clear line in the sand.

In fact it is debatable as to how much “nibbling” banks would need to do since they seem to have ALREADY watered down ICB and Basel type legislation to near impotence. For example thanks to bank lobbying, the capital adequacy ratio suggested by Basel III (33:1) is no different to the ratio at Lehmans with it failed.

3. There is a popular argument to the effect that fractional reserve somehow absolves governments and central banks from creating money or providing stimulus: the “burden” so to speak is carried by private banks. For example Kregel (2012) in criticising the full reserve arguments put by Minsky (1995) says in reference to full reserve “This would be a system marked by a chronic tendency toward deflation, making it even more reliant on demand injections from the government.” (Wolf, 2012) made a similar point when he said “I cannot see why the right answer should be no leverage at all. An intermediary that can never fail is surely also far too safe.”

There are five answers to the above sort of point as follows.

i) Kregel & Co may not have noticed, but economies are heavily dependent on “demand injections from government” anyway! That is, come a recession, everyone looks to the central bank to reduce interest rates or for government to implement fiscal stimulus. (It is true that in the recent crisis, particularly in the UK, there have been calls for more bank lending. But that is unusual, and is a peculiarity of the recent crisis which was very much caused by banks. I.e. normally, when stimulus is required, everyone looks to monetary and/or fiscal policies for solutions.

ii) As to Kregel’s suggestion that banks can bring “injection”, they are certainly likely to do that from time to time under fractional reserve. But they are likely to do so in a boom: exactly when more injection is not needed! And of course the most dramatic recent example of that was the credit fuelled house price boom that preceded the recent crisis, followed by mega bank bail outs, followed by the worst recession since the 1930: hardly an

advertisement for letting banks influence stimulus. As the head of Britain's Financial Services Authority (Turner, 2012) put it, "The financial crisis of 2007/08 occurred because we failed to constrain the private financial system's creation of private credit and money."

iii) Given that we already have a system for effecting stimulus (monetary / fiscal policy), letting banks affect stimulus is clear prima facie case of duplication of effort. Or put it another way, on the face of it, it contravenes the Tinbergen principle. (The latter principle states, roughly speaking, that for each policy objective (e.g. effecting stimulus) one policy instrument and one only is required).

Thus the advocates of private bank effected stimulus need to tell us why this duplication of effort is justified. As far as I know it has never occurred to them that duplication of effort is involved, never mind justifying that duplication.

iv). As to Kregel's "deflation" point, that was dealt with above. To recap briefly, the answer to that point is that introducing full reserve probably has an initial deflationary effect, but that effect is easily dealt with by having government / central bank create and spend extra money into the economy. As to the word "chronic", that is just emotive rhetoric, which Kregel fails to substantiate.

v). In addition to the above mentioned EVIDENCE as to what happens when private banks influence stimulus, there is a theoretical flaw in the idea, as follows.

Economic expansion can be led either by a general increase in demand which of course results in some extra lending and investment. Or it can be led just by additional lending. However, there are no circumstances in which the latter makes sense. This however, this is a complicated point, and it is not possible to do the point full justice here. So what follows is brief and simplified version of the argument.

Let us take two scenarios: first where an economy is at capacity and second where it is operating at below capacity, and I'll consider the first one first.

If an economy is at capacity, and everything is in equilibrium (e.g. interest rates and investment are optimum) there is no reason for additional lending because the amount of lending is already optimum: extra lending will simply lead to excess demand and inflation. However, extra lending can very easily take place given excess bank reserves as explained by Selgin (2012). Plus extra lending can take place where interest rates are at their optimum or free market level as pointed out by Huber (2009: p.31). Huber's point is that most entities that borrow and lend have to pay interest

to those they borrow from, while in contrast, banks do not always do this. That is, banks can simply create money from thin air and lend it out, and that activity clearly has a stimulatory effect. So in a “Selgin” or “Huber” scenario, bank determined injection can occur when it is not needed. And of course that Selgin and Huber theory is backed by the evidence: the recent crisis.

Now let us take the second assumption, namely that an economy is operating at below capacity. In that scenario obviously extra demand is needed. But whence the assumption that ALL THAT DEMAND (or most of it) should come via extra lending rather than via a GENERAL or broad based rise in demand? There is absolutely no reason. At least there is no reason given the assumptions made above, namely that everything is optimum and that includes the assumption that lending and investment are optimum relative to GDP (a GDP which of course is sub-optimum).

Indeed, one work which advocates full reserve (Werner, 2010) specifically advocates that any additional demand should be broad based, and not concentrated on lending or investment.

vi) As for any idea that full reserve in making government entirely responsible for stimulus imposes some sort of “burden” on government or central bank, that is completely untrue in that creating new money costs nothing in real terms.

As Friedman (1960, Ch 3) put it, “It need cost society essentially nothing in real resources to provide the individual with the current services of an additional dollar in cash balances.” (Incidentally, that quote is from a book of Friedman’s which actually advocates full reserve banking.)

4. Another fallacious argument for fractional reserve is that if banks see more than the normal number of viable lending opportunities, they are free under fractional reserve to create new money and fund those opportunities, whereas under full reserve with its relatively fixed money supply, banks would be more restricted, and given the increased demand for loanable funds, interest rates would probably rise.

The first flaw in that argument is that when private banks see what they think is an increased number of viable lending opportunities, they are normally looking at a mirage. That is, so called “viability” consists of loans made with a view to stock market speculation, as was the case just prior to the 1929 crash. Alternatively there was the property speculation that preceded the recent crisis.

But let us suppose that banks see an increased number of GENUINELY viable lending opportunities, e.g. a spate of

technological improvements that call for increased investment. Under fractional reserve, banks would create and lend out new money, but unfortunately the effect would be stimulatory. And assuming the economy was already at capacity, the result would be excess inflation.

In contrast, under full reserve, the relatively inflexible supply of money would result in interest rates rising. That would reduce the extra investment spending a bit, plus it would induce extra saving, which would have a deflationary effect which would counter the stimulatory effect coming the extra investment spending. And the net result of that, ideally, would be no excess inflation.

So the answer to the above Kregel type point is that both the theory and the evidence is that when the banking system has the freedom to influence stimulus or “injection”, it is likely to effect it when it is not needed. Second, where stimulus IS NEEDED, but everything else is optimum, there is no reason for the bulk of such stimulus to be led by or to consist mainly of extra bank lending. Thus the above “Kregel” criticism of full reserve, namely that it is a system that is reliant on government for “injections” or stimulus does not stand inspection.

Idle money is a waste of resources?

As already pointed out, fractional reserve involves letting safe or instant access money be invested or loaned on, and that, according to the advocates of fractional reserve involves making full use of such money or “capital”.

The latter sort of idea lies at the heart of ICB thinking. To quote: “The economy would suffer if separation prevented retail deposits from financing household mortgages and some business investment.” And much the same point is made by Diamond (2008, Section III) and Kregel (2012). The flaw in that argument is as follows.

The amount of money in “retail deposits” is at its current size partly thanks to bank subsidies. That is, if a particular form of saving is made 100% safe thanks to taxpayer largesse, then there will be more of that type of saving. Secondly, the amount of that money that is currently invested is boosted by the same factor: the fact that those investments are underwritten by the taxpayer. That is, (to repeat) depositors can enjoy 100% certainty of getting their money back while enjoying the rewards of having their money put into less than 100% investments, and partially thanks taxpayers.

In other words the amount of lending and investment currently done via banks is artificially inflated because of taxpayer backing. Thus, far from “the economy suffering” when that subsidy is

withdrawn, the effect would be the OPPOSITE. Reason is (to repeat) that unless there is a good reason for a subsidy, GDP rises when a subsidy is withdrawn.

The ICB type argument amounts simply to saying “lending and/or investment are good, so the more of it we have the better”: clearly a nonsensical argument.

As to any deflationary effect that comes the decline in lending that would occur on implementing full reserve, that is easily countered by increasing the TOTAL AMOUNT OF MONEY, i.e. the total money supply. And doing that costs precisely and exactly nothing in real terms, as pointed out in the above Friedman quote. (Indeed, increasing the total stock of central bank money in the hands of private sector entities is inherent to full reserve.)

Full reserve reduces individual banks’ freedom to lend?

There is a variation on the “full reserve reduces lending” fallacy which is the claim that under full reserve, an INDIVIDUAL bank which sees more than the usual number of viable lending opportunities would not be able to increase its lending by the required amount.

There are four flaws in that point, as follows.

1. Regardless of what banking system prevails, there are limits to how fast an INDIVIDUAL commercial bank can expand its loan book relative to the rate at which other banks are expanding (as is widely appreciated). Reason is that any such relatively fast expansion results in the expanding bank losing reserves.

2. There are of course solutions to the latter problem. One is for the quickly expanding bank to go into partnership with other lending entities who have spare funds to lend. Indeed those sort of partnerships are already common when it comes to lending very large amounts.

An alternative is for the above “individual” bank or lending / investing institution to borrow from other lending institutions (inter-bank lending). And that again has been common practice for a long time. (The only difference would be that under full reserve, the lender would take a stake or shareholding in the borrowing entity.)

However, the outstanding example of a bank that relied heavily in inter-bank lending or wholesale money markets in the UK recently was Northern Rock, which went bust: not exactly a ringing endorsement for the idea that there is huge merit in allowing an individual bank to expand much faster than others.

3. Even if the amount of lending per bank or unit trust were somehow fixed, banks or other lending / investing institutions would just restrict lending to the MOST VIABLE borrowers, while turning down the borrowers of marginal viability. And the economy suffers very little when projects of marginal viability are stopped or delayed.

4. As regards INDIVIDUAL and particularly large loans, the relevant borrower is likely to be able to access the stock exchange or wholesale money markets.

Conclusion: the idea that banks' reduced freedom to lend is some sort of defect in full reserve does not stand inspection.

Political problems

Full reserve would be a big change from the current system, and as is often the case with big changes, that would probably result in protests from those adversely affected, while those who benefit would keep quiet.

In particular, those who think they have some sort of right to the combination of 100% safe bank accounts plus interest will object. However that is just “bread and circuses” all over again. Or as Samuel Brittan once correctly pointed out, implementing subsidies is easy, while removing them is difficult. The fact that the masses in Ancient Rome objected when free entertainment at the Colosseum was not up to scratch does not prove that free entertainment makes sense.

But sometimes we just have to bow to political forces, and the solution here might be to allow every citizen some sort of account at an institution like National Savings and Investments (NSI) which operates in Britain. NSI offers deposit accounts which are “too good to be true”: that is they offer a combination of interest and inflation proofing that commercial banks cannot match. As a result, the amount that can be invested per person in those accounts is limited. And the idea that everyone is entitled to a “too good to be true” account, while the amount deposited per person is limited, would probably have political appeal.

Incidentally, there would be no need under the above NSI idea for everyone to open their own NSI account. That is, a rule could be implemented under which commercial banks paid interest to depositors with safe accounts up to the above mentioned limit, and obtained the money for interest from NSI (i.e. government). As to whether there would be any point in commercial banks lodging the capital sums involved with NSI, there would be little point. Reason is that under full reserve, money in safe accounts is effectively lodged at the central bank anyway.

Fine tuning under full reserve would not be perfect?

There are two traditional methods of fine tuning: fiscal and monetary, with interest rate adjustment being the main monetary tool. If commercial banks are barred from lending money into existence, that rather rules out interest rate adjustments as a demand regulating tool, since those rate adjustments work VIA commercial banks.

As to fiscal fine tuning, that would still be possible under full reserve. Indeed, some advocates of full reserve (e.g. Werner, 2010) advocate that fine tuning should be done simply by having the government / central bank machine print and spend money into the economy as required (or do the reverse: raise taxes and withdraw money from the economy when inflation looms).

And the criticism has been made (e.g. by Keen, 2012) that that method of fine tuning is not perfect or reliable (which is not to suggest that Keen is a strong opponent of full reserve: he is moderately sympathetic).

Well the simple answer to that is that the above traditional methods of fine tuning (fiscal and monetary) have well known defects, to put it politely. To put it less politely, those traditional methods have led to a disaster: the recent crisis. Thus the above Keen type criticism is hardly a crucial weakness in full reserve. Moreover, interest rate adjustments have numerous and glaring defects – set out below.

Funding banks via equity is expensive?

As already pointed out, under full reserve, depositors who want their money loaned on or invested become similar in nature to shareholders.

And funding via shareholders is more expensive for banks than via depositors. Thus assuming that the “lending on” or “investing” part of banks is still classified as banking, then banks’ funding might seem to become more expensive under full reserve. The flaw in that argument is as follows.

Those supplying equity carry the risk of losing some or all the capital they have supplied, and charge for the service provided. However, if the total amount of equity funding relative to other forms of funding for a bank rises, there is no effect on the total amount of risk. That is, the risk per dollar of equity declines. Thus there is no reason to think that the total charge made by, or reward required by suppliers of equity will change. Indeed there is empirical evidence to support that point – see Miles (2011).

Taking the above point to the extreme, if (as under full reserve) depositors accept risk and become little different to shareholders,

there would still be no OVERALL increase in the cost of funding the relevant bank. So the above “extra cost of funding” criticism of full reserve does not stand inspection (all of which is very roughly a re-statement of the Modigliani-Miller theory).

The alleged shadow bank problem

A criticism that is sometimes made of full reserve (e.g. by [Goodhart, 2009](#)) is that if the larger banks are forced to obey the rules of full reserve, that will result in shadow banks filling the void. That is, shadow banks will up their fractional reserve or money creation activities. A similar claim is made by [Diamond \(2008: p.65\)](#). In fact this is not much of a problem and for the following four reasons.

1. It is absurd to implement bank regulations, and then regulate just those institutions which have the word “bank” emblazoned over their front door, while ignoring relatively large institutions which effectively ARE BANKS, but do not actually call themselves such. As [Turner \(2012b\)](#) put it, "If it looks like a bank and quacks like a bank, it has got to be subject to bank-like safe-guards." Moreover, regulators worldwide seem to have realised that shadow banks should be regulated ([Masters, 2012](#)). Thus it will be assumed from now on that while there may be some small shadow banks that the authorities fail to regulate, the larger shadow banks ARE REGULATED.

2. While the shadow banking industry AS A WHOLE may easily pose systemic risks, regulating the larger shadow banks probably disposes of that risk. Put another way, governments can probably ignore small shadow banks, and better still make it abundantly clear that under no circumstances will they mount any sort of rescue of such banks. Thus taxpayers needn't be on the hook for anything here: there needn't be any subsidy involved.

3. There is a problem for small shadow banks if they want to get into the money creation business, and as follows.

Creating money involves persuading as many players as possible to accept and use one's liabilities as money. And that's an activity where size definitely pays. To illustrate (and taking the “very small” end of the scale) any individual person can create money in that they can pay for goods or services with an uncrossed cheque, and the payee can endorse the cheque and pass it to a third party. And the third party can pass it to a fourth, etc. That's all perfectly legal, and the uncrossed cheque is then in effect a form of money.

But that form of money is almost unheard of. It is extremely cumbersome and just cannot compete with a well-run form of money supplied by the state or by the commercial banking system.

Same goes for small shadow banks. They will have no problem pursuing their basic activity: connecting large borrowers with large lenders. But that process does not create money: it does not amount to fractional reserve. In contrast, it is much harder for a small shadow bank to persuade a significant proportion of actors in the economy to accept its liabilities and pass them from hand to hand. Or as Minsky (1986, p.228) put it, “everyone can create money; the problem is to get it accepted”.

Of course in the world’s financial centres, numerous small shadow banks will be well known to those working in those centres, and that small group of people may well treat a small shadow bank’s liabilities as money. But then all sorts of strange bits of paper get treated as Money in the world’s financial centres: government debt is often accepted in lieu of cash in those centres. But that is a small proportion of the total amount of money in circulation, thus it would not seriously degrade an attempt to switch to full reserve.

4. If small shadow banks do collapse in significant numbers, there is no reason in principle why government and central bank between them cannot make up for the deflationary effect of that by printing and spending new money into the economy, though clearly getting the timing and quantity of new money exactly right is not easy.

Is interest rate instability a problem?

A criticism sometimes made of full reserve is that it brings interest rate instability, as indeed it does. Reason is that given a relatively stable money supply, and an increased desire to borrow money, interest rates rise. That is in contrast to the current system where central banks control or try to control interest rates. Central banks success in that endeavour is questionable, as is shown below, but certainly central banks have a finite effect on interest rates. But the latter “interest rate instability” criticism is not a strong one, and for the following reasons.

One of the main causes of the recent crisis was that there was an increased demand for funds to borrow and invest in property, yet no significant interest rate increase came about as a result because central banks were using their usual tool to control demand, that is interest rates, and neither demand nor inflation were excessive, so central banks saw no reason to raise interest rates.

In contrast, had interest rates responded to market forces, interest rates would have risen, which would have dampened the speculation at least to some extent. As to any undesirable deflationary effect that would have had, governments could easily have compensated with fiscal stimulus.

And there is actually a very long list of defects in interest rate adjustments as a tool for controlling demand or inflation and as follows.

First, several reasons are given in Werner (2010), and in the various works referred to in that work. But there are further weaknesses in interest rate adjustments as follows.

1. Adjusting interest rates is distortionary. That is, an interest rate change works only via households or firms which are significantly reliant on variable rate loans: i.e. those reliant on FIXED rate loans or not reliant on loans at all are not affected by an interest rate change. Thus this policy makes no more sense than boosting an economy only via people with black hair, with blondes, red-heads, etc waiting for a trickle-down effect.

2. The idea that there is a close relationship between interest rates and the ACTUAL availability of credit is an idea that is hardly supported by events over the last two years or so. That is rates have been at record low levels, but banks have been reluctant to lend.

3. An interest rate reduction tends to cause asset price bubbles. In contrast, a straightforward change in government net spending has less of a “bubble blowing” effect. That is, if the additional net spending is directed at a cross section of the population (not just the wealthy), there will not be a significant asset bubble effect.

4. The optimum price for borrowed money (i.e. the optimum rate of interest) is determined by the same sort of factors that determine the optimum price for concrete, steel or any other commodity: supply and demand. That is, the rate of interest is optimised when the marginal disutility of forgone consumption by savers equals the marginal utility or marginal benefit that derives from borrowing (which in the case of borrowing which is used to fund investment, equals the benefit derived from investments.)

If government interferes with this free market rate of interest, then the total amount invested will not be optimum. GDP will not be maximised.

5. Low interest rates allegedly encourage investment. Unfortunately

those making investments look at LONG TERM rates, not the fact that the central bank has recently cut rates and will probably raise them again in two years' time. And that applies both to firms which invest and people who borrow with a view to buying houses. While most people will not buy a house just because interest rates have dropped for a couple of years, there ARE those who are attracted by temporarily reduced rates, for example the so called "No Income No Job or Assets" mortgagors. So in that the "low interest rates encourages investment" argument DOES WORK, it works to a significant extent by encouraging irresponsibility: not a good argument for interest rate adjustment.

6. The idea that reduced interest rates encourage investment is of questionable benefit given the fact that in a recession,(certainly in SHORT recessions or the initial stages of a longer recession) there is more than the usual amount of capital equipment lying idle! Of course it takes TIME to manufacture or create real investments like machinery or factories, and assuming an economy will return to trend growth shortly after a recession, employers need to make sure they are not SHORT of capital equipment after a recession. But employers do not need governments to tell them this. Nor will small inducements like 2% changes in interest rates do much to optimise any given employer's investment strategy.

7. Radcliffe Report on monetary policy in the U.K. published in 1960 concluded that 'there can be no reliance on interest rate policy as a major short-term stabiliser of demand'.

8. There seems to be no relationship between base rates and rates charge by credit card operators. See UK CreditCards (2009). Indeed there even seems to be an INVERSE relationship in that in 2011 when central bank rates were at a record low, credit cards rates were at a record high (Insley, 2011).

9. Keynes said, "I am now somewhat skeptical of the success of a merely monetary policy directed towards influencing the rate of interest... it seems likely that the fluctuations in the market estimation of the marginal efficiency of different types of capital... will be too great to be offset by any practicable changes in the rate of interest." Keynes's General Theory – near the end of Ch 12.

10. It is sometimes argued that monetary policy (interest rate adjustments at any rate) can be made quickly, i.e. fiscal changes take longer to implement. That point is irrelevant. The IMPORTANT question is TOTAL TIME LAG between the decision to implement a policy and the actual effect.

11. Where government borrows, some of the money is inevitably lent by foreigners. But there is a problem there, which is

that money flowing into a country from abroad temporarily boosts living standards in the country. And that standard of living boost will be reversed if and when the money is repaid.

Now those standard of living “gyrations”, have nothing to do with solving the basic problem, namely raising employment. The gyrations are an unnecessary and complicating factor. Plus, the temporary boost to living standards poses big temptations for politicians: it enables them to raise living standards while in office, while the mess is left for their successors to sort out.

A further point in connection with “foreign” effects is that the effect of interest rate adjustments is hindered by foreign currency movements. That is, a rise in interest rates designed to damp down an overheated economy draws foreign capital into the relevant country, which reduces the desired effect. In contrast, a straight cut in government spending has the opposite effect, if anything, on internationally mobile capital. That is, given a cut in demand in a particular country, capital will tend to leave the country in search of better opportunities elsewhere.

12. There is disagreement amongst economists as to how effective monetary and fiscal policies are. That little problem can be solved by doing both policies at once. If one policy is much more effective than another, it doesn’t matter: the COMBINATION is almost guaranteed to work.

Conclusion: the list of defects in interest rate adjustments as a regulatory tool is a long one.

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5. A new justification for full reserve banking?

Introduction

Full reserve banking is name for a bank system under which, to over-simplify, private/commercial banks cannot issue money: that is, all money is issued by **central** banks. Other phrases used to describe that system include “100% reserves”, “Sovereign Money” and “narrow banking”.

The latter description of full reserve banking is “over-simple” in that there is no sharp dividing line between money and nonmoney: almost anything can be used as money. To stretch the point, anyone can try using bottles of whiskey as money. Quite possibly using bottles of whiskey to pay for other goods should be classified as barter, but let’s overlook that technicality: the important point is that even where privately issued money is banned under full reserve, there will still be a number of assets which arguably count as money.

However, there is an important distinction between those “other assets” on the one hand, and what counts as money when it comes to the monetary aggregates which most countries periodically publish, which in turn is the same as what is counted as money in this paper. That is, in this paper, only assets which are government or taxpayer backed are counted as money. To illustrate, \$100 bills are guaranteed by the US government not to lose value (inflation apart). The same cannot be said of other strange bits of paper circulating on Wall Street which may serve the purpose of money.

As to money issued by commercial banks under the existing bank system, that is also guaranteed by governments via deposit insurance.

One justification for banning commercial bank issued money is that it is precisely the fact of issuing that money that makes those banks fragile, as suggested by Diamond (1999) in his abstract. To put that more bluntly, it is precisely the fact of letting private banks issue money that explains the 2007/8 bank

crises and most other bank failures throughout history. It is true that other factors like house price bubbles, liar loans and excessive private debt are often cited as being the cause or contributory cause of bank failures. But as Kotlikoff (2018) rightly argues, those other factors are only *contributory* factors: they are not the root cause of the problem.

The reason why letting private banks issue money makes them vulnerable is that money by its very nature is a *short term* liability of a bank: that is, where someone has money deposited in a bank, (i.e. they have opened a normal instant access / checking / current account) the bank is obliged to pay that money or some of it back to the depositor instantaneously if the depositor so wishes. Alternatively there are deposit / term accounts available at most banks, but much the same applies: the bank is obliged to repay relevant monies within a month or two where the money is in a one or two month term account. In contrast, banks make relatively *long term* loans. That is, banks engage in “borrow short and lend long” or “maturity transformation” to use the jargon.

But that activity is clearly risky: if too many of those a bank has borrowed from (i.e. depositors) withdraw their deposits, the bank may be in trouble, since it cannot demand money back from those it has granted long term loans to (e.g. mortgagors).

Full reserve solves that problem by insisting that bank loans are funded only by *shares* in the bank, or by something that amounts to shares, e.g. stakes in a mutual fund / unit trust which specialises in granting mortgages. Under that sort of regime, if a bank or mutual fund makes silly loans and the value of its stock of loans drops to say 80% of book value, all that happens is that the shares or mutual fund stakes falls to about 80% of book value. That is, the bank or mutual fund does not go bust: its liabilities do not exceed the value of its assets.

As Selgin (1988) put it, “For a balance sheet without debt liabilities, insolvency is ruled out...”. (Incidentally, that was an aside made by Selgin: his book did not actually advocate full reserve).

Full reserve is advocated for example by Cochrane (2013), Dyson (2012), Dyson (2016), Fisher (1936), Friedman (1960), Klein (2013), Kotlikoff (2012), Mellor (2016) and Werner (2011).

Re the central claim of this paper, namely that advocates of full reserve do not seem to have grasped the importance of the distinction between bank customers who are into commerce and those who are not, I have actually searched for the words “commerce” and “commercial” in the latter eight works. While those words obviously appear quite frequently, there is no reference to the distinction between “commercial bank customers” and non-commercial ones, with one exception. That is Dyson (2016). Dyson does briefly allude to the fact that ordinary bank depositors are protected by taxpayer backed deposit insurance, but that’s all. That is in his paragraph starting “The deposits created by banks...”.

But Dyson does not actually say that it is not the job of taxpayers to stand behind what is clearly a form of commerce, namely depositors seeking to have their bank lend on their money for them.

As for other words that might be used in place of “commercial” or derivatives of that word, it is not clear what those might be. Thus it very much looks like those who have advocated full reserve to date do not realize how crucial the distinction between commercial and non-commercial depositors is to the debate over full reserve. At the very least, that distinction seems to be underappreciated in the literature.

Would a partial ban on private money do?

Having suggested above that having bank loans funded via equity rather than deposits stops banks going bust, there is a weakness in that idea, namely that as argued by Wolf (2017) and Admati (2013) it is not actually necessary to totally ban the issue of private money in order to make banks safe. That is, as they argue, it is probably not necessary to raise the capital ratio of banks (or rather banks’ “lending departments”) to the 100% level: around 20% would probably do.

Given that Cochrane tends to stress the idea that avoiding bank failures is the main justification for full reserve, that is clearly a weakness in the Cochrane style “avoiding bank failures justifies full reserve” argument.

Private money creation equals a subsidy of private banks.

There is however another reason for a total ban on commercial bank issued money, which is that money creation by those banks amounts to, or inevitably results in a subsidy of those banks. One

of those subsidies is the well-known “too big to fail” subsidy. That is, banks for reasons given above are prone to failure, but a series of large bank failures cannot possibly be allowed, thus those banks are effectively backed by the state, which amounts to a subsidy. Therefore some sort system where no subsidy is involved must be found, and full reserve meets that need.

Another form of subsidy was explained by Huber (2000, p.31), and that is that letting private banks create or “print” Money amounts to a subsidy of those banks.

As Huber puts it,

“Allowing banks to create new money out of nothing enables them to cream off a special profit. They lend the money to their customers at the full rate of interest, without having to pay any interest on it themselves. So their profit on this part of their business is not, say, 9% credit-interest less 4% debit-interest = 5% normal profit; it is 9% credit-interest less 0% debit-interest = 9% profit = 5% normal profit plus 4% additional special profit. This additional special profit is hidden from bank customers and the public, partly because most people do not know how the system works, and partly because bank balance sheets do not show that some of their loan funding comes from money the banks have created for the purpose and some from already existing money which they have had to borrow at interest.”

Put another way, private banks manage to get the profits from seigniorage to subsidise their money lending business.

Obviously commercial banks do not make a 9% profit (using Huber’s figures) on loans funded by freshly created money and a 5% profit on loans funded by deposits, bonds and so on. That is, banks no doubt use their freedom to create a certain amount of new money every year to increase their profits on **all their** loans (and/or cut the rate of interest charged on those loans). Huber’s point certainly ties up with the point made by Selgin (2012) in his opening paragraphs, namely that if commercial banks are allowed to create money in an economy which had previously just used base money (i.e. central bank created money), commercial banks manage to rob those holding base money (not that Selgin actually advocates full reserve in that work of his).

Taxpayers should not back commerce

There is a widely accepted principle that it is not the job of taxpayers to bail out commercial ventures which fail. But in the case of banks, it is clear that people who deposit money at banks with the intention of those banks lend on that money so as to earn interest are into commerce. They are into commerce in exactly the

same way as where they deposit money with a stock-broker, mutual fund or private pension scheme with the same end in view: that is, that the money is loaned on or invested so as to earn interest or dividends. Another example of money lending which comes to the same thing as depositing money at a bank is buying bonds in a non-bank corporation. Indeed, putting money into a two month term account at a bank comes to exactly the same thing as buying bonds which have two months till maturity in a non-bank corporation.

Depositors' intention that banks lend on their money is indisputable in the case of term accounts, but even in the case of instant access accounts, depositors (quite understandably) place their money whenever possible, with banks that pay interest on instant access accounts as well, or at least use interest to defray the costs of administering those accounts.

But for some strange reason, governments offer taxpayer backed deposit insurance for those "commercial" bank depositors, but not for those who place money with mutual funds, stock-brokers and so on. That is a blatant inconsistency. To illustrate the inconsistency in the starkest possible way, if you lend to a non-bank corporation by buying its bonds, there is no taxpayer backed insurance for you, but if you deposit money at a bank (i.e. lend to a bank) and the bank lends to non-bank corporations (which most banks do) then you're protected by taxpayer backed insurance!

Moreover, in going for the former option, i.e. buying a non-bank corporation's bonds you are cutting out middlemen, i.e. banks. Or should I say, you are cutting out a bunch of recession causing middlemen who have repeatedly been found breaking the law. You'd think that if government is going to interfere in any way here, it would actually *reward* those who cut out the middleman, rather than assist those middlemen, which is what governments do at the moment.

There is however a simple solution to that inconsistency, which is to draw a sharp distinction between depositors who wish in effect to be money lenders and those who do not. That is, it would be perfectly feasible to have two categories of bank account. First there could be accounts for "commercial depositors" where there is no deposit insurance, and second there could be totally safe accounts for those who want safe accounts, where money is not loaned on and where money is totally safe. Note that under that system, "commercial depositors" in effect become shareholders in the bank in that if the loans made by the bank turn out to be incompetent, then the commercial depositors bear the cost.

But the latter “two types of account” system is exactly what full reserve has always consisted of! For example, as Fisher (1936) put it, “This means that in practice each commercial bank would be split into two departments, one a warehouse for money, the checking department, and the other the money lending department....”.

Incidentally, it might possibly be argued that if “commercialness” is the guiding principle here, employers should not have a right to safe accounts since they are by definition into commerce, while individual people **should have** that right and on the grounds that having a totally safe way of storing and transferring money is a basic human right. On the other hand most advocates of full reserve seem to assume that employers should be able to make use of safe accounts.

There is certainly a debate to be had on that point. However that is a relatively minor point which will not be considered any further here.

Another incidental point is that clearly there are a plenty of objections that have been raised to full reserve, but I will not deal with any of them here because I dealt with lots of them in section 2 of Musgrave (2018).

Note that there is actually a more recent edition of Musgrave (2018) about to be published by “KSP Books” at the time of writing, and the layout and presentation will probably be a bit better than what you will find at the relevant link given in the references section below. However, the latter section 2 in the 2018 version of the book is actually the same as the version in the earlier edition, so you won’t miss much by looking at the earlier version.

What’s wrong with deposit insurance if it pays for itself?

In the US, the deposit insurance system, the Federal Deposit Insurance Corporation (FDIC) is self-funding. That is, it charges banks an insurance premium which varies with the perceived riskiness of those banks. And that raises an obvious possible objection to abolishing deposit insurance, namely that if something is commercially viable, it is arguably not obvious what is wrong with it.

The answer to that is that the FDIC is what might be called a “Rolls Royce” insurer in that it is backed by the US taxpayer. That is, everyone knows that if the FDIC fails, the US taxpayer will be forced to bail it out. In other words the FDIC is not a normal commercial insurer.

Second, the FDIC only caters for small and medium size banks. In other words when *large* banks fail or seem to be in trouble, it is the Fed which comes to the rescue, and the trillion or so dollars worth of loans granted by the Fed in the recent crises were most certainly not at the “penalty rates” advocated by Walter Bagehot. They were not even at anything which might be remotely called a “commercially viable” rate. They were at a near zero rate!

In short, the US deposit insurance system **as a whole** is not commercially viable.

Another problem with the “commercially viable” excuse for deposit insurance, is that if that excuse is accepted, then the same argument can be applied to having taxpayer backed insurance for those put money in to mutual funds, private pension funds and the other modes of saving mentioned above.

Moreover, the excuse often given for deposit insurance, namely that it encourages lending and thus increases investment can perfectly well be applied to the latter mutual funds etc and can even be extended to stock exchange quoted shares.

So there is clearly a problem in knowing where to draw the line here. The basic argument of this paper is that there is a very clear natural dividing line between commercial and noncommercial activities, and that is where the line should be drawn.

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ISBN: 978-605-2132-86-9 (e-Book)
 KSP Books 2018
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Under the existing bank system, it is not just central banks and governments which create money: commercial banks do so as well. Many leading economists, including at least five Nobel laureate economists, have had doubts as to whether commercial banks should be allowed to do that. Indeed one of those Nobel laureates, Maurice Allais, described money creation by commercial banks as counterfeiting.

“Full reserve” and “100% reserve” are names given to bank systems where commercial banks are not allowed to create or “print” money, or at least where that money creation is curtailed. Other names include “Sovereign Money” and “Vollgeld”.

The arguments for and against full reserve are complicated. One of the best arguments for full reserve, put by Joseph Huber among others, is that letting commercial banks create money amounts to a subsidy of those banks: clearly a money lender (and that is what commercial banks are) which can simply create the money it lends out is in a better position than a money lender who has to obtain money the same way every household and non-bank firm obtains money: earning it or borrowing it.

Put another way, there is no obvious reason why money lenders should enjoy the luxury of being able to print money, while garages, restaurants, etc cannot. The only reason why commercial banks can create money so easily is that money creation merges seamlessly with what they do anyway, namely grant loans. Another important argument for full reserve (set out in detail in Ch 5 below) is that banks, in that they accept deposits and lend on depositors' money are essentially no different other investment intermediaries like stockbrokers, unit trusts, mutual funds, private pension schemes etc. But for some strange reason, those who place money with banks enjoy taxpayer backed deposit insurance, while those who deposit money at other investment intermediaries do not. That clearly amounts to preferential treatment for banks, a form of preferential treatment which should be abolished.

The chapters below consist of a series of working papers written by the author and related in some way to full reserve. Those working papers were published by the Munich Personal RePEc Archive between 2011 and 2018 inclusive. In contrast, the author's most recent and full treatment of full reserve is in a KSP book entitled “The solution is full reserve / 100% reserve banking.” That is the 3rd edition of that book.

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KSP Books

e-ISBN

978-605-2132-86-9

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