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# Full Reserve Banking: More ‘Crank’ than ‘Brave Heretic’

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## 1. Introduction

A range of proposals have come forth for reform to the banking system under which money would only be issued by the central bank, or deposits in clearing bank accounts would have to be fully backed by reserves of central bank money held by commercial banks. Some of these proposals, like Benes and Kumhof (2012), trace their ideas back to the ‘Chicago plan’ of the 1930s and earlier (e.g. Soddy, 1926, 1934; Fisher, 1935, 1936).<sup>1</sup> Other proposals have been advanced in conjunction with means of achieving sustainable (often zero or low) economic growth and a steady state economy. These proposals have been presented under different labels, including 100 percent reserve banking, ‘Positive Money’, and sovereign money. Despite some differences, they share sufficient commonalities to be grouped together under the term of full reserve banking (hereafter FRB) proposals.<sup>2</sup> Writings in this group include Dyson *et alia* (2011), Ryan-Collins *et alia* (2011), Jackson and Dyson (2012), Positive Money (2012), and Farley *et alia* (2013).<sup>3</sup> FRB proposals have also gathered some political support featuring in the election manifesto of the Green Party of England and Wales (Green Party, 2015), and have being the subject of a report commissioned by the Prime Minister of Iceland (Sigurjonsson, 2015). The FRB proposals are the focus of this paper, while primarily for reasons of space the proposals arising from the ‘Chicago plan’ tradition will not be considered further.

The rest of the paper is organized as follows. Section 2 draws on the Post Keynesian and monetary circuitist (hereafter circuitist) literature on endogenous money in order to discuss a number of controversial statements made by FRB advocates. Section 3 considers the sources

of financial instability in modern capitalist economies, and argues that a FRB system would do little to reduce instability, and is likely to exacerbate it. Section 4 examines FRB arrangements and contends that they would soon be undermined by the powerful incentives for banks, non-bank financial intermediaries and the shadow banking to create near moneys. Section 5 considers the relationship between the creation of money and budget deficits in a FRB world, and argues that FRB will nullify the automatic stabilisers of fiscal policy and lead to a dominance of monetary policy and unelected central bankers over fiscal policy and democratic decision making. The final section offers some concluding comments.

## **2. FRB and Endogenous Money: Disregard the theory but at your own peril!**

Much of the advocacy of FRB starts from the observation that around 97 per cent of money in a modern economy is created by commercial banks, with only the remaining 3 per cent is created by the national central bank. This observation is usually followed by some outrage that it is private banks rather than the publically owned central bank which creates money.

Today, almost all of the money used by people and businesses across the world is created not by the state or central banks, but by the private banking sector. ... Allowing money to be created in this way affect us all [and] ... is the reason we have such a pronounced and destructive cycle of boom and bust, and it is the reason that individuals, businesses and governments are overburden with debt (Jackson and Dyson, 2012, pp. 21-22).

[C]ommercial banks create new money (in the sense of money in bank accounts) whenever they make loans, and that money disappears when the loan is paid back. ... We believe that the time has come to recognise that the creation of currency and the control of the money supply is far too important to be left to profit-seeking private sector banks ... Commercial banks should be no more than the custodians of publicly created money in current accounts (Green Party, 2015, p. 47)

As is exemplified in these quotes, most of the support for FRB is based on a descriptive or positive analysis of the current monetary system, where it is argued that: (i) commercial banks create deposits in the process of their lending activity, and (ii) transferable bank deposits are the major part of what is regarded as money. This positive analysis of the current system brings advocate of FRB close to the endogenous money theory of Post Keynesians and circuitists.<sup>4</sup> The positive analysis is then closely followed by a normative monetary analysis, which is

critical of present arrangements and argues that the money supply should be determined by the central bank and used in order to control the rate of inflation. This suggestion closely ties the normative analysis of FRB to the now discredited exogenous money theory of Monetarists.<sup>5</sup>

A much more serious problem for advocates of FRB is the disregard of established theoretical literatures when proposing their endogenous money positive analysis of modern monetary systems. Whilst they appear to recognise the endogeneity of the money supply process, advocates of FRB seem unaware of, or at least utterly indifferent to, the work of Post Keynesian and circuitist economists that have proposed an analysis of the nature and origin of money in a capitalist economy, which explicitly acknowledges and attempts to explain the endogeneity of the money supply process. As a result of it, supporters of the FRB succumb to a number of contradictory statements and analytical errors, including the following:

(1) As a result of their lending activities, commercial banks are endowed with a seigniorage privilege. This is to say that commercial banks have the right to withdraw goods and services from the market without offering anything in return for it:

Why should the public pay interest to the private banking sector to provide a medium of exchange that the government can provide at little or no cost? And why should seigniorage (profit to the issuer of fiat money) go largely to the private sector rather than entirely to the government (the commonwealth)? Is there not a better way? Yes, there is. ... Keep fiat money, but move from fractional reserve banking to a system of 100% reserve requirements on demand deposits. ... Banks would no longer be able to live the alchemist's dream by creating money out of nothing and lending it at interest (Daly, 2013, p. 1).

Graziani (2003, pp. 58-66) among others has explained that no agent involved in the loans supply process has a seigniorage privilege: not businesses, not households, and certainly not commercial banks. The profits of commercial banks come from the difference between the rate of interest on loans, with allowance for default, and the costs of deposits, including operating costs and any interest rate payments. This would hold whether loans create deposits, as in the endogenous money view where commercial banks create money out of nothing, or deposits create loans, as it would be the case under the FRB proposals.

(2) Inflation can be controlled by the rate of increase of the money supply. This echoes the now discredited monetarist proposition that “*inflation is always and everywhere a monetary phenomenon* in the sense that it is and can be produced only by a more rapid increase in the quantity of money than in output” (Friedman, 1987, p. 17):

At the simplest level of analysis, if inflation is below the target, for instance the MPC [Monetary Policy Committee] could increase the money supply, while if inflation was above the target, the MPC would decrease the money supply (Dyson et alia, 2011, p. 11) Post Keynesians and circuitists have offered theoretical and empirical arguments that explain the problems with the monetarist view of inflation. In a capitalist economy, as opposed to the monetarist model of it, production takes time, and it requires the provision of finance to enable inputs including labour to be paid. When input prices and wages rise, more finance is required for production, and that is introduced through bank loans. As a result, the money supply increases. Therefore, the growth of money is caused by the growth of output and prices, rather than the reverse. In contrast with monetarists (and also the now dominant New Consensus macroeconomists), Post Keynesians and circuitists view inflation as the outcome of a social conflict over the distribution of income, i.e. inflation is the result of complex power struggles between capital and labour, and among capitalists.<sup>6</sup>

(3) The amount of money in the economy is determined by the supply of loans made by commercial banks. Taken at its face value, this means that the demand for loans of households and businesses is completely irrelevant for the determination of the quantity of money.

[T]he lending decisions of commercial banks have huge significance for the economy, for two reasons. First, because new money is created when banks make loans, the lending decisions of banks *determine* the total quantity of money that circulates in the economy. Second, as banks decide who they will lend to and for what purposes the loan can be used, their lending priorities determine which sectors of the economy this newly created money is allocated to. As a result they have a huge impact on the shape and future direction of the economy. Many of the economic, social and environmental challenges that we face are connected, in one way or another, to these two key impacts of bank lending (Jackson and Dyson, 2012, pp. 48, emphasis added).

Post Keynesians and circuitists have offered theoretical and empirical arguments explaining that money is introduced in the economy by means of negotiations between commercial banks

and households and businesses. Therefore, the amount of money which is created within any time period depends on the willingness of both banks to extend loans, and households and businesses to take out loans. For this reason, Post Keynesians and circuitists distinguish the effective or actual supply from the planned or desired supply of loans, with the difference being explained by the demand for loans of non-bank public. By the same token, the effective or actual demand should be distinguished from the planned or desired demand for loans, where the former is the demand for loans deemed creditworthy by banks (Wolfson, 1996; see also Brancaccio and Fontana, 2015, pp. 7-8). In sum, the amount of money in the economy is determined by the interplay between the supply of and the demand for loans.

(4) The new supply of bank loans creates an equal increase in the amount of outstanding debt in the economy. Again, taken at its face value this means that at all times any additional flow of money injected in the economy creates an equally proportionate increase in the total stock of money, as suggested in the quote above.

This view blurs the crucial distinction between money demand, that is the demand for money to be spent, and liquidity preference, that is the preference for holding money (hoarding) vis-à-vis other less liquid assets (Wray, 2001, p. 83). Money is being continuously created and destroyed: the provision of bank loans creates corresponding bank deposits, and repayment of bank loans eliminates both loans and deposits. Bank deposits are generally held by firms and households for a relatively short period of time prior to undertaking transactions. As such the ‘demand for money’, i.e. a willingness to hold bank deposits usually temporarily, comes from what Keynes termed the transactions motive, the precautionary motive and the finance motive. When firms and households receive bank deposits that they do not wish to hold, these excess money balances can be extinguished by the reimbursement of previously accumulated debt. This is what Post Keynesians and circuitists (e.g. Lavoie, 2001, and 2014, Ch. 4) call the reflux mechanism: when the mechanism of debt repayment is complete, the amount which eventually

remains in circulation is zero. It follows that the amount of outstanding bank deposits in the economy has generally the nature of a residual that is set by the willingness of firms and households to hold them, albeit temporarily. The size of the residual is generally of little significance.

(5) The current accounting of money as a debt-credit relationship is a relic of the past, when banknotes were backed by and redeemable for gold. For instance, it is argued, the line printed on British banknotes, namely the promise to pay the bearer the sum of five pound, today would be met by another five pound note, rather than by gold coins (e.g. Jackson and Dyson, p. 210 and Appendix 3). This means that under FRB money could be an asset of the holder but a liability for no one.

Because money will be created by the central bank free of any corresponding debt, money will now be a *source of wealth* for the population in aggregate (Jackson and Dyson, 2012, pp. 259, emphasis added)

Among others, Post Keynesian and circuitists have argued that all money is debt. The central bank creates money when commercial banks borrow banknotes or monetary reserves. Banknotes or monetary reserves are liabilities of the central bank, whereas the advances made to commercial banks are assets of the central bank. Similarly, the central bank creates money when the Treasury draws cheques from its accounts at the central bank. Government deposits, which once used to make the planned government expenditure good will be deposits of commercial banks, and banknotes are liabilities of the central bank, whereas Treasury bills are assets of the central bank (Lavoie, 2014, pp. 192-217). Therefore, all money, including central bank money, is always a form of debt. The exchange of a five pound note for a gold coin is no more than the exchange of one money form for another. The money creation process relies upon trust and confidence, and trust and confidence can be bolstered in a range of ways. Trust and confidence can also be undermined as during a time of hyperinflation or civil unrest. When in the past sovereigns could not be trusted to not default on their debts, precious metal became a common form of money (Tymoigne and Wray, 2006, p. 10). But metal money, while having

the appearance of a commodity money, is also a form of debt. As Keynes (1913, p. 26) noted “the rupee, being a token coin, is virtually a note printed on silver”.

It is also readily apparent that a higher amount of money does not constitute a higher level of wealth. There is no increase in the capacity of the economy to produce, nor is there any increase in real assets as a result of a higher stock of money. Money as net wealth would imply that deflation would make people wealthier. A rise in the velocity of circulation would then be associated with a decline in the holding of money: the same level of nominal income would then be associated with a lower money stock and hence lower wealth! In short, to say that money is a source of wealth for the population is like saying that when the price of houses has risen, people are better off even though the housing stock and its quality has not changed.

### 3. **The FRB Goal of Financial Stability**

Kindleberger (1978), Reinhart and Rogoff (2009) and Laeven and Valencia (2013) amongst many others have clearly documented that capitalist economies are continuously subject to bouts of boom and bust and to crises. Against this historical evidence, advocates of FRB claim that their proposals would aid to ensure economic and financial stability. The claim is usually made along the following lines (as also critically summarised in Dow *et alia*, 2015, p. 3). The current system is inherently financially instable because banks have the capacity to create money at their own will, and hence beyond the direct control of the central bank. This process of money creation is also facilitated by the lender-of-last-resort facility, which at least in part protects banks from lending risks. Against this, FRB will create a sharp distinction between safe money assets, that are either issued or backed by the state, and other financial assets. In this way, it is argued that retail depositors and the payment system will be safely protected.

There are several problems with the claim that FRB would ensure the goal of financial stability. The first, and perhaps obvious, criticism to make is that the FRB proposals would only directly affect a small, if important, part of the financial system, namely commercial banks (also called

clearing banks, or banks for short). Commercial banks are financial institutions whose liabilities (in the form of deposits) serve as money. For this reason, generally they are strictly regulated and have a close relationship with the central bank. However, the financial system contains many other financial institutions, notably non-bank financial intermediaries between savers and investors (e.g. investment banks) and the so-called ‘shadow banking’. These non-bank financial intermediaries and the ‘shadow banking’ account for most if not all of the growth of the financial system over the past decades, and they are deemed to have been the main cause of the Great Financial Crisis of 2007-2009 (hereafter GFC) and the related recession (Sawyer, 2014). Since the FRB proposals do not aim to affect these non-bank financial institutions, they will leave untouched many of the main sources of financial instability. Indeed, it could be argued that some of the features of FRB like the constraints on short-notice deposit accounts and the removal of deposit insurance are likely to produce a stimulus for the growth of non-bank financial institutions, hence increasing the risk of financial instability.

Furthermore, leaving aside the systemic instability created by non-bank financial institutions, the emphasis of FRB proposals on commercial banks, and on the protection of retail deposits and the payment system is likely to exacerbate the cyclical instability of the financial system. This is what has been described as the boundary problem in financial regulation (Goodhart, 2008, 2009). The rigid partition between highly regulated banks issuing safe money assets, hence financial institutions with relatively low profitability and smaller return on capital, and non-bank financial institutions supplying other financial assets is prone to generate more rather than fewer pro-cyclical crises:

When a banking crisis does occur, it, usually, first attacks the unprotected sector, as occurred with SIVs and conduits in 2007. But the existence of the differential between the protected and unprotected sector then has the capacity to make the crisis worse. When panic and extreme risk aversion take hold, the depositors in, and creditors to, the unprotected sector seek to withdraw their funds, and place these in the protected sector, thereby redoubling the pressures on the unprotected sectors, who are then forced into fire sales of assets, etc. The combination of a boundary between the protected and the unprotected, with greater constraints on the business of the regulated sector, almost

guarantees a cycle of flows into the unregulated part of the system during cyclical expansions with sudden and dislocating reversals during crises (Goodhart, 2008, p. 49).

A second problem with the claimed goal of financial stability is that FRB has an inherent though often ignored deflationary bias which is likely to produce instability in the financial system. For instance, amongst others Daly (2013) argues that under FRB the level of investment expenditure is constrained by prior savings, which in turn severely curtails economic fluctuations, including boom and bust cycles:

With 100% reserves every dollar loaned to a borrower would be a dollar previously saved by a time account depositor (and not available to the depositor during the period of the loan), thereby re-establishing the classical balance between abstinence and investment. With credit limited by saving (abstinence from consumption) there will be less lending and borrowing and it will be done more carefully (Daly, 2013, p. 1).

Notwithstanding the considerable debates about the nexus of causality between savings and investment (Sawyer, 2010), there are two inconsistencies and one main controversial issue with the quote above. The first inconsistency is that even if the overall level of credit in the economy could be limited to the overall level of prior savings, herding behaviour could still produce sectoral overinvestment and financial instability (Kregel, 2012, p. 5). The second inconsistency is that it is not clear where the prior savings alluded by Daly and other advocates of FRB have come from. It is technically impossible for banks as a whole to collect deposits without at the same time granting loans for the same amount. Therefore, at least initially there must have been a process of credit creation in the economy, which was completely unconstrained and unrelated to pre-existing resources. More importantly, the quote above indicates an inherently deflationary bias of FRB proposals, which is likely to produce recessions and financial instability.

The act of saving is a two-step decision process. In the first step, a decision is made about how much of the current income is spent on goods and services (consumption) and how much is not spent (savings). In the second step, savings are allocated between different real and financial assets, including bank deposits and cash (government currency). At every round there will be

leakages (e.g. hoarding cash), with the result that over time the fixed amount of prior savings that under FRB banks can transfer to borrowers is increasingly reduced. This tendency toward deflation or recession is further strengthened by the asymmetric nature of FRB proposals. In a system where commercial banks are prevented from creating credit, i.e. bank loans must not exceed the total of bank deposits previously collected, investment may be constrained in the upward direction by the availability of prior savings, but not in the downward direction. Thus, a fall in animal spirits and entrepreneurial intentions would lead to a cumulative downturn in economic activity, where a fall in investment leads to a fall in savings, and so on.

This tendency toward deflation or recession of FRB proposals highlights another and related major problem with FRB. What is the link between real and financial instabilities, and more generally what type of relationship between money and the needs of the real economy is envisaged in FRB proposal? The FRB proposals are ambivalent about the role of money for the macroeconomic equilibrium between investment and savings. This is an old problem in economics, which was vividly presented by Keynes in terms of the distinction between a real-exchange economy and a monetary economy.

An economy, which uses money but uses it merely as a neutral link between transactions in real things and real assets and does not allow it to enter into motives and decisions, might be called ... a real-exchange economy ... [whereas] an economy in which money plays a part of its own and affects motives and decisions and is, in short, one of the operative factors in the situation, so that the course of events cannot be predicted, either in the long period or in the short, without a knowledge of the behaviour of money between the first state and the last ... [is] a monetary economy (Keynes, 1933, pp. 408-409).

Advocates of FRB seem to agree with Keynes that capitalist economies are monetary economies and as such prone to crises and instabilities. Their 'solution' to these problems is to create a system in which what serves as money would be limited; the amount of money in circulation would be fully determined by the central bank; and commercial banks would not be able to finance investment expenditure ahead of savings.

However, one of the main lessons from the work of Minsky and other Post Keynesian economists is that the demand for and supply of banks loans via the financing of the production

of goods and services (investment) are an integral aspect of the operation of real-world economies (Minsky, 1996, p. 73; see also Fontana and Gerrard, 2002). This is how innovation and investment are financed, job opportunities are created, and capitalist economies develop. But the demand for and supply of banks loans are based on the anticipation that investment projects will be successful, such that the principal and interest payments due to banks can be met. It is therefore the level of investment (and government net expenditure, if the state sector is considered) which generates the cash flow that validates the liabilities of firms and households and create the real sources of financial stability in capitalist economies. When investment projects are unsuccessful or considered unprofitable, the generation process of income, employment, and cash flows suddenly stops, and the economic system is open to the possibility of insolvencies, bankruptcies, deep and long lasting recessions, and financial instability. Therefore, the creation of money through the lending activity of banks is essential in order to accommodate the financing needs of capitalist economies, and to generate the cash flows which will prevent the occurrence of real and financial instabilities. But the creation of money involves risks for banks and borrowers, and for the overall economic system.<sup>7</sup> This is why money matters, and capitalist economies are monetary economies rather than real-exchange economies. The creation of money also opens the door to fraud and unsafe banking procedures, and the speculative use of loans to fuel asset price bubbles. In response to these risks and abuses, FRB proposals have decided to ignore the financing needs of capitalist economies, and have directed their attention exclusively on the safety and security of the payment system. This will not limit, but rather exacerbate the possibility of financial instability. Furthermore, by aiming to transform monetary economies in real exchange economies, FRB proposals are not fit for purpose with modern real-world economies.

#### 4. **How long would FRB arrangements last?**

Under FRB, there would be two types of bank accounts permitted, namely transaction accounts and investment accounts. Transaction accounts are comparable to existing current or chequing accounts, hence readily transferable for the payments of good and services, but would have a 100 percent monetary reserves requirement as far as the banks are concerned. Investment accounts are similar to current savings accounts, with an often suggested 7-day or 14-day notice period for withdrawals, and would not have specified reserve requirements. Banks would be able to make loans using investment accounts, but not transaction accounts.

This rigid separation between transaction accounts and investment accounts is based on the assumption that the central bank and the government, the state for short, is able to determine in all circumstances the final means of payment for good and services. In reality, matters are more complicated. The state can and usually does determine the unit of account for its own activities. It can also specify the financial assets which count as the means of payment to be used for discharging tax and fine obligations. In this way, the state establishes the official means of payment in a country. However, this does not mean that the state always determines the accepted final means of payment or medium of exchange for good and services at all times. For instance, in a country where due to high inflation the official means of payment recognised by law is a weak local currency, good and services could be exchanged for a strong foreign currency like the US dollar, and the economy becoming partially dollarized. In the context of FRB, as argued by Goodhart and Jensen (2015), the main question is whether the state has sufficient power to ensure that the transaction accounts remain the key and sole means of payment:

Perhaps the main problem for followers of the Currency School (and FRB) is that, in order for their proposals to work, there needs to be a clear, hard and fast, distinction between ‘money’ and ‘near-money’. ... Although [Henry] Simons recognised the problem, neither he, nor anyone else, to the best of our knowledge, has ever managed to resolve it. It is the Achilles heel of the Currency School, and most proponents deal with it by ignoring it (Goodhart and Jensen, 2015, pp. 22-24).

Transaction accounts would be costly to operate for banks and their customers. Banks would not be able to make loans using transaction accounts, and hence they would forego the interest on loans. Yet, banks incur the costs of managing the accounts (e.g. ATM cards and related infrastructure). Consequently, banks would have to charge their customers with significant administrative fees (probably greater than any which are currently charged on current accounts). As a result, there would be an incentive for both banks and their customers to create alternative accounts, which could be directly or indirectly transferable for the payments of good and services, but without incurring the costs and limitations of the transaction accounts. For instance, investment accounts with a short notice period for withdrawals could be used as means of payment, i.e. near money: in the existing electronic age, funds could be switched from an investment account into a transaction account, and then used for the payment of goods and services by two mouse clicks. Furthermore, even if the rigid separation between transaction and investment bank accounts could be maintained, other financial institutions, notably non-bank financial intermediaries and the shadow banking, would be encouraged to step in and fill the near money gap by providing short notice period saving accounts that could be used for the payments of good and services. In short, it is highly questionable that the state will be able to determine what serves as the means of payment for goods and services in all circumstances and at all times, with the result that one of the main goals of FRB (see e.g. Jackson and Dyson, p. 274) would not be achieved, namely the central bank would not have direct control over the effective money supply (as which financial assets are used as money or near money develops)

## **5. Government budget and the money creation process**

Another controversial aspect of FRB proposals is the claimed relationship between the money creation process and budget decisions. Currently, the government decides the level of expenditure, and then the Treasury finances it through a loan from either commercial banks or the central bank. It is a fundamental feature of the present system that government expenditure

may be restrained by several factors (e.g. political preferences, lack of idle resources), but under no circumstances it is constrained by a lack of finance. In addition, not all, indeed rather little, of the money newly created by the central bank to finance government expenditure would remain held in the private sector. Once government expenditure is made good, money circulates in the economy, but then part of it returns to government deposits at the central bank through tax revenues and sale of government bonds. How much of the newly created money remains in the private sector depends on the extent of the reflux mechanism, and on how much of it the private sector wishes to hold, whether in the form of banknotes and coins by households and businesses, or of monetary reserves by commercial banks. In contrast to present arrangements, under FRB government expenditure would be constrained by a lack of availability of finance.

When the Monetary Policy Committee authorises the creation of a certain amount of new money, the Bank of England's Issue Department will add that money to the government's Central Government Account. The government is free to use this money as it chooses in order to achieve its democratically-mandated policy objectives. Therefore the government may choose to:

- a) Reduce the overall tax burden
- b) Increase government spending
- c) Make direct payments to citizen (sometimes referred to as a 'citizen's dividend')
- d) Pay down the national debt.

(Positive Money, 2012, p. 6; see, also, Jackson and Dyson, 2012, Ch. 7)

Since FRB advocates accept the monetarist proposition that inflation is and can be produced only by a more rapid increase in the supply of money than in output, under FRB the decisions of the central bank of changing the money supply in order to hit the inflation target take precedence over the financing of government expenditure. Therefore, when the central bank believes that an expansion of the money supply is inflationary, that is in excess of changes in nominal income and expenditure, it will not finance government expenditure; and *vice versa*, when the central bank considers that the money supply is not growing in line with changes in nominal income, it will insist that the government spends more. In short, under FRB a distinct limit which is placed on the money creation process, namely that the central bank adopts a monetarist rule and commercial banks do not create money, feeds back onto constraints on the

willingness of the central bank to finance government expenditure, and in the end on government budget decisions.

More generally, the FRB analysis of the relationship between the money creation process and government budget decisions conflates two different activities, namely the financing of government expenditure and the funding of government expenditure (over and above tax revenue). The act of creation of money permits government expenditure to be financed (in circuitist terminology initial finance is provided) and then undertaken. It does not enable taxes to be reduced. Taxes withdraw money from the economy, which means that money must have already been in existence. The funding (final finance in circuitist terminology) of government expenditure depends on the following budget deficit equation, where for simplicity the government and the central bank are consolidated together:

$$(1) \quad BD = G - T = DCBM + DB$$

where  $BD$  is government budget deficit,  $G$  government expenditure,  $T$  tax revenues,  $DCBM$  change in banknotes (plus coins) and monetary reserves,  $DB$  change in government bonds. From national accounts perspective, and assuming for simplicity a closed economy, there is a direct relationship between net private savings and budget deficit:

$$(2) \quad BD = G - T = S - I$$

where  $S$  is private savings, and  $I$  private investment.

From equations (1) and (2), it follows that:

$$(3) \quad S = DCBM + DB + I$$

This indicates that savings are held in the form of changes in money holdings, changes in government bonds, and changes in the financial assets issued by businesses to fund investment.

### *5.1 Money-funded budget deficit*

The implication of much that is written on FRB is that government budget deficits will be largely or entirely money funded. When the budget deficit is entirely money funded, i.e.  $DB = 0$ , from equations (1) and (2):

$$(4) \quad BD = G - T = DCBM = S - I$$

The first point which stands out from equation (4) is that the increase in the stock of money will need to be held as part of private savings. The motives for holding money are related to expenditure, and indeed money is then largely held in order to get rid of it. Transactions demand for money could be expected to be related to the level of income (per pay period), and would tend to increase only in so far as nominal income increases. Thus the private sector would have to be willing to absorb any increase in central bank money into their savings but may be (since central bank money and transactions accounts are barren assets yielding zero interest) reluctant to do so over and above any increase in the transactions demand.

The implications of a greater increase in the stock of money (through creation of money by the central bank which is not subsequently destroyed by the payment of taxes) need to be considered. When more money has been created than people will willingly hold, then individuals will seek to spend the 'excess', thereby tending to bid up output and prices. Another response is that individuals would seek to hold their savings in the form of financial assets rather than in the form of money, thereby bidding up the price of financial assets. In the case of 'too little money', possibly due the failure of the central bank to supply sufficient money to satisfy the transactions demand for money, there will be a downward pressure on spending, and thereby output and prices.

The second point highlighted by equation (4) is the intimate link in accounting terms between the size of the budget deficit and the change in the stock of money. It then becomes important as to whether the budget deficit in effect determines the change in stock of money or whether the change in the stock of money determines the budget deficit. Under the FRB proposals it is

clearly the latter case. The central bank imposes a target growth for the stock of money for the coming time period, say a year, and that in turn imposes a target for the budget deficit. Thus, fiscal policy becomes completely subordinated to monetary policy.

Furthermore, the imposition of a constraint on the budget deficit (or surplus) to be achieved in a specific time period faces two problems. The first of the problems comes from asking the question as to what reason is there to think that the pre-specified budget position target is compatible with a high level of employment. For instance, if intended savings are taken as  $sY$  ( $s$  propensity to save,  $Y$  output), and intended investment as  $I$ , and the pre-specified budget deficit (equal to target change in stock of central bank money) as  $x$ , then the balance between net private savings and budget deficit would give:

$$(5) sY - I = x$$

and the level of output would be  $(I + x)/s$ . There is no reason to think that the level of output determined in this manner would correspond to a desirable level (e.g. corresponding to high levels of employment). An alternative way of expressing this is to simply ask how would  $sY^* - I$  where  $Y^*$  is the high employment level of output as compared with  $x$ . If it is the case that  $sY^* > I + x$ , then there would be a deflationary situation, and  $Y = (I + x)/s < Y^*$ . If  $sY^* < I + x$ , then there could be an inflationary situation.

There have been long debates in macroeconomics as to whether a budget deficit is required for high level of employment or whether a balanced budget would correspond to a high level of employment. But the case has not yet been made that a budget deficit equal to the growth of the transactions demand for money (and as indicated above broadly in line with the nominal growth of the economy) would be compatible with a high level of employment.

The second problem arises from the well-known proposition that the tax and government expenditure system provides some degree of automatic stabilisation of economic activity. As private demand fluctuates, a progressive tax system would tend to dampen down fluctuations

in output and employment with budget deficits moving counter-cyclically, reflecting the operation of the automatic stabilisers. The FRB proposals would prevent the operation of automatic stabilisers in that the size of the growth of the stock of money and of the target budget deficit is fixed so that in the face of a downturn in the economy taxes would need to be raised and public expenditure cut, and this would reinforce the downturn. Similarly, in an upturn taxes would be reduced and the upswing reinforced. More boom and bust!

Budget deficits can be forecast, and attempts can be made to set tax rates and public expenditure levels to achieve a target budget deficit. The actual outcome on budget deficit depends on evolution of the level and composition of demand and of income (and the occurrence of unexpected events and emergencies). In general the actual outcome on the budget deficit would be different from the forecast budget deficit unless there is fine tuning of the budget deficit position to be made compatible with the target growth of the stock of money.

While changes in taxes are made infrequently, the amount of new money to be created will be determined on a monthly basis. Not being able to predict or influence the decisions of the MCC [Monetary Creation Committee] will mean the government will have little idea how much new money will be created each year and therefore by how much it can be able to reduce taxes (Jackson and Dyson, 2012, pp. 212).

This seems to suggest that the MCC does not announce what its money supply target is, and leaves the government guessing. The creation of 'new' money is required on a continuous basis in order for government expenditure to be financed and hence take place. But money is also destroyed when tax revenue is received, and the net increase in the money supply depends on the balance between public expenditure and tax revenues.

It is not the target growth of the stock of money which would be unknown but rather the actual budget deficit outcome. The planned budget deficit may have been in line with the target growth of the stock of money (which would illustrate the complete subordination of fiscal policy to monetary policy). But the actual budget deficit would in general differ from the planned deficit, and if the planned deficit is to be achieved late adjustments to public

expenditure and tax rate would be required. This may involve a sudden increase or sudden reduction in public expenditure as the accounting period draws to a close. Not a recipe for the good management of public expenditure!

As indicated in the previous section, the development of near-moneys used as a medium of exchange would mean that even if the central bank were able to control the central bank money it would not have the stock of money and near money under control.

### *5.2 Bond-funding deficit*

An alternative scenario comes when the Treasury continues to issue government bonds in order to (partially) fund the government budget deficit. Equation (1) holds, though under FRB DCBM is the change in the overall stock of money. The target (forecast) for the budget deficit would be made by the fiscal authorities, tax rates and public expenditure plans set, and the resulting achieved budget deficit would then depend on the on the level and structure of economic activity.

This case is similar to present arrangements. The growth of central bank money is dependent on both the conduct of monetary policy in terms of the central bank setting the short-run nominal interest rate, and the decisions made by households and businesses in terms of holding central bank money and (net) government bonds. It would however differ in two significant aspects. First, it would appear that DCBM would be set by the central bank in the pursuit of a target for the money supply. The sale of bonds by the government would then need to conform to equation (1) above, and government bonds in effect put out to auction to cover the difference between the budget deficit and the target increase in the money supply (rather than the setting of policy interest rate for policy purposes such as attempts to target inflation, influence the exchange rate, aid financial stability, etc.).

Second, DCBM would be equal to the expansion of the money stock (as defined by transaction accounts deposits), whereas under present arrangements DCBM only relates to central bank

money and the overall expansion of the stock of money is much greater (and, of course, is out of the control of the monetary authorities and depends on decisions by banks and the non-bank public over loans and deposits). FRB proposals could have the effect of changing the balance in the funding of budget deficit as between interest bearing bonds and non-interest bearing money. As noted previously the change in the amount of near-moneys would differ from the change in central bank money (and hence held in the transaction accounts),

If that were successful then the interest payments made by government would diminish over time as central bank money replaced bonds as the component of public debt. However, equation (1) shows that the private sector has to be willing to hold its savings in the form of non-interest bearing money.

The diminution of interest payments on government debt is also a diminution of income of the bond holders. For a given budget deficit, this would enable the replacement of interest payments by other forms of public expenditure: how far that is deemed socially beneficial would clearly depend on attitudes to the recipients of the interest on bonds, and the forms of the additional public expenditure in other areas. However, the public would face charges on their transactions accounts, which are largely not present in the current system. Under FRB, the size of those transactions accounts is equal to the monetized component of government debt. The reduction in interest payments by the government would be equal to rate of interest times the monetised component of public debt, whereas the additional transactions account charges would be  $c$  times transactions account deposits (equal to the monetised component of debt), where  $c$  is percentage banking service charges. Banks would levy charges to replace the interest payments received on loans, and as such the level of  $c$  would be the same order of magnitude as the reduced interest payments on government bonds.

## **6. Concluding comments**

Historians of economic thought have often argued that during periods of dramatic economic downturns and monetary disturbances mainstream economists and the public at large are unusually open to ideas and recommendations of monetary heretics that in normal times they will have dismissed as the views of cranks (e.g. Dimand, 1991). Following the GFC, once again brave heretics seems to have the chance of having their voice heard, and so do cranks. As Keynes (1936, pp. 370-371) hinted, there are important similarities between heretics and cranks. Heretics and cranks share an acute awareness of real-world problems. They are also both particularly sensitive to the limitations of mainstream economists in responding to the challenges of contemporary experience. However, heretics and cranks part company in one crucial aspect. Heretics advance their arguments by using alternative theories, policies and methodologies to mainstream economists. Cranks base their arguments on analytical errors. This is especially the case of monetary cranks, and their large followings.

This paper has analysed the main features and policy implications of FRB proposals, which have been brought forward in response to the severity and enduring consequences of the GFC. The paper has maintained that whilst FRB advocates recognize the essential endogeneity of the money creation process in capitalist economies, they have failed to understand and appreciate the Post Keynesian and circuitist theory of endogenous money. As a result, they succumb to a number contradictory statements and analytical errors, including the following: the so-called seigniorage privilege of commercial banks; the adoption of the now discredited monetarist proposition that inflation is always and everywhere a monetary phenomenon; the apparent inability of distinguishing the effective or actual supply of bank loans from its planned or desired supply; or in a similar mistaken practice, money to be spent from money hoarded; and last but not least the arguably misnomer debt-free money proposition.

The paper has also argued that a FRB system would do very little to enhance financial stability, and could well lead to an exacerbation of instability for several reasons, including the

following: the obsessive focus on commercial banks, while ignoring non-bank financial intermediaries and the ‘shadow banking’, both deemed to be among the main causes of the GFC; a similar blind fascination for the safety and security of the payment system, with little or no consideration for the financing needs of capitalist economies - but this is how innovation and job opportunities are created, cash flows generated, and financial liabilities validated; and lastly an inherent deflationary bias. The paper has also examined FRB arrangements, contending that in a FRB system there are powerful incentives for both banks, non-bank financial intermediaries and the shadow banking to create near moneys, with the result that one of the goals of FRB, namely the direct control over the money supply, would soon slip away from the central bank. Finally, the paper has analysed the controversial links between the money creation process and the government budget. Under FRB the distinct limit which is placed on the money creation process, namely that the central bank adopts a monetarist rule and commercial banks do not create money, feeds back onto constraints on the willingness of the central bank to finance government expenditure, and in the end on government budget decisions. As a result, a FRB system will nullify the automatic stabilisers of fiscal policy and lead to a dominance of monetary policy and unelected central bankers over fiscal policy and democratic decision making. In summary, on the basis of the arguments discussed above, notwithstanding all the good and noble intentions that motivate their work, FRB advocates are to be considered more cranks than brave heretics, and hence the title of this paper.

Finally, there are two further arguments advanced by FRB advocates that have not been discussed in the paper, but they are worth mentioning. First, it is claimed that the present banking and financial system lacks democratic control, while under a FRB system the government decides how money is spent. But this ability exists under present-day arrangements. Furthermore, under FRB, decisions on the amount of money to be created would now lie in the hands of the so-called independent central bank. Decisions on the allocation of

loans would continue to be in the hands of (private) banks. Therefore, the most that could be said is that democracy would not be enhanced by FRB, and in some ways such as giving power over fiscal policy decisions to unelected central bankers, democracy would be diminished. Second, it is claimed that the creation of money through the lending activities of banks generates a so-called ‘growth imperative’, which is arguably objectionable from an environmentally sustainable perspective. The ‘growth imperative’ comes from the drive for profits and investment, and that would not be diminished by FRB: the creation of money by the central bank and the generation of savings and the government budget would still allow investment to grow. Thus, it could be argued that the development of FRB would be irrelevant for any move to a low or zero growth economy.

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<sup>1</sup> The ‘Chicago plan’ emerged in response to the financial crash of 1929 and the subsequent banking crisis. See, for the history of the fate of the Chicago plan and a friendly critique of it, Phillips (1992, 1994) and Fiebiger (2014), respectively.

<sup>2</sup> See, for a comparison of some of these proposals, Dixhoorn (2013).

<sup>3</sup> See, for a discussion of the history of full reserve banking proposals and their sustainable growth credentials, Lainà (2015) and Dittmer (2015), respectively.

<sup>4</sup> Broadly defined modern Post Keynesian economics includes French and Italian circuitists (e.g. Graziani, 1989, 2003; Parguez and Seccareccia, 2000), Horizontalists (Lavoie 1984; Moore, 1988; Rochon, 1999), Structuralists (Wray, 1990; Palley, 1991, 1994; Dow, 1996), Fundamentalists (Davidson, 1988), Sraffians (Pivetti, 2001; Brancaccio and Fontana, 2013), Kaleckians (Sawyer, 2001), and Neo-chartalists (also called Modern Monetary Theorists; e.g. Wray 1998, 2012) who have all embraced the endogeneity of the money supply process. For simplicity, the use of the expression Post Keynesian and circuitist theory of endogenous money is maintained in the rest of the paper.

<sup>5</sup> See, on endogenous versus exogenous money theories, Moore (1988), and on FRB and exogenous money theory, Sawyer (2015).

<sup>6</sup> See, on the eclectic nature of inflation in the endogenous money theory, Rossi (2001, Ch. 3-4), Smithin (2012), Vernengo (2012), and Lavoie (2014, Ch. 8).

<sup>7</sup> Minsky and other Post Keynesian and circuitist economists are well aware of these risks and potential abuses (e.g. Minsky, 1994, p. 7). They suggest that this calls for a continuously evolving search of an appropriate structure of regulation and supervision of banking and finance such that: 1) the payments system is safe, secure, and expeditious; and 2) banks loans for accommodating the financing needs of capitalist economies come forth at a rate which enables an environmentally sustainable rate of economic growth consistent with full employment, and price and financial stability to be established and sustained (Fontana and Sawyer, 2015).