

Heterodox Views of Money and Modern Monetary Theory (MMT)

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Abstract

For neo-classical economists a 'conjectural history' (Dowd 2000) where money develops from barter serves a very useful purpose; it supports their ethics. It is most helpful to specify a system where money develops as a 'natural' response to changing circumstances by individuals behaving so as to maximise expected utility. However, careful examination of the available evidence contradicts the orthodox view. Historical analysis tends to support heterodox views, in particular, state and credit theories of money. In this paper, the key elements of credit and state theories of money will be considered and their close relationship to Modern Monetary Theory (MMT) will be highlighted. The paper will then go on to show how the model of the monetary system developed within MMT provides useful insights into the operational or core reality of monetary regimes of nations with their own non-convertible currencies operating under flexible exchange rates. Orthodox models can then be rationalised as being relevant only to situations where a nation voluntarily imposes constraints upon the operation of its monetary system or restrictions are imposed upon that nation externally. These constraints include operating within an international exchange system which requires convertibility into a particular commodity at an agreed parity (such as the gold standard) and convertibility into another currency at an agreed rate, with provisions for change in the event of fundamental disequilibrium (such as the Bretton Woods system which operated in the post-war monetary system until 1971). Politically imposed rules such as debt ceilings, prohibition of direct sales of public sector debt to a nation's central bank and the necessity for a national treasury to maintain a positive overnight balance at its own central bank would be considered as external to the operational or core reality of the model and as unnecessary impediments to the efficiency of the monetary system.

Introduction

My aims in this paper are, firstly, to establish if confidence in credit and state theories of money is based more securely on the available evidence than the neo-classical alternative and, secondly, to assess the extent to which Modern Monetary Theory (MMT) can be seen as a theoretical framework which is entirely consistent with credit and state theories of money. Thirdly, I attempt to demonstrate how MMT provides an explanation of how a real world monetary economy works. In so doing, I will suggest that MMT opens up the possibility of producing a model of the monetary system built on the existence of a core or operational reality and that this model provides valuable insights which are absent in alternative approaches.

In neo-classical economics money is seen as a facilitator or lubricant, which allows for efficient exchange. It is the oil in the engine rather than the fuel. Neo-classical economists find little or no comfort from a study of the historical development of money. They see the *actual history* of money as a nuisance and potential source of time-wasting at best and unnecessary and unjustified dissent at worst. When forced to consider the history of money the usual response is to produce a 'plausible' story for the development of money based around its supposed appearance as a cost-saving alternative to barter. I rather like Kevin Dowd's phrase 'conjectural history' (Dowd, 2000, p. 139). It doesn't really matter if the conjectural history is totally different from actual history; all that is necessary is the plausibility of the story.

"A conjectural history provides a benchmark to assess the world we live in, but it is important to appreciate that it is *not* meant to provide an accurate description of how the world actually evolved [emphasis in original]. The conjectural history is a useful myth, and it is no criticism of a conjectural history to say that the world failed to evolve in the way it postulates' (Dowd, 2000, p.139). In other words, it was *as if* the world developed this way and we need to immunise our history against any contradictory evidence.

One of my favourite clichés is, 'never let the facts get in the way of a good story'; for neo-classical economists the conjectural history serves a very useful purpose; it supports their ethics. It is most helpful to specify a system where money developed as a 'natural' response to changing circumstances by individuals maximising expected utility. Neo-classical theorists contend that money is merely a 'veil'; its introduction into a barter economy improves efficiency but leaves quantities produced and relative prices unchanged. I am not suggesting that money only plays the role of medium of exchange in orthodox theory; rather that it is this function which gives money its distinctive character. Its importance as a unit of account and store of value, although acknowledged in established theory, is not stressed. This is in marked contrast to heterodox views. According to the neoclassical view there is no role for the state in the genesis of money. The state is seen as a late arrival on the scene and a corrupting force, taking an unjustified share of national wealth by exercising control of a monetary system which had developed from the actions of individuals rightly pursuing 'optimising' behaviour.

Conjectural histories have been around for a long time and although there is some variation in the story they tend to follow a similar pattern. Wray (1998, p. 39) considers, justifiably, that a succinct analysis of early conjectural histories can be found in Mitchell-Innes (1913). Before providing a thorough critique of the story, Mitchell –Innes provides an excellent summary. According to Innes, the story goes as follows; in 'primitive' economies exchange was based on barter but as societies developed, efficiency was improved by the introduction of one commodity as a means of exchange. This commodity also served as a unit of value. A wide range of different commodities have been used in different societies at different times but eventually all roads tended to lead to precious metals as the most efficient variant. A fixed quantity of a metal (typically gold or silver) of known purity became a standard of value and this standard should have been guaranteed by rulers. However, when the 'authorities' took control of the system they exploited it to their own ends by debasing the currency.

Eventually credit was introduced as a substitute for gold, requiring less direct use of metal and improving efficiency.

Unfortunately, I feel it is sometimes necessary to spoil a 'good story' and attempt to discover the 'real story'. We may never know the full story of the development of money but surely we can at least tentatively suggest a history based on the evidence available. In this sense I believe credit and state theories are superior to the 'good story'. They may not be popular with the advocates of laissez-faire capitalism but they do appeal to those with an inquiring mind who would like to find out more about the actual history of money.

David Graeber describes the situation eloquently, 'In fact our standard account of monetary history is precisely backwards. We did not begin with barter, discover money, and eventually develop credit systems. It happened precisely the other way around. What we now call virtual money came first. Coins came much later, and their use spread only unevenly, never completely replacing credit systems. Barter, in turn, appears to be largely a kind of accidental by-product of the usage of coinage; historically, it has mainly been what people who are used to cash transactions do when for one reason or another they have no access to currency' (Graeber, 2011, p. 40).

Alternative Views of Money

Carl Menger articulated his version of the 'good story' in 1892. His ontology was deeply rooted in the presupposition 'that the individual enters the world equipped with rights to the free disposal of his property and the pursuit of his economic self-interest, and that these rights are anterior to, and independent of, any service that he may render' (Tawney, 1920, p.23). Menger's theorising was based on 'the subjective goal-directed actions of individual agents- a view that continues to characterise the Austrian approach to economic theory' (Hands, 2001, p. 39) and 'antiempiricist deductivism' (Hands, 2001, p. 39). Given the 'a priori truth' of his presuppositions and his impeccably logical deductive reasoning the need for empirical testing disappears; the 'good story' is given a green light. For Menger, 'Men have been led, with increasing knowledge of their individual interests, each by his own economic interests, without convention, without legal compulsion, nay, even without any regard to the common interest, to exchange goods destined for exchange (their "wares") for other goods equally destined for exchange, but more saleable' (Menger, 1892, p. 244).

He develops his argument further with, 'Putting aside assumptions which are historically unsound, we can only come fully to understand the origin of money by learning to view the establishment of the social procedure, with which we are dealing, as the spontaneous outcome, the unpremeditated resultant, of particular, individual efforts of the members of a society, who have little by little worked their way to a discrimination of the different degrees of saleableness in commodities' (Menger, 1892, p. 245).

However, for Ingham, 'money is logically anterior and historically prior to the market'. I like his way of developing the discussion; 'In the first place, without making a number of implausible assumptions, it is difficult to envisage that an agreed money of account could emerge from myriad bilateral barter exchange ratios, as the Mengerian commodity theory implies. How could discrete barter exchange of, say, 3 chickens to 1 duck or 6 ducks to 1 chicken, and so on, produce a universally recognised unit of account? The conventional answer that a 'duck standard' would emerge 'spontaneously' involves a circular argument. A single 'duck standard' cannot be the equilibrium price of ducks established by supply and demand because, in the absence of a money of account, ducks would continue to have a range of unstable exchange ratios. As opposed to discrete truck and barter, which produces myriad bilateral exchange ratios, a true market, which produces a single price for ducks requires first and foremost a stable unit of account' (Ingham, 2004b; p181-182).

In contrast to the neo-classical theory which finds its roots in the optimising behaviour of individuals, the state theory contends that the origins of money are rooted in the development of power and inequality.

Traditional tribal societies were essentially egalitarian and had no need for money. According to Polanyi, they were based upon reciprocity, redistribution and householding (*Polanyi, 1944, ch. 4*). However, with the development of inequality, a *raison d'être* for money emerged. Henry finds the essential origins of money to lie in power and inequality rather than exchange. 'Those who see money as a social relationship stress the significance of money as a unit of account in which obligations are both created and extinguished. Money, then, represents a relation between those who claim these obligations and those who must service those claims' (Henry, 2004, p.79). He goes on to suggest that the role of exchange in the genesis of money is of minor significance, especially since the existence of markets is in no way a necessary condition for the evolution of money. Money's role as a medium of exchange is downplayed while its role as of a unit of account is stressed.

In order to find alternative theories which may provide better explanations of money's origins and greater empirical support we may look towards state and credit theories. In terms of the state theory of money, the significance of Georg Friedrich Knapp's seminal work *The State Theory of Money* (1905, translated into English in 1924) needs to be stressed. Knapp's exposition is difficult to follow as he creates his own highly complex vocabulary and uses it extensively during his explanations. However, it is certainly a book worthy of a great deal of attention.

For Knapp, it is the state that decides on the unit of account and the 'money things' that are to be used in settlement of debts denominated in this unit. Initially, the unit of account may be a weight of precious metal of given fineness. However, the state may choose to change the unit to a different metal by decree. Thus the choice of unit is in the hands of the state rather than springing from a process involving individuals searching for the most efficient way of reducing the costs of barter. If the state decided that a different metal was to be used as a standard of value then it held the power to change the unit of account.

'If the state declares silver to be the material for payment instead of copper, the relative amount of existing debts remains unaltered' (Knapp, 1924, p.13). The state controls the transition; 'the '[t]wo epochs are separated from one another by the moment in which the state declares that payments shall no longer be made by weighing out copper, but by weighing out silver' (Knapp, 1924, p.13).

When the state changes the monetary standard by decree the original standard becomes an abstract standard; in this case the pound of copper becomes a purely abstract unit and debts denominated in 'pounds of copper' would now have to be paid in weights of silver as determined the state.

'The state therefore treats the older debts as if the unit of value, a pound of copper, were only a name by the use of which the relative amount of the debt was indicated, and which does not mean in reality copper was to be delivered. *The State reserves to itself the right to order* [emphasis added] that a "pound of copper" should now mean that a given weight of silver was to be paid' (Knapp, 1924, p.14).

The state's authority remains critical and it is this that allows continuity of commerce given the change of monetary standard.

'If the state alters the means of payment it lays down a rule for the conversion of the one into the other. The new means of payment must therefore refer back to the old one. It is only this reference that makes it possible to carry on business in the new means of payment, because at the moment of change care must be taken that the old debts should not lapse, but be able to be discharged' (Knapp, 1924, p.15).

Knapp analyses, in considerable detail, the process of monetary development from the starting point of a monetary unit expressed as a weight of metal of given fineness. The use of stamped coins whose

weight determines value is seen as a later development. A further stage was reached when the coins were given a nominal value by the authorities not based upon weight or precious metal content.

'When legal ordinances give the name to the unit of value (as mark, franc or rouble) and define it by reference to the earlier unit, there is nothing to prevent us from giving to the morphy means of payment [payments whose specific form is declared by law] *a validity not on weight but on fiat* [emphasis added]. A proclamation is made that piece of such and such a description shall be valid as so many units of value' (Knapp, 1924, p.15).

Once the unit is chosen it may continue to be defined historically as a particular weight of metal of given fineness. However, over time its nominal value would change in relation to the metal which underpinned its original definition.

The state has the power to choose the 'money things' i.e. what may be used to settle debts in the designated unit of account. 'Validity of proclamation is not bound to any material. It can occur with the most precious or basest of metals, and in all cases where payments are not 'pensatory' [weighing at the time of payment to establish validity], i.e. in all modern monetary systems' (Knapp, 1924, p.15).

It is the state that makes the rules. Knapp specifies the first as, 'Coins (minutely described) are made from a given metal with a given absolute content. This is the Mint standard.' Secondly, he continues, '[e]ach of these coins must be worth so many units of value. The unit of value is either that previously existing or it is newly specified, and in this case it is historically defined with reference to the previous unit of value' (Knapp, 1924, p. 63).

The key point is the dominant role of the state in each of the stages. The state decides the timings, not individuals maximising expected utility. The state is not a late arrival on the scene, hijacking a monetary system- which is progressing efficiently driven by optimising incentives- for its own purposes; rather it always directs the process, for good or ill.

'In modern monetary systems proclamation is always supreme' (Knapp, 1924, p. 31).

Ancient authorities would use their power to move resources from the private sector to themselves. Control of the monetary system provided a highly effective means for this aim to be achieved.

From this perspective, taxation serves, not to fund spending as is mistakenly believed by most economists and nearly all the population, but to create a demand for the currency and to reduce the spending capacity of the private sector. This will allow the state 'room to spend' without inflation.

A stylised story based upon the use of stamped metal might go as follows; a ruler might decide what she or he desired, for example, palaces, amphitheatres and an army of conquest. She or he could utilise their monopoly power over the monetary system to obtain what they desired. They would first define the unit of account and then decide upon the money things acceptable in payment of debts denominated in this unit, say, stamped metal discs clearly marked with her or his head. The disc may contain precious metal. This precious metal content (if any) would be decided upon by the state (the mint standard). The use of precious metal may help prevent counterfeiting and raise the prestige of the issuer but the intrinsic value of the coins provided only a floor value for the currency. The nominal value would be higher and determined by decree.

She or he then imposed a tax on her or his subjects denominated in its chosen standard, payable by the surrender of the stamped discs. The ruler decided the nominal value of the coins and how many each person must pay to satisfy their tax bill. This process gave the coins value. They were tokens showing the holder had a credit on the state. They were really 'tax credits'. The ruler could now spend these tokens on whatever she or he wished as long as it was available in her or his own domain –or 'monetary space.' The private sector suppliers of goods accepted the tokens, not because they were made of precious metal but rather because the population needed them to pay taxes. The rulers then

paid their soldiers with the stamped metal discs and the soldiers, in turn, were able to go to the villages and buy whatever they wished, provided of course it was available! The populace sold the soldiers real goods to obtain the discs to meet tax liabilities. Clearly, the empress or emperor had to spend before she or he could collect. A private agent minting discs with the ruler's head on without her or his permission would soon be put to the sword. It may appear that the ruler needed to tax before spending but this is an illusion!

So the state's ability to impose and collect taxes enables it to act as a currency issuer within its sovereign monetary space and transfer resources from the private sector to itself. The ultimate 'value' of a tax-driven currency is determined by the amount of effort required by the issuer in order to obtain it. Viewed from another perspective, the state as the monopoly issuer of 'that which is required to pay taxes' has the power to determine its value, in other words the price level is necessarily a function of the prices paid by the state; a proposition to which we will return later when we analyse the insights provided by Modern Monetary Theory (MMT).

The significance of the power of the state is noted succinctly by Knapp, 'Within a state the validity of the kinds of money is not a trade phenomenon but rests on authority' (Knapp, 1924, p. 217).

However, what if the state wishes to obtain goods and services from outside this space- from a foreign country? Clearly, it cannot levy a tax on foreign independent nations so it becomes a currency-user with respect to that country's currency.

It must obtain that nation's currency to make the purchase or find a foreign producer prepared to accept its own currency. The amount of foreign currency that may be obtained for each unit of domestic currency is not subject to the control of the authorities, rather it is the result of action of buyers and sellers on the foreign exchange market or 'Bourse'.

'In international trade the validity reaches to the frontier but does not pass it. Foreign coins have no validity in our country, nor our coins abroad. The value of foreign coins expressed in the required *valuata* [definitive money accepted in payments to the state] is decided by competition on the Bourse, not by authoritative act.

On the Bourse itself there is no authority controlling inter-*valuata* relations' (Knapp, 1924, p. 217-218, parentheses added).

Obtaining foreign currency at an exchange rate determined by the 'Bourse' will involve, directly or indirectly, the export of real goods and services. In the first case goods and services can be sold by the 'home' government to pay for the imports it desires. Alternatively, it can pay for imports with its own currency provided foreigners are prepared to accept its currency as a means to buy goods and services in the future. In this case future exports from the home country will be necessary (or at least the realistic future prospect of them!) It is clear here that imports are a real gain and exports are a real cost. In an ideal world the home country would find willing foreign sellers who were prepared to simply save in its currency – it could then avoid the need to actually sell goods and services (well for at least as long as the foreign country was prepared to export real goods and services and accept only debt in return). This situation is more than vaguely reminiscent of the USA and its relationship with China.

Before considering the evidence supporting the state theory of money we might examine the credit theory of money. The two approaches are complementary and together provide powerful insights absent from the neo-classical story. Once the state has named the unit of account, then private sector agents may issue their own money denominated in that unit of account. We might focus our attention on the work of Alfred Mitchell Innes and his two famous articles from the *The Banking Law Journal*, 'What is Money?' in 1913 and 'The Credit Theory of Money' in 1914. For Innes, the nature of money is founded upon the credit and debt relationship and not as a development of barter. He states, 'A first class credit is the most valuable kind of property. Having no corporeal existence, it has no weight and

takes no room. It can easily be transferred, often without any formality whatever' (Innes, 1913, p.10). Innes follows up with a powerful statement, 'Credit is the purchasing power so often mentioned in economic works as being one of the principal attributes of money, and, as I try to show, credit and credit alone is money' (Innes, 1913, p.9). Innes had already clarified the meaning of credit, 'It is here necessary to explain the primitive and the only true commercial or economic meaning of the word "credit." It is simply the correlative of debt. What A owes to B is A's debt to B and B's credit on A. A is B's debtor and B is A's creditor. The words "credit" and "debt" express a legal relationship between two parties, and they express the same legal relationship seen from two opposite sides. A will speak of this relationship as a debt, while B will speak of it as a credit' (Innes, 1913, p.9). He then explained the relationship between credit and debt, 'Whether...the word credit or debt is used, the thing spoken of is precisely the same in both cases, the one or the other word being used according as the situation is being looked at from the point of view of the creditor or of the debtor' (Innes, 1913, p.10).

'Money, then, is credit and nothing but credit. A's money is B's debt to him, and when B pays his debt, A's money disappears. This is the whole theory of money' (Innes, 1913, p.16).

Innes discussed the nature of state money as credit, 'Every time a coin or certificate is issued...[a] credit on the public treasury is opened, a public debt incurred' (Innes, 1914, p.6). Innes recognised that a debt to the state or tax liability can be paid by the return of the government's own debt instrument; in other words there exists 'the right of the holder of the credit (the creditor) to hand back to the issuer of the debt (the debtor) the latter's acknowledgement or obligation, when the former becomes debtor and the latter creditor' (Innes, 1914, p.6). Thus a private sector individual can settle his tax liability by returning state debt to the government.

The evidence in support of state and credit theories is wide-ranging and comprehensive. Impressive work has been done by Ingham (1996, 1999, 2000, 2004) and notably by Grierson (1976, 1979), the famous numismatist. A thorough examination of corroboratory work is well beyond the scope of this paper. For this reason I will rely heavily on Wray et al (2004). This work provides a superb summary and critique of Innes' work and a wide-ranging survey of evidence concerning the development of money. Wray invited various specialist scholars to contribute to the volume. We might consider the case of Egypt. John Henry concludes, 'Egypt was not a monetary economy; production was not undertaken to 'make' money. But it certainly had money and money was not a medium of exchange, but a social relationship. It was bound up with the transition from egalitarian to class society' (Henry, 2004, p.96).

He continues, 'The ruling class, surrounding the semi-divine king, levied non-reciprocal obligations ('taxes') on the underlying population. These taxes had to be accounted for and a measure had to be developed to allow a reasonably systematic form of bookkeeping to maintain records of obligations and the extinguishing of those obligations. In Egypt, this unit of account was the *deben*, and it is important to note that the *deben* was an arbitrary standard that rested on a particular weight. And this weight remained the same regardless of whether it referred to grain, copper or silver. Money has no value in and of itself. It is not the thing that matters, but the ability of one section of the population to impose its standard on the majority, and the institutions through which that majority accepts the will of the minority. Money, then, as a unit of account, represents the class relations that developed in Egypt (and elsewhere), and class relations are social relations' (Henry, 2004, p. 96).

'A. Mitchell-Innes's theoretical account, developed nearly a century ago and long ignored by economists, is in accord with the historical facts of the development of money in Egypt' (Henry, 2004, p. 97).

We might also consider the case of Mesopotamia, Hudson contends that, in general, 'The power to create money and expand the credit supply historically has tended to be in the hands of public bodies. Ever since its Bronze Age inception, money's power has been established by the public sector's willingness to accept it in payment for public fees and taxes' (Hudson, 2004, p.121). He goes on to

conclude, in the specific case of ancient Mesopotamia, 'rather than originating with private individuals trucking and bartering, money was created as a medium to denominate and pay obligations to the large public institutions. The Mesopotamian breakthrough lay in creating a system of price equivalencies that gave a sense of proportion. The value dimension was provided by the accounting formalities that enabled temples and palaces to coordinate their internal resource flows and dealings with the rest of the economy' (Hudson, 2004, p.123).

Thirdly, we might consider ancient Greece. According to Keynes, 'The Solonic reform of the Athenian currency in the sixth century B.C. was an exercise of the chartalist prerogative which was contemporary with, but in no way dependent upon, the existence of coined money. It was just a change of standard' (Keynes, 1930, vol. 1 p. 13).

The evidence supports the contention that money is always credit and should be analysed as a development from the credit/debt relationship and that the state has a critical role in the introduction and use of money. Examination of ancient empires confirms this. Even today, states and would-be states are issuing or intending to issue their own currency. Isis has recently announced plans to introduce its own currency; this, in a sense, is an affirmation of its view of itself as a 'state'.

'Isis said it would reinstate an ancient Islamic dinar currency using gold and silver coins. There is a modern form of the dinar still in use in some countries, but these use fewer precious metals for coins. Isis's announcement did not state when the currency would come into circulation' (The Independent, 13, November, 2014).

The state decides upon the unit of account and is able to issue its own debt or 'tax credits' denominated in this unit. Private sector agents can then issue their own debt denominated in this unit in return for goods and services. The holder of this private sector debt possesses a credit on the issuer which, if transferable in settlement of his own debts, effectively becomes money. Over the centuries despite the primary significance of the state in the introduction and control of the monetary system there have been many notable attempts by groups of private sector agents to subvert the power of the state. One of the most famous (and successful) was the Italian exchange bankers' use of their own currency. The system they used involved their own unit of account – the *ecu de mark* and their own 'money things', bills of exchange. They developed an international money system which enabled them to significantly enrich themselves. The system was based on the broad acceptance of bills of exchange within the sphere of influence of the exchange bankers, for example an Italian merchant could buy a bill of exchange from an exchange banker in local currency and use it settle a debt in, say, the Netherlands. The Dutch seller would receive local currency in return for the bill of exchange from another exchange banker operating in the network. The exchange bankers as group would hold large quantities of mutual credits and debts, denominated in their unit of account, which required to be settled, usually periodically at trade fairs. Exchange bankers received fees and commissions but the fact that transactions were carried out between them in their own private money- the *ecu de mark*- was critical. The exchange bankers could convene as a group and agree upon the *conto*; a schedule of rates of exchange between the various sovereign moneys and the *ecu de marc*. In essence, their power to set these rates of exchange to their own advantage enabled them to increase their wealth both individually and as a group relative to the rest of the community. An excellent and highly entertaining summary of the nature of activities of the exchange bankers is found in '*Money; the Unauthorised Biography*' (Martin, 2013). '*Private Money and Public Currencies*', a highly impressive feat of scholarship, provides a magisterial study of all aspects of nature of exchange bankers (Boyer-Xambeu, Deleplace, Gillard, 1994).

Recently, several 'cryptocurrencies' have emerged as potential rivals to state money. The most well-known of these is 'Bitcoin'. The advocates of the use of Bitcoin see it as providing several advantages which are particularly appealing to 'libertarian' groups with a profound mistrust of government.

'Because the currency is decentralized you own it. No central authority has control, and so a bank can't take it away from you. For those who find their trust in the traditional banking system unravelling that's a big benefit' ('Coindesk', 2014).

We might consider the question of whether Bitcoin is 'really money'. However, this would lead to the problem of what we mean by 'really money!' At this stage, we may be better advised to say that it is highly debatable whether Bitcoin can replace an existing state currency. It may be possible to use it as a 'money thing' (Keynes, 1930, p.4) but it is not a true unit of account. As pointed out by the Economist, 'Volatile values could prevent Bitcoin from ever establishing itself as a medium [sic] of account. Even the few retailers who accept Bitcoin *use other currencies as their principal accounting unit* [emphasis added]. Prices are given in a prominent currency (US dollars, for instance) and the Bitcoin price fluctuates automatically with changes in the crypto-money's exchange rate. Similarly, most Bitcoin owners work in jobs with wages paid in traditional currencies. So long as Bitcoin buyers and sellers "think" in euros or dollars it will fall short of money status' (The Economist, 2014).

The complementarity of state and credit theories is strong. 'While there is no evidence that Innes was familiar with the work of Knapp, the similarities are remarkable' (Wray, 2004, p. 243). For Wray, 'Innes offered an unusually insightful analysis of money and credit. He not only provided the clearest exposition of the nature of credit, but he also anticipated Knapp's 'state money' approach' (Wray, 2004, p. 260). Once the state has decided upon the unit of account then 'most transactions that do not involve the government take place on the basis of credits and debits, that is in terms of privately-issued money things' (Wray, 2004, p. 260).

After examining the evidence, it seems that we can have more confidence, at least tentatively, in the historical accuracy of credit and state theories of money and unless we are immersed in free-market ethics we can disregard the 'good story'. State and credit theories of money should not be seen as mutually exclusive; far from it. Together they provide a coherent framework which is extremely valuable for economists seeking to understand both the history and the nature of money.

The state and credit theories of money allow us to understand the core reality of the monetary system. They tell us that the state is at the root of money and, in its essential nature, money is always transferable credit.

Starting from their ethics, the neo-classical economists deduced a history of money. Despite this approach generating a 'good story', it had no empirical confirmation. In reality, the development of money goes hand-in-hand with the actions of the state. The state and credit theories of money, in contrast to their neo-classical rivals, receive significant support from the evidence. Thus, it seems logical to build a model of a monetary economy which explicitly takes account of the role of the state and the essential nature of money as following from the debt/credit relationship. Rather than considering money as a commodity which improves the efficiency of exchange, money becomes an intrinsic part of the operation of the system. Money is no longer a veil, no longer neutral; in the short run or long run.

It seems clear that we need an approach within which credit and state theories of money underpin a model of the core reality of a monetary system where a state issues its own fiat currency under floating exchange rates. Such a model is applicable to most of the world's contemporary national monetary systems, including the USA, UK and Japan but excluding the euro-using countries.

MMT provides such a model, well – rooted in the state and credit approaches.

Modern Monetary Theory (MMT)

We are now in a position to consider the core propositions of MMT and the extent to which they are consistent with state and credit theories of money. MMT is founded on the insights provided by the state theory of money. Money is chartal; a creation of the state. In MMT, money is considered as a social institution, where 'credit and credit alone is money' (Innes, 1914). A full examination of the genesis of MMT is well beyond the scope of this paper but at least we can note the clear links between the work of J. M. Keynes and chartalism, 'The State, therefore, comes in first of all as the authority of law which enforces the payment of the thing which corresponds to the name or description in the contract. But it comes in doubly when, in addition, it claims the right to determine and declare *what thing* corresponds to the name, and to vary its declaration from time to time- when, that is to say, it claims the right to re-edit the dictionary. This right is claimed by all modern States and has been so-claimed for some four thousand years at least' (Keynes, 1930, p. 4).

Abba Lerner, especially in his development of *functional finance* can be seen as a clear forerunner of MMT. 'The Modern State can make anything it chooses generally acceptable as money and thus establish its value quite apart from any connection, even of the most formal kind, with gold or with backing of any kind. It is true that a simple declaration that such and such is money will not do, even if backed by the most convincing constitutional evidence of the state's absolute sovereignty. But if the state is willing to accept the proposed money in payment of taxes and other obligations the trick is done' (Lerner, 1947, p. 313). He goes on, 'Depression occurs only if the amount of money spent is insufficient. Inflation occurs only if the amount of money spent is excessive. The government-which is what the state means in practice- by virtue of its power to create or destroy money by fiat and its power to take money away by taxation, is in a position to keep the rate of spending in the economy at the level required to fulfil its two great responsibilities, the prevention of depression, and the maintenance of the value of money' (Lerner, 1947, p.314).

An excellent summary of the distinctive nature of MMT is provided by Warren Mosler in his 'statement of purpose' (Mosler, 2012, p.13-16). In recent correspondence he noted succinctly,

'MMT recognizes that the currency is a public monopoly, taxes function to create unemployment and the funds used to make payments to the government come from the government. The price level is a function of prices paid by government and loans create both deposits and required reserves. The national debt is nothing more than the dollars spent by the government that haven't yet been used to pay taxes and remain outstanding as 'net savings' in the economy until used to pay taxes. They 'rest' in the form of cash, reserve balances at the Fed and balances in securities accounts at the Fed' (Mosler, 14 March, 2015).

Mosler, whilst appreciating the foundational work of Lerner, notes the absence of explicit analysis of the ability of the state to act as a 'price –setter' from the article quoted above. Since the government is the monopoly issuer of the state money which is required to pay taxes 'the price level is necessarily a function of the prices paid by the government when it spends and/or the collateral it demands when it lends' (Mosler, 14 March, 2015).

This view is developed by Wray, who states that the government can 'determine the value of money by setting the price it is willing to pay' (Wray, 1998, p. 170). He develops his analysis in considerable detail and notes that there is 'an asymmetry involved; it is easier to cause inflation than it is to cause deflation. If the government continuously raises the price it is willing to pay for each item it purchases, this is quite likely also to cause prices of items sold in private markets to rise- due both to demand effects (household income and thus demand is higher) and supply effects (private buyers will have to compete to some degree with government for at least some of the things sold)' (Wray, 1998, p. 173). He considers that 'if the government lowers its buy prices, sellers might at first prefer to sell to private buyers (where possible)' (Wray, 1998, p.173). However, as the government reduces its expenditure this will, in turn, reduce household income and spending. 'Eventually market prices also decline as a

general deflation spreads throughout the private economy. After some point the government announced buy prices become “competitive” (Wray, 1998, p. 173).

Mosler also considers that the contention, ‘Inflation occurs only if the amount of money spent is excessive’ might be viewed as questionable. ‘First, defining “inflation” is highly problematic and second, however defined, it can increase for any number of reasons apart from “excess demand” ’ (Mosler, 14 March, 2015).

In conventional analysis price rises *per se* are often described as ‘inflation’. However, on closer examination, it may well be the case that a price rise may be the result of the market mechanism expressing a relative price shift. For example a temporary shortage of a particular commodity may result in a rise in its price as the market allocates available supply to buyers who then have less to spend elsewhere. The exact definition and measurement of ‘inflation’ is a complex problem and due its political significance has been the subject of wide debate. However, we might at least tentatively suggest that inflation involves a ‘general price rise over a sustained period’ even if we admit that the exact meaning of ‘general’ and ‘sustained’ might be difficult to establish in practice. Such a situation would imply a more deep-seated process with perhaps multiple contributory causes at work. In terms of the role of government fiscal policy as a counter-inflationary tool, it might be suggested that the government should ensure that spending is high enough relative to taxes to generate full employment without *creating inflation from excess demand*.

In MMT, the state is there at the start; it is not a late arrival and the villain of the piece. The state uses its power to name the monetary unit and declare how payments to it should be made. MMT explicitly recognises that prior spending or lending by the state is required for the private sector to pay its taxes. Once the state has decided upon the unit of account, the private sector can create money denominated in this unit of account. Private sector debt can now circulate.

During a conference organised by a free-market ‘think-tank’ I asked the key speaker an interesting question, ‘viewed as a whole, where does the private or non-government sector obtain the money it needs to pay its taxes?’

His reply provided an insight into the thinking of mainstream neo-liberals who see the real nature of the monetary system as irrelevant. His answer was (paraphrasing), ‘the private sector creates the money through productive activity.’ That is as far as he was prepared to go. In effect his ethics dominate and (whether he knows it or not) he is relying on conjectural history. As we have noted earlier, for free-market advocates, money is a private sector cost-saving invention later, sadly, pirated by the state. However, as a matter of accounting reality his answer was patently false. Private sector debt or bank money is not acceptable in payment of taxes. It may, at first glance, appear as though it is. However, on further reflection this view can be seen as illusion. If a private sector individual or institution pays taxes by means of a cheque its bank deposit falls by the amount of the payment but the settlement of the tax liability occurs when the taxpayer’s bank’s reserve account at the central bank is debited by the same amount. It is the transfer of bank reserves from the taxpayer’s bank’s reserve account to the Treasury account that settles the tax bill. To quote Mosler, ‘you can’t have a reserve drain before a reserve add.’ Before the private sector can pay its taxes the Treasury or central bank must have spent or lent the money. The correct answer to my question was, ‘from earlier spending or lending by the Treasury or the central bank.’ The only other way would involve counterfeiting of state money by the private sector!

We can see that one of the key insights of MMT is the explicit recognition that the state must issue money before it can collect it. Spending precedes taxation; the currency is a public monopoly. Only money that has already been issued by the state can be collected in taxes. In this situation the state is the price-setter and can always determine the interest rate for risk-free loans of any duration. MMT also recognises the essential function of taxes; that is to generate unemployment! In order to move resources to itself the state uses its power to place members of the private sector in its debt, in other

words, impose a tax liability upon them. Such workers are now 'unemployed' – they lack the necessary funds to pay their tax bill and must now seek employment in order to earn the necessary money. They may work for the state directly, for example by joining the army, or they may offer themselves for employment to a member of the private sector who has access to previously-issued state money. The existence of unemployment is clear *de facto* evidence that net government spending is too small to move the economy to full employment. The solution follows logically; a tax cut or spending increase is required to achieve this aim.

Our core or operational reality is clear. In a world free of political blockages in the monetary plumbing (where the state issues its own non-convertible currency under floating exchange rates) there is never an 'affordability' question in a monetary sense for the government. It never 'has' or 'doesn't have' money. It issues money *ex-nihilo* and can purchase anything available within its own sovereign monetary space. In such a situation the limits of production and consumption of goods and services are real not monetary. The quantity and quality of factors of production determine what can be produced and consumed domestically. The state must ensure the economy performs so as to ensure that the nation lives up to its means. It must use its position as a monopoly issuer of the currency to ensure full employment. MMT is entirely consistent with the 'sectoral balances' approach, popularised by Wynne Godley and used extensively and very effectively as an analytical tool by Bill Mitchell.

'In macroeconomics we have a way of looking at the national accounts (the expenditure and income data) which allows us to highlight the various sectors – the government sector and the non-government sector. So we start by focusing on the final expenditure components of consumption (C), investment (I), government spending (G), and net exports (exports minus imports) (NX). The basic aggregate demand equation is:

$$\text{GDP} = C + I + G + (X - M)$$

which says that total national income (GDP) is the sum of total final consumption spending (C), total private investment (I), total government spending (G) and net exports (X – M).

In terms of the uses that national income (GDP) can be put too, we say:

$$\text{GDP} = C + S + T$$

which says that GDP (income) ultimately comes back to households who consume, save (S) or pay taxes (T) with it once all the distributions are made.

So if we equate these two ideas about the same thing (GDP) we get:

$$C + S + T = C + I + G + (X - M)$$

which we then can simplify by cancelling out the C from both sides and re-arranging ... into what we call the 'sectoral balances' view of the national accounts. There are three sectoral balances derived – the Budget Deficit (G – T), the Current Account balance (X – M) and the private domestic balance (S – I).

$$(S - I) = (G - T) + (X - M).$$

The sectoral balances equation says that total private savings (S) minus private investment (I) has to equal the public deficit (spending, G minus taxes, T) plus net exports (exports (X) minus imports (M)), where net exports represent the net savings of non-residents' (Mitchell, 2009).

Taking the UK or USA as an example, given the persistence of a current account deficit ($X < M$) the private sector can only net save ($S > I$) if there is a public sector deficit ($G > T$). Given the likely desire of the private sector to wish to net save the public sector deficit must be large enough to satisfy private net savings desires plus the current account deficit at the full employment level of income.

If the deficit is too small the private sector will not be able to realise its net saving desires at full employment income and, assuming no change in the current account deficit, income will fall until desired saving equals actual investment. The government's fiscal policy should be designed to achieve the goal of full employment. A deficit would only be too large if it increased private sector net saving beyond desired levels at the full employment level of income. In this case inflation would be the result. The size of the public sector deficit and debt would be of no consequence in themselves, only the macroeconomic outcomes matter. The existence of significant unemployment or underemployment would be *de facto* evidence that that the deficit was too small no matter its absolute size or its magnitude in relation to national income.

MMT distinguishes clearly between countries that issue their own non-convertible currencies and those that don't, for example, nations using the euro. Euro-using nations have ceded their money-issuing power to another entity, the European Central Bank. Each nation's government is forced to act as a 'currency user' (rather reminiscent of US states). In this case taxes do fund spending, borrowing from private sector euro holders may be necessary to fund spending, default is technically possible and, in the absence of ECB assistance, the need to sell debt on bond markets may drive yields to very high levels.

MMT provides a compelling picture of the core or operational reality which is present in monetary systems. MMT makes a clear distinction between the operational reality present when governments issue their own fiat currency under floating exchange rates and the different core reality that exists under a regime where the currency is convertible into a commodity at a fixed rate or in fixed exchange rate regimes.

Each operational monetary reality has an accompanying socio-political layer. Elements of this layer may be essential responses required to maintain the operational integrity of the monetary system or they may be unnecessary additional constraints which are imposed for primarily ideological reasons.

Operational Reality and the Socio-political Layer

To understand the development of the current socio-political layer we might first consider an earlier time when a different core reality existed, creating its own socio-political layer. The legacy left by this layer remains much in evidence today. Its original purpose was beneficial – to mitigate the effects of an earlier operational reality on society. However, it has outlived its usefulness and, in a modern context, far from being of benefit it acts to the detriment of society, preventing the government from fully exploiting their power as monopoly issuer of the currency to pursue public purpose.

It is to an analysis of this earlier core reality that we now turn. The development and eventual hegemony of this earlier monetary reality was intimately linked to a much wider change in society and the relationship between economics and society itself; specifically, the introduction of the self-regulating market and what it required, in particular in relation to the actual operation of the monetary system. For the following analysis I will rely heavily upon the work of Karl Polanyi, especially his seminal text of 1944, *The Great Transformation*.

Polanyi denies the universal nature of markets. He charts the growth of the importance of markets and considers the hegemony of the market system to be a recent phenomenon. For Polanyi, man's supposed innate desire to truck and barter is much exaggerated, early societies were not based on market forces, but on reciprocity and redistribution. Markets, up until comparatively recently, have always been embedded in society, their influence had been controlled to protect the structure of society. The 'disembedding' of markets – where society is ordered so as to serve the self-regulating market is considered by Polanyi as essentially a nineteenth century experiment; one that, if continued without hindrance would destroy the nature of society itself. It involved the marketization of land, labour and money. It required reducing their essential nature to that of commodities. However, they can only be 'fictitious commodities'.

'The crucial point is this; labour, land and money are essential elements of industry; they must also be organised in markets; in fact, these markets form an absolutely vital part of the economic system. But labour, land and money are obviously not commodities; the postulate that anything that is bought and sold must have been produced for sale is emphatically untrue in regard to them. In other words, according to the empirical definition of a commodity they are not commodities. Labour is only another name for a human activity which goes with life itself, which in turn is not produced for sale but for entirely different reasons, nor can that activity be detached from the rest of life, be stored or mobilized; land is another name for nature, which is not produced by man; actual money, finally, is merely a token of purchasing power which, as a rule, is not produced at all, but comes into being through the mechanism of banking or state finance. None of them is produced for sale. The commodity description of labour, land and money is entirely fictitious' (Polanyi, 1944, p.75-76).

Polanyi introduced the idea of the 'double movement'; the attempt to treat land, labour and money as commodities, in order to create a unified market society, was a utopian project which was bound to create, in turn, a countermovement required to prevent the destruction of society. For Polanyi, there was nothing natural about a market economy; it had to be planned from the outset.

'The road to the free market was opened and kept open by an enormous increase in continuous, centrally-organized and controlled interventionism. To make Adam Smith's "simple and natural liberty" compatible with the needs of human society was a most complicated affair' (Polanyi, 1944, p. 146).

Although the development of a market society was planned, the responses to its introduction were spontaneous, essentially defensive, and necessary as a means to protect the structure of society from the action of the self-regulating market.

'While laissez-faire economy was the product of deliberate state action, subsequent restrictions on laissez-faire started in a spontaneous way. Laissez faire was planned; planning was not' (Polanyi, 1944, p.147).

'The legislative spirit of the countermovement against a self-regulating market as it developed in the half-century after 1860 turned out to be spontaneous, undirected by opinion, and actuated by a purely pragmatic spirit' (Polanyi, 1944, p.147).

The critical element in the market for money was the introduction of the gold standard. This introduction forced governments to subjugate the use of their budget to the requirement to maintain the value the currency in terms of gold.

'Finance-this was one of its channels of influence-acted as a powerful moderator in the councils and policies of a number of smaller sovereign states. Loans and the renewal of loans hinged upon credit, and credit upon good behaviour. Since under constitutional government (unconstitutional ones were severely frowned upon) behaviour was reflected in the budget and the external value of the currency cannot be detached from the appreciation of the budget, debtor governments were well advised to watch their exchanges carefully and to avoid policies which might reflect upon the soundness of the budgetary position. This useful maxim became a cogent rule of conduct once a country had adopted the gold standard, which limited permissible fluctuations to a minimum' (Polanyi, 1944, p. 14).

Under the gold standard the operational reality was different to the reality facing a government issuing its own fiat currency under floating exchange rates. When the gold standard operates the government, effectively, becomes a currency-user, 'When the government buys anything other than gold, they have to have, so to speak, money in the bank to pay for it. The government, like everyone else, is prohibited from simply printing money to pay for the things it buys. Everything else [other than gold] on which the government spends is covered by taxes or borrowing. Therefore, expenditures by the government from its account at the Fed are continuously offset by receipts of taxes or borrowed funds' (Mosler, 2012, p. 40, parentheses added).

The international mechanism which allowed the gold standard to function was constructed over an extended period around the revolutionary utopian idea of a self-regulating market. In principle, when nations joined an international economic community using a gold standard, trade imbalances would be removed by gold movements (provided the system was allowed to work unhindered). A nation in deficit would pay in gold requiring, in principle, a reduction in its money supply. The consequent deflation and contraction would restore competitiveness, raise exports and move its external account towards equilibrium. In contrast, the surplus country would receive the gold allowing monetary expansion. The consequent inflation and expansion would reduce competitiveness and, in turn the trade surplus would fall.

In practice such a process would be slow and painful and central banking could provide a defence; the central bank could mitigate its effects by raising the bank rate to stem the gold flow. Raising the interest rate would make a holding a nation's currency or its government's bonds more attractive than previously in comparison to conversion into gold. The 'go-to' policy of nations facing a gold drain was to raise the bank rate. A higher interest rate should spread the adjustment burden by reducing the demand for bank credit, slowing growth of income and thus reducing the inflow of imports. This would be a far less painful form of adjustment than the deflation following from an outflow of gold. Such a policy, though, would represent a corruption of the self-regulating market for money as interest rates, in principle, should be left to the market and be determined by the balancing point between the supply and demand for loanable funds in domestic currency.

Central banking can be viewed as an intrinsic part of a necessary countermovement in Polanyian sense. It was an essential introduction under a gold standard. Without it, deflationary adjustment would be too painful. Central banks however, would need to adjust their interest rates to the situation

vis-a-vis protection of gold reserves, to this extent interest rates were 'market determined'. The central bank could not set interest rates at a level suitable to optimise domestic performance; its priority was maintain the nation's integrity as a member of the gold standard club.

'Under nineteenth-century conditions foreign trade and the gold standard had undisputed priority over the needs of domestic business. The working of the gold standard required the lowering of domestic prices whenever the exchange was threatened by depreciation. Since deflation happens through credit restrictions, it follows the working of commodity money interfered with the working of the credit system. This was a standing danger to business. Yet to discard token money altogether and restrict currency to commodity money was out of the question, since such a remedy would have been worse than the disease.

Central banking mitigated this defect of credit money greatly by centralizing the supply of credit in a country, it was possible to avoid the wholesale dislocation of business and employment involved in deflation in such a way as to absorb the shock and spread its burden over the whole country' (Polanyi, 1944, p. 203).

So we can see that, in the days of the gold standard (and fixed exchange rate regimes), the government's budgetary policy was constrained by external forces - effectively it had to act like a currency-user- and it's central bank's interest policy was not free to be used to pursue public purpose. The use of interest rates became part of the socio-political layer and had to be tailored to the needs of the self-regulating market.

'If the trading class was the protagonist of market economy, the banker was the born leader of that class. Employment and earnings depended upon the profitability of business, but the profitability of business depended on stable exchanges and sound credit conditions, both of which were under the care of the banker. It was part of his creed that the two were inseparable. A sound budget and stable internal credit conditions presupposed stable foreign exchanges; also exchanges could not be stable unless domestic credit was safe and the financial household of the state was in equilibrium.

In the 1920s, the gold standard was still regarded as *the* precondition of a return to stability and prosperity, and consequently no demand raised by its professional guardians, the bankers, was deemed too burdensome if only it promised to secure stable exchanges' (Polanyi, 1944, p.208, emphasis in the original).

'All western countries followed the same trend, irrespective of national mentality or history. With the international gold standard the most ambitious market scheme of all was put into effect, implying absolute independence of markets from national authorities. World trade now meant organizing life on the planet under a self-regulating market, comprising labour, land, and money with the gold standard as the guardian of this gargantuan automaton. Nations and peoples were mere puppets in a show utterly beyond their control. They shielded themselves from unemployment and instability with the help of central banks and customs tariffs, supplemented by migration laws. These devices were designed to counteract the destructive effects of free trade plus fixed currencies, and to the degree in which they achieved this purpose they interfered with the play of those mechanisms' (Polanyi, 1944, p. 226).

The old operational reality has now gone (at least for countries which are not part of the euro or operating under fixed exchange rates). The nature of the relationship between the core monetary reality and the socio-political layer has drastically changed from the situation which prevailed under the gold standard and the Bretton Woods system of fixed exchange rates. 'Sound money' government budgeting and 'market-led' interest rates might have been seen as necessary and beneficial under the gold standard but now they are out-of-date and hamper progress.

However, in general, neo-liberal politicians and neo-classical economists have a deep yearning for the old operational reality. So much so they retain the old socio-political coating that is now out-of-date. However, from their point of view it is essential – a vital restraining influence upon democracy and the ability of the state to use its position as issuer of a non-convertible currency under floating exchange rates to pursue public purpose. I am not of course suggesting they understand the situation in this way! We might consider two ‘market-orientated’ perspectives.

Both advocates of the gold standard and monetarists/new classical economists favour the subjugation of government policy to the impersonal forces of the market but approach the issue from different perspectives. Both groups favour fixing one thing and letting the market do the rest! For the ‘gold bugs’ the exchange rate should be fixed, setting up a core monetary reality which requires government monetary and fiscal policy to be constrained by the needs of the market. These manifest themselves in the political system where budgets and interest rate policy must satisfy the requirements of the international market for money. Monetarists take a different approach; they believe that monetary growth should be fixed and market forces should be left to deal with everything else including the exchange rate. Friedman is critical of the working of the gold standard in practice. In his famous interview on the gold standard he points out how the theoretical mechanism which is built into the gold standard fails to deliver the goods, citing the Great Depression as an example. However, he is careful to specify human error as the real culprit. He contends that the Federal Reserve had sufficient gold reserves to expand the money supply and prevent an economic catastrophe. According to his perception, they failed to do so and so the crisis continued. For monetarists, the preferred way to subjugate democratic government to markets is for the central bank to use its supposed ability to determine the rate of growth of the money supply to guarantee price stability. However, such an approach naturally ties the hands of government and central banks alike with respect to the use of discretionary policy. If the central bank fixes the supply of money then demand for money must determine the interest rate. Thus interest rates would be beyond the control of the authorities and in the hands of the market. Governments would be constrained in their use of fiscal policy, unable to use deficit spending to expand the economy. If the deficit was financed by ‘printing’ money or selling debt directly to the central bank this would break the money growth rule and thus be inadmissible. If it was financed by the sale of debt to the private sector this would raise interest rates and ‘crowd out’ private sector investment. Both approaches are based on faith in markets and were utopian, neither was practical in reality. As we have already stated, the introduction of the gold standard generated spontaneous responses which were essential if society was not to be annihilated. Its mechanism had to be impaired in order to protect society.

In the same way it is impossible for a central bank to control the rate of growth of the money supply in practice. The so-called Volcker experiment provides supporting evidence for this assertion. In 1979, when Paul Volcker was chairman of the Fed, the intermediate target of choice was changed to the rate of growth of M1. Implicit in this approach was the need to, ‘allow the fed funds target to rise as high as necessary to allow achievement of this goal. The Fed would calculate the total reserves consistent with its monetary target then subtract existing borrowed reserves to obtain a non-borrowed reserve operating target. If the Fed did not provide sufficient reserves in open market operations (as it hit its non-borrowed reserve target), banks would simply turn to the discount window, causing borrowed reserves to rise (and, in turn, the Fed to miss its total reserve target). Because required reserves are always calculated with a lag [Wray gives full details], the Fed could not fail to provide the needed reserves at the discount window. The Fed found it could not control reserves’ (Wray, 1998. p.101).

Conventional thinking is based on the idea that banks need excess reserves before making loans and a ‘deposit multiplier’ exists. However, in practice, banks make loans without reference to prior reserve positions. Faced with a customer deemed credit-worthy, a bank makes the loan and obtains the reserves later. Thus the quantity of reserves is determined by the amount of loans issued not the other way round. In this case, the role of the Fed is passive. ‘If banks in the aggregate are short of

required reserves, the central bank must supply them either through open market purchases or the discount window; trying to restrict reserves through fewer open market purchases merely forces banks to the window. It is simply impossible for the Fed to refuse to supply the reserves needed by the system' (Wray, 1998, p.118).

We can see that monetarism, in its 'pure' form, is simply another utopian project which cannot work in practice. A policy following the monetarist blueprint would require wild swings in interest rates at best and the breakdown of the inter-bank payments system at worst. Clearly such a situation would be politically unacceptable; this was reflected in the socio-political layer in the time of the monetarist heyday. I well remember Friedman's response to the introduction of the so-called Medium Term Financial strategy (MTFS) in The UK. He was very supportive of the idea of the introduction of monetary targets but scathing about the use of interest rates as the means to achieve them, preferring, of course, the use of reserves (in his view the 'raw material' of money) as targets. The utopian nature of monetarism was apparent; true monetarism would mean the imposition of too heavy a cost on society so a 'nominally' monetarist approach was adopted which allowed the government in the UK to draw on the free market dogma and inflation-prioritising of monetarism while keeping interest rates under their control for political purposes. In a sense, the Thatcher government attempted to have their cake and eat it.

Interestingly, central banks, while accepting the practical problems associated with basing policy on mainstream economics (whether that be monetarism, an 'updated' version of monetarism or the current go-to theory of choice for most central banks, new-Keynesianism), have still maintained its theoretical credibility.

Clearly accepting short term money neutrality and using 'pure' monetarism would be a practical disaster but rejection of mainstream theory is also off the menu. New Keynesianism is very useful as it accepts the short term non-neutrality of money, legitimising a central bank's use of the short-term interest rate to influence not only inflation but also real variables. Crucially though, new Keynesianism retains the view that money is neutral in the long run and therefore merely determines the price level. Central banks can also join the 'have your cake and eat it' party.

'Rather, in the long run, monetary policy determines the nominal or money values of goods and services—that is, the general price level. An equivalent way of making the same point is to say that in the long run, monetary policy in essence determines the value of money—movements in the general price level indicate how much the purchasing power of money has changed over time. Inflation, in this sense, is a monetary phenomenon.

However, monetary policy changes do have an effect on real activity in the short to medium term. And though monetary policy is the dominant determinant of the price level in the long run, there are many other potential influences on price-level movements at shorter horizons. There are several links in the chain of causation running from monetary policy changes to their ultimate effects on the economy' (The Bank of England, 2011).

The practical impossibility of controlling the quantity of bank reserves and the need to set the short term interest rate exogenously may have been recognised and reflected in the political layer. However, the fact that the new operational reality meant the removal of constraints which had previously prevented the state or central bank from controlling the whole spectrum of interest rates has not been recognised in the political layer.

This turn of events provides useful insights into the relationship between the operational reality and the socio-political layer. Despite the realisation of the need to set the overnight rate rather than the quantity of reserves, determination of longer term rates was 'left to the market.' That such an approach was a choice not an operational necessity, as it once was, was not understood. Failure to grasp the nature of the new operational reality, firstly by economists and, secondly, in the socio-political layer meant the retention of both the erroneous view that flexible market-driven, long term interest rates had the ability to coordinate saving and borrowing and of an unwarranted fear of

'crowding out.' Such a situation has had serious consequences for the conduct of both monetary and fiscal policy.

The state could (and still could) use its position as monopoly issuer of the currency to control the whole spectrum of risk-free rates; or to put it another way it could determine the shape of the yield curve. All that would be required would be for the central bank to agree to buy unlimited quantities of government debt at prices consistent with their targeted interest rate for any maturity. This would result, potentially, in significant central bank balance sheet expansion.

The mainstream view of money has had a critical role in this non-recognition; if money was viewed analytically, at least, as a commodity rather than as credit, 'loanable funds' theory could make logical sense. Households would supply loanable funds to banks in increasing quantities in response to higher interest rates, as the opportunity cost of spending was rising. If demand for loanable funds rose then higher interest rates would be required to induce households to supply them. The long term interest rate must therefore be left to the market and allowed to rise in order to generate sufficient saving to meet demand from borrowers, otherwise there could be a chronic shortage of saving. Underlying this view is a metaphysical belief in the equilibrating powers of flexible long term interest rates.

If the long term rate was set too low, then borrowing would be higher than its 'optimum' level and would not be supported by saving. The result would be 'malinvestments'; a credit boom and, inevitably, a crash. The mainstream view of the nature of banking lent weight to this approach. Mainstream theory treats banks like funds. Funds take money from a source or sources and lend or give the money to others. Banking however, is a fundamentally different process. Banks do not take deposits and then lend them out. Indeed banks may make loans without the possession of prior deposits (or reserves). Banks take a position in assets by granting credit to borrowers and at the same time accept liabilities upon themselves. The granting of a loan by a bank is fundamentally a balance sheet expansion exercise. A bank customer who is granted a loan gains a bank deposit (a liability to the bank) and at the same time the bank acquires an asset – the loan. Assuming the loan is spent and the receiver of the credit holds an account in a different bank the lending bank will find that initially its balance sheet shrinks i. e. it loses the deposit and reserves. However, once the loan is repaid (with interest), the reserves are replenished (with additional reserves equivalent to the interest) on the asset side. On its liability side the interest payment has boosted the bank's net worth. Provided the borrower repays the debt in full the bank makes a profit on the transaction. It is clear from this mechanism that 'loans create deposits' not the other way round.

Consistent with the erroneous mainstream view of money, banking and interest rate determination is the 'crowding out' hypothesis. Higher government borrowing would increase demand for loanable funds. Like any other 'commodity' its price- or interest rate- would rise. This higher interest rate would reduce private sector borrowing. Given the mainstream preference for private investment over public investment such a situation should be avoided as a matter of urgency.

In the current operational reality, 'borrowing' by the state is not operationally required and even if the state decided to borrow, there would not be any straightforward correlation between increased deficits and rising long term rates. Under the gold standard, governments were constrained in their spending by their ability to tax and borrow. If a fiscal deficit existed there would be untaxed spending in the system which could be converted into gold at a fixed rate. In this case the state would need to offer 'market-determined' rates to induce holders to buy non-convertible government debt rather than convert into gold.

The new operational reality is different. The government spends first, and creates reserves, *ex nihilo*. It is never revenue-constrained as a currency-user might be. The 'borrowing' operation which removes the reserves is voluntary in an operational sense. *The state has no need to borrow*. It could allow any untaxed spending to remain in the system. The problem with this is that such a policy would result in the overnight rate falling to zero (if no other action was taken; see below for further elaboration of this point). Banks cannot reduce the aggregate level of reserves in the system. Excess reserves would mean that banks would try to lend them on the overnight interbank market driving the interest to zero. In operational terms sales of debt are not a borrowing activity but are required to maintain a positive short term interest rate.

Mosler's view of the operational reality of the banking system might be considered as more radical than a 'standard' Post-Keynesian approach. For Mosler, 'loans simultaneously "create" both deposits and any required reserves, as a point of logic and a matter of accounting. It is never about the central bank "accommodating" reserve needs, as in the first instance, a "need" *is* an "overdraft" in the bank's central bank account; it *is* a loan, and is, in fact, booked as a loan from the central bank if the "overdraft" remains on settlement date. The only way the central bank could "not accommodate" would be to prevent the check or interbank transfer from occurring in the first place, which is beyond impractical and even moot in the case of deposit insurance where the government guarantees clearing of client checks written against insured deposits. Therefore the central bank requires banks to have sufficient equity capital and sets asset and liquidity standards required of banks so that it can prudently allow "daylight overdrafts" of member bank clearing accounts in the normal course of business' (Mosler, 14 March, 2015, emphasis in the original).

Mosler emphasises that this is a critical insight provided by MMT and bemoans the fact that, 'most all Post Keynesians today still cling to the narrative that the central bank "must" accommodate system-wide reserve needs to "prevent disruption" and/or "manage the interbank rate". He agrees that, 'the central bank "manages" rates when it "prices the overdraft," but adds the caveat that, 'the overdraft in any case is "created" at the instant the loan/deposit/overdraft is created'. For Mosler, 'this takes away the significance of the question, ' "What would happen if the CB doesn't accommodate?"'- something which monetarists insist they should not do when the "money supply is too high" and Post Keynesians respond with "they must" to "maintain orderly clearing" or something else unsatisfying to monetarists and others' (Mosler, 14, March, 2014). The failure to understand this key insight has the unhappy consequence of 'keeping the issue as an open question' (Mosler, 14, March, 2014).

In the pre-GFC era, many central banks implemented their monetary policy by setting interest rate targets and altering the supply of reserves in order to keep market rates in line with the policy rate. In most cases this was done using a variant of the so-called 'corridor' system. Following the GFC there were widespread operational changes in the implementation of policy; this manifested itself in part by changes such as the introduction a 'floor system'. In the aftermath of the crisis central banks used extraordinary measures to boost bank lending. There was an explosion of bank reserves (see Keister and McAndrews, 2009) and in order to prevent the overnight rate falling to zero central banks were forced to offer an overnight rate of interest on reserve deposits equal to their target rate.

A full discussion of the corridor system and its variants is beyond the scope of this paper. For a detailed analysis, see Mosler (2012, p. 47-57), The Bank of England (2010, p. 292-300), Lavoie (2010, p. 3-17). Mosler's approach differs methodologically from the 'standard' corridor model. It might be considered as a 'pure' system-wide model and its fundamental insight comes from an analysis of the system as a whole. In contrast, the 'standard' model, exemplified in the Bank of England Paper (2010), takes as its starting point the expected behaviour of individual profit-maximising banks. From this perspective, it is possible to derive the expected shape of an individual bank's demand for reserves and, by implication, the demand curve for reserves as whole. Given the shape of the demand curve, the central bank can adjust the aggregate amount of reserves using open market operations so as to hit its target rate. The on-demand standing facilities (or discount window) and the deposit rate (if present) give a ceiling and floor to the overnight rate and limit the potential divergence of the overnight rate from the policy rate.

We come now to the crux of the question; mainstream theory maintains the illusion that self-imposed constraints are actually part of operational reality. Such a view has profoundly detrimental consequences for the conduct of policy. The mainstream perception of money underlies their approach; money is treated as a true commodity, and the interest rate thus becomes the variable which coordinates the actions of savers and borrowers; its mystical power to balance the two and generate equilibrium is lauded. However, this ontological view of money is at odds with Polanyi's contention that money is a *fictitious commodity*. As Innes has told us, *money is credit and always credit*. The quantity of money is an endogenous variable; demand for loans creates the supply of loans (subject to 'satisfactory' creditworthiness being perceived by creditors).

There is no market for money in a neo-classical sense and the interest rate has no magical powers, allowing it to generate equilibrium. The risk-free rate of any duration is always under the control of the issuer. The rate of interest charged by banks is merely this risk-free rate plus a risk premium. As discussed earlier, according to mainstream theory increased government borrowing will raise the

price of borrowing – the interest rate. However, this has not happened; take the cases of Japan, the UK and the US, where we have seen massive and growing government deficits yet falling bond yields. Mainstream theory has produced some weird and wonderful explanations- or ‘immunising stratagems’- for this, which we won’t discuss here. Perhaps deep down bond dealers know the truth; that a nation issuing its own currency can always control the long term interest rate and- when push comes to shove – it will ignore its neoliberal mainstream dogma and do just that; QE being a case in point.

The global financial crisis, apparently, has at least persuaded central banks to grudgingly accept a few heterodox ideas. The article ‘Money Creation in the Modern Economy’ (Bank of England Quarterly Bulletin 2014, Q1 p. 25-27) is notable in this regard. However, ‘one swallow doesn’t make a summer’, and we are a very long way from general central bank acceptance of the new ideas put forward by Post-Keynesians in general and MMT, in particular.

In principle, the ideas grounded in monetarism now often described as neo-liberal which support the use of floating exchange rates should have allowed the introduction of approaches which ‘freed up’ fiscal and monetary policy, allowing governments to pursue public purpose. Clearly this hasn’t happened. The legacy of fixed exchange rate regimes has remained firmly entrenched in the socio-political layer. Tight budgeting, no longer required to protect the exchange rate, is retained for entirely different, primarily ideologically reasons; the metaphysical idea that governments are less efficient in using resources than the private sector. Deficit financing is still out of fashion but no longer due to the influence of external constraints. The old theory of interest rate determination – loanable funds – is also a useful hanger-on from the past- it underpins the idea that if the government borrows from a fixed pot of saving it will drive up interest rates and ‘crowd out’ private sector investment.

Mainstream thinkers consider what was formerly essential to mitigate the effects of membership of the gold standard or fixed exchange rate regimes as still being an essential part of operational reality but this is patently not the case. Much of what was once ‘useful’ is now defunct and part of a large unnecessary baggage of self-imposed constraints which prevent democratic government from making full use of their much-expanded policy space to pursue public purpose. The political pull of the self-regulating market is still very strong, possibly getting stronger as the political environment moves to the right.

The mainstream view is no longer valid for countries issuing their own non-convertible currencies and only has meaning for those operating under fixed exchange rate regimes,

‘The two monetary systems are very different. You cannot apply the economics of the gold standard (or USD convertibility) to the modern monetary system. Unfortunately, most commentators and professors and politicians continue to use the old logic when discussing the current policy options. It is a basic fallacy and prevents us from having a sensible discussion about what the government should be doing. All the fear-mongering about the size of the deficit and the size of the borrowings (and the logic of borrowing in the first place) are all based on the old paradigm. They are totally inapplicable to the fiat monetary system’ (Mitchell, 2009).

The key issue to highlight here is the critical difference in the relationship between the core reality and its accompanying political layer under the gold standard and under a fiat system. Under the gold standard the political layer contained the results of the double movement in practice, as society protected itself by the development of a ‘protective belt’. This included a huge array of reactions such as labour laws and trade unions to mitigate the effect of a self-regulating market for labour. However, here we will focus on a consideration of the market for money. To recap, central banking may be viewed in this light as a spontaneous and necessary response to the operation of the international market for money.

The current situation may be viewed differently, with respect to money at least. Neo-liberalism wields huge influence and effects on labour are strong, many of the post war gains have been wiped out.

Trade union power has waned and labour's ability to protect itself has been reduced. Nevertheless the power of a self-regulating market continues to be impaired; albeit to a lesser extent. Without this countermovement labour's relative position vis-a-vis capitalist elites would be even worse.

We might now consider the opportunity afforded by the new monetary reality, effectively modelled by MMT. A new socio-political reality is possible which throws off the shackles of the old. The government can now act as a currency issuer and pursue public purpose. Functional finance is now the order of the day. For most nations, issuing their own fiat currency under floating exchange rates the situation is different to the days of fixed exchange rates. Since the gold window closed a different core reality exists – one which, potentially at least, provides governments with significantly more scope to enact policies which benefit society. However, the political layer, in the way it interacts with monetary reality, has a detrimental effect on the power of democratic governments to pursue public purpose. In the new monetary reality political arrangements that sprang up under the old regimes are no longer necessary or beneficial. They can largely be considered as self-imposed constraints on the system; in short the political layer contains elements which are out-of-date, ideologically biased and unnecessary. However, mainstream economists have not grasped this situation – or perhaps they cannot allow themselves to- because of the vice-like grip that their ethics and 'traditional' training has on them.

Under the gold standard or fixed exchange rate regimes, it was necessary for a government to subjugate its budgetary policy to the needs of the international monetary system. If it wished to be part of the gold standard club, it had, in effect to act like a currency- user in its own currency. Nowadays, for most nations, a different monetary reality exists, one which allows governments freedom to act as currency issuers.

However, given the hegemony of neo-liberalism, governments operate under different rules but still continue to act *as if* they were currency users. In practice, the political layer includes several outdated blockages. Notable examples include the imposition of debt ceilings, prohibition of direct sales of government debt to the central bank and the need for government treasury departments to hold positive balances at their own central banks.

An understanding of MMT allows us to see these rules as self-imposed constraints. They are no longer required to mitigate the effects of the self-regulating market, yet they are retained. For those who cannot recognise the new core reality and remain embedded in the old one they remain essential or at least are stated as being so.

However, in practice they are often circumvented; when the political situation demands it, governments will exercise their power as currency issuers. The situation is complex as politicians publically endorse their critical importance but then carry out policies designed to circumvent their impact - only, of course, when it suits their political purposes. Their actions, of course would never be described in those terms and the impact of the voluntary constraints would never be sufficiently and consistently avoided so as to allow public purpose to be pursued.

A case in point would be the so-called 'debt ceiling' in the USA. Under conditions of the gold standard a debt ceiling may have had some operational meaning since an ever-increasing level of untaxed spending would increase the risk of conversion into gold and a loss of reserves. Higher and higher interest rates may, in principle, have been required to prevent a loss of gold. In a modern context, with no convertibility, the need for a debt ceiling has gone. The level of net spending by the government should be set at the level required to maintain full employment. Debt ceilings, however, have great appeal to 'libertarian' groups and therefore remain firmly entrenched within the socio-political layer. They represent, in essence, a limit on the government's willingness, not ability, to net spend.

A second example concerns the rule that central banks cannot buy government debt directly from their treasury. Again, in principle such a rule may have had some archaic operational value but in the

modern setting it is merely an unnecessary self-imposed constraint – based on a profound misunderstanding of the true operation of the monetary system and ideological prejudice against government deficit spending. The original idea behind the rule was to prevent ‘monetisation’ of public debt. If the government borrowed from its own central bank it would raise the money supply and according to mainstream views this would be inflationary. Therefore, debt would need to be sold to private sector holders of currency. In this case, provided the central bank did not ‘accommodate’ the sale by increasing reserves the money supply would not rise and there would be no inflationary consequences. However, ‘excessive’ sale of debt to the private sector was frowned upon for different reasons. As mentioned above, given the existence of limited savings to borrow, increased demand from the public sector would drive up interest rates and crowd out private sector investment.

However, in the pre-GFC days, when the Fed managed the level of reserves in the banking system in order to meet its federal funds rate target, monetisation was impossible in practice. ‘Once the Federal Reserve Board of Governors sets a fed funds rate, the Fed’s portfolio of government securities changes only because of the transactions that are required to support the funds rate. The Fed’s lack of control over the quantity of reserves underscores the impossibility of debt monetization. The Fed is unable to monetize the federal debt by purchasing government securities at will because to do so would cause the funds rate to fall to zero. If the Fed purchased securities directly from the Treasury and the Treasury then spent the money, its expenditures would be excess reserves in the banking system. The Fed would be forced to sell an equal amount of securities to support the fed funds target rate. The Fed would only act as an intermediary. The Fed would be buying securities from the Treasury and selling them to the public. No monetization would occur’ (Mosler, 2012, p. 26-27).

The irrelevance of the rule can be illustrated by the post-GFC use of QE. Given the insight that the government can only tax or borrow what it has already spent or lent the true relationship between the government and the central bank becomes apparent. The government must first spend or lend before the central bank can drain the reserves it creates by the sale of bonds. So the government always spends by creating new money, the sale of bonds is a voluntary activity used to maintain the overnight interest rate.

As we saw earlier, during the aftermath of the GFC the extensive use of QE caused a huge rise in the level of reserves. This would have caused the overnight rate to fall to zero had not central banks offered to pay a rate equal to their target rate on excess reserves. If monetarist ideas had any traction economies should have seen an explosion of monetary growth and inflation. Neither happened; the effect of QE is really the same as a direct sale of debt to the central bank. First the government spends then the central bank sells debt to soak up reserves, QE just means buying them back. Functionally, it is the same thing as selling the debt to the central bank in the first place! To reiterate an earlier point, in any case, there is no operational need to sell debt to either the private sector or the central bank, the Treasury can deficit spend and leave the excess reserves in the system. If the central bank wishes to pursue a positive interest rate policy it would merely offer a positive interest rate equal to its target rate on excess reserves held in the banking system if deposited at the central bank. Alternatively, it could allow the rate to fall to zero (ZIRP). *Under fixed exchange rates the ‘no direct sales of government debt to the central bank’ rule may have had an operational purpose; this no longer exists.*

Another self-imposed constraint is the requirement for treasuries to hold a positive balance at their own central bank before spending – for example, in the UK and USA. Meeting this requirement requires a particular sequence of transactions involving the central bank and the Treasury. This is because in order to obtain the necessary positive balance the Treasury must acquire non-government funds which it had already created itself by its own deficit spending. These non-government funds will more often than not be in the form of previously issued securities, necessitating a repo transaction be carried out by the central bank. In the case of the US, the Fed would carry out a repo, buying securities from the relevant private sector financial institutions. This provides the necessary reserves

for the private sector to buy the new issue of debt which is required by the Treasury to replenish its balance at the Fed. When the reverse repo transaction is carried out the private sector now holds more government securities than previously and the Treasury has a positive balance as required. A full explanation is provided by Wray (2012, p. 105-109).

'Since existing Treasury securities were issued as a result of a previous government deficit, it is the case that the reserve balances required to purchase treasury securities are the result of a previous government deficit or a loan from the Fed to the non-government sector. This is true even though the Treasury must have a positive balance in its account before it can spend, and even though the Fed is legally prohibited from providing the Treasury with overdrafts in its account' (Wray 2012, p107-108). Thus we have a self-imposed constraint *par excellence*, requiring financial legerdemain but in practice having no operational significance.

We might ask why the voluntary out-dated constraints are retained and certainly considered as vital long term elements of the system (although, as stated above they are often nullified in the short term for the purposes of expediency!)

It may be that most, if not all, leading politicians and their economic advisers do not understand monetary operations. If this is true it would be a worry! They may be stuck in fixed exchange rate logic when the 'old rules' applied. Alternatively, they may understand the system but choose to operate as a currency user in order to apply strict budgetary practice to encourage efficiency. They may be so deeply attached to the idea of the primacy and hegemony of markets that they may be unaware that the power held by private markets has been ceded to them by states as a matter of deliberate policy. They may believe that the historic growth of market power to be a 'natural' and positive development; this means they are 'naturally' constrained in their actions. For example, a government may be concerned about the effect of a change in macroeconomic policy on interest rates, even though it possesses the intrinsic power to control the whole spectrum of rates. The situation regarding the exchange rate is more complex (see Knapp, 1924, p. 216-230), as a nation state cannot know for sure the effect of a given economic strategy on the exchange rate. However, it is far from certain that adopting a full employment strategy would generate a catastrophic fall in the exchange rate, as pessimistic neo-liberals suggest. If the worst came to the worst, exchange controls could be used to control the rate; a small price to pay for full employment.

Concluding remarks

It seems to me that the mainstream view of money is highly unsatisfactory or, to put it another way, the 'good' story turns out to be 'not-so-good' after all. A theory of money must find supporting evidence if it is to be taken seriously. Credit and state theories do just that. They are complementary and provide a sound basis for modelling a monetary economy.

It is my belief that MMT produces models which are consistent with these approaches of analysing money. Thus MMT enables us to understand the fundamental mechanisms at play in the monetary system and, importantly, to distinguish between the nature of the core or operational reality in different types of monetary systems. There is a highly significant difference- which cannot be overstressed- between the core reality of a monetary system where a government issues its own fiat currency under floating exchange rates and fixed exchange rate systems such as the gold standard, the Bretton Woods system and monetary unions such as the EMU, where euro-using nations have ceded their monetary sovereignty to the European Central Bank. In the latter case, the ECB is the currency-issuer and member states are, effectively, forced to act as currency-users.

I consider that it is analytically useful to explicitly separate the core or operational reality from the socio-political layer. Such a separation allows us to distinguish those features which are intrinsic to the operation of the monetary system and those which are merely parts of a surrounding socio-political layer. We may consider the latter as externally or self-imposed constraints.

Should a nation decide to join the gold standard or a fixed exchange rate system, external constraints, especially with regards to fiscal and monetary policy decisions, follow and become embedded in the political layer. These constraints are *essential requirements that allow the system to function* without unbearable strain being placed on the economy. However, once no such external constraints exist, i.e. when a country issues its own fiat currency under floating exchange rates much of what was once an essential element of the socio-political layer- required to support the operation of bygone monetary system- *now becomes a matter of choice*. The retention of former modes of behaviour which were once necessary now becomes the voluntary acceptance of unnecessary constraints.

A different core monetary reality exists when countries issue their own fiat, non-convertible currency. In this situation governments are never revenue constrained. Government spending or lending always precedes taxation or bond sales. The central bank cannot carry out a 'reserve drain' before a 'reserve add'. This argument seems irrefutable on logical grounds. In this real world, the need for 'sound finance' and 'market-led' interest rates disappears. They are anachronisms that are irrelevant. In the new core reality the level of government spending needs to be adjusted so as to satisfy non-government sector tax liability and net saving demands at the full employment level of income (deficit levels and debt ratios *per se* become unimportant in themselves) and the state can use its position as monopoly issuer of the currency to control the whole spectrum of interest rates. Requirements such as debt ceilings, prohibitions of direct debt sales to the central bank and the illegality of treasury overdrafts at the central bank are seen merely as voluntary constraints - they are not part of the true operational reality and if a political decision was made to remove them, the core monetary reality would still function in the same way.

An understanding of MMT allows a clear distinction to be made between different core monetary realities and their impact on the relationship between the operation of the monetary system and the socio-political layer in countries with their own currencies (such as the USA, UK and Japan) and those without (e. g. euro-using nations). It contends that, in the case of the latter, taxes and bond sales do fund public spending in an operational sense and are no longer considered to be voluntary constraints.

I accept that such an analytical division between a core monetary system and a socio-political layer may be unacceptable to many; other groups consider the 'traditional' view of taxation and bond sales

as part of the fabric of a 'socio-economic reality' and as indispensable to the way capitalism operates in the real world. They consider them to be part of an unwritten social compact in which taxation must be seen as 'financing' public spending (the tax-paying public accepts its tax obligation because this money is 'needed' to pay for public services) and bond sales providing interest rates are the reward to the *rentier* class. In this view, they are not 'voluntary' additions to the system but an intrinsic part of its social reality (see Ingham, 2004, p. 56). In this view removal of the so-called 'voluntary constraints' may reduce the system's ability to function efficiently or even destroy it completely.

So we might contend that acceptance or rejection of the validity of the analytical division is based a differing ontological views of the essential nature of a monetary economy. An understanding of the applicability of the analytical division, allows an economist to understand the origin of criticisms which may be levelled at advocates of MMT. We might consider the fundamental origin of these criticisms to be ontological. For critics of MMT, the so-called voluntary constraints are no such thing! They remain part of the operational reality and economic models need to take account of this. For critics the dichotomy is false.

Of course, criticisms of MMT come from many sources. For example, even those broadly sympathetic to the use of MMT are often ardent critics of MMT's use of a consolidated treasury and central bank in their models- denying its validity (see Lavoie, 2011, for a 'friendly critique' and Palley, 2014, for a 'less-than-friendly' assault!) The application of the analytical division allows us to understand the basis for this critique. For advocates of MMT, it is perfectly reasonable to consolidate the treasury and the central bank when analysing operational reality. Indeed, should a nation wish to consolidate its central bank with its treasury in public ownership with both institutions explicitly working together to pursue public purpose it would have the ability to do so. More importantly, whether or not politics dictates that the two are considered as one or two entities, in reality treasuries and central banks *must* act in cooperation in the day-to-day operation of the monetary system if it is to function effectively.

For critics, the separation is part of core reality, capturing the true nature of the system, making consolidation invalid. The implication is that, for critics of MMT, the separateness is essential for the efficient functioning of the core monetary system or, at least, is so widely considered to be so within the socio-economic environment that consolidation is a practical impossibility.

It seems that, from this perspective, the debates between MMT economists and their critics (both 'hostile' and 'friendly') are essentially ontological in nature and based upon different views of what really counts as 'reality' in a capitalist system.

For supporters of MMT, the division between the treasury and the central bank is a matter of political choice. Consolidation, far from impairing the functioning of the system would support its function by removing unnecessary impediments to its effectiveness. Going further, it seems to me that an openly accountable consolidated central bank and treasury, pursuing public purpose would deliver the best results for the population and a monetary model based on this is effectively provided by MMT. Central bank independence is a utopian project, and can never be fully practically realised. It is also fundamentally undemocratic.

'In general, the central bank could easily be absorbed within a consolidated treasury and bank department with full political accountability being gained' (Mitchell, 2015).

Such a situation may seem a long way off and, perhaps, getting further away. However, even in the current situation, MMT provides the best monetary models out there and highlights the existence of additional policy space acquired by sovereign states since Nixon closed the gold window and most nations adopted floating exchange rates. We just need to encourage the use of the space to enhance the living standards of ordinary people.

The adoption of the self-regulating market- in particular, with reference to the market for money, the introduction of the gold standard- was a peculiar event. Viewed in Polanyian terms it involved the 'disembedding' of markets and required the structure and operation of the socio-political layer to become subjugated to the needs of the system. For current advocates of the 'efficient markets' hypothesis this time is viewed with great nostalgia - the gold bugs are still out there. However, most nations now have a new core monetary reality, allowing democratic governments to 're-embed' markets. However, this is not enough; the political layer must change and reflect this new underlying reality. Optimists- and there are many of us out there- still believe that, eventually, after the neo-liberal storm has passed, a recognition of this new scope for improving living standards will emerge. We might hope that Polanyi's words come to fruition and socialism again reasserts itself,

'Socialism is, essentially, the tendency inherent in an industrial civilisation to transcend the self-regulating market by consciously subordinating it to a democratic society. It is the solution natural to industrial workers who see no reason why production should not be regulated directly and why markets should be more than a useful but subordinate trait in a free society' (Polanyi, 1944, p. 242).

Author's note and acknowledgements

Time and space have prevented me from developing other themes related to the content of this paper, in particular the role of *wergild* in the genesis of money, a more detailed examination of the origins of MMT and the links between the work of Keynes and Polanyi, in particular. Such work will have to wait.

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