

Modern Monetary Theory and its relationship to heterodox economics

Phil Armstrong, April 2020

Appendix 6: An MMT perspective on banking

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Private Money Networks, Capitalist Credit Banking and the Development of Central Banking

1. Introduction

This thesis considers the ontology and economic sociology of money (Armstrong and Siddiqui 2019) and the views expressed in section 2.2 have clear implications for the conceptualization and nature of banking. Here, I provide a necessarily brief historical analysis of development of private money networks and banking which I believe complements my analysis of money. I first describe the development of private money networks before considering the crucial distinctions between early or 'primitive' banking and capitalist credit banking.

Similarly, the following historical analysis of central banking is, of necessity, brief. However, I hope to draw out some key insights that arise from an understanding of the broad sweep of history of central banking particularly in relation to the principles of MMT. Finally, I discuss the practical limits of so-called central bank independence and contend that confidence in technocratic CB control as opposed to democratic accountability is misplaced as is its associated faith in the efficacy of monetary policy relative to fiscal policy.

2. Private money networks

As we have seen (thesis section 2) a central stakeholder, commonly 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 her 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 community¹ (Martin, 2013; Boyer-Xambeu et.al. 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

¹ The activities of the Italian exchange bankers constitute an early stage in the development of capitalist banking. Rather than engage in "forced exchange" which was linked to transactions [either commercial or financial] that called for it' (Boyer-Xambeu et. al. 1994: 130, parentheses in the original), they exchanged in 'exchange *per arte*, which was carried out exclusively for the profit it brought' (Boyer-Xambeu et.al.: 130).

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, 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 I: 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).

3. Capitalist Credit Banking

Wray (1990), Ingham (2004a, 2004b) and Itoh and Lapavitsas (1999) have analysed the relationship between heterodox views of money and development of capitalist credit banking in detail. Wray notes,

Credit money was the first form of money, created as a unit of account. Markets were later developed, which led to the use of money as medium of exchange.... the money of account came to be measured by commodity money, first in the form of barley, later in the form of known weights of metals and finally in the form of stamped coins. Once markets had developed and the public had become accustomed to the use of coins, the government could increase its purchasing power through seignorage². In most cases government- issued commodity money and privately- issued credit money existed side-by-side in pre-capitalist societies. Fiat money is, for the most part, an innovation of modern capitalism. (Wray 1990: 54)

Wray then contends, with a note of irony, 'that once credit money has led to the development of commodity money, credit money ceases to be essential in pre-capitalist societies. For example, Athenian society and the Roman Empire functioned almost entirely on the basis of commodity money, and commodity money was the primary means of payment used in the Middle Ages' (Wray 1990: 54). However, once capitalism develops the situation changed; credit money became the essential form of money.

In a capitalist economy, production occurs not to satisfy needs or to produce goods which can be bartered, but to produce goods in markets to realize money. The social purpose of credit is to provide purchasing power to the capitalist so he can buy the goods and services needed today to produce the goods and services which will be sold tomorrow. If this sale takes place at the expected price, the

² Desan (2014) provides a thorough theoretical and historical analysis of application of control over the monetary system by monarchs and Parliament in England. Her analysis of the use of 'free minting' in the medieval period illustrates how kings were able to enrich themselves by seignorage.

capitalist receives sufficient money to repay his debt and retire the credit money.³
(Wray 1990: 55).

The earliest banks did not issue credit money and are often referred to as 'primitive' or non-capitalist (Ingham 2004b: 192-3; Usher 1934 [1953]: 264). Ingham (2004b: 193) distinguishes between two distinct banking activities. The earliest banks in Babylon and (to a small extent) ancient Greece and Rome accepted deposits and facilitated debt settlement between depositors by book transfer; the book money acting as a substitute for currency. Money lending using state coinage was also prevalent. However, 'Transfers between accounts had to be conducted in person, in the presence of the banker... in the banks of the ancient and classical world (Usher 1934 [1953]; Weber 1927 [1981])' (Ingham 2004b: 193). Capitalist banking, though, requires something more; the second banking feature identified by Ingham. Capitalist banking requires loans to be made via the issue of bank credit. 'This is the critically important development that allows a potentially limitless expansion of social power as abstract value in the form of money and makes possible the capitalist organisation of economic life' (Ingham 2004b: 193). Ingham notes that 'The transformation of the social relation of debt in the typically capitalist form of credit money began in earnest when signifiers of debt became anonymously transferable to third parties' (Ingham 2004b: 196).

He identifies two general periods: first, the use of bills of exchange by networks based in Latin Christian Europe (typically, the Italian exchange bankers discussed earlier) and second, the growth of the use of the bill of exchange which evolved in a way as to become an element of the public currency system especially in England and Holland (Ingham 2004b: 196). In their original form bills of exchange merely represented the value of goods in transit. Two networks were involved in their operation; first a trader would draw a bill on a local banker which he would use to pay for goods imported from outside his community. Second, the exporter would present the bill to his local banking network representative in order to exact payment. At this stage the bill of exchange did not form the basis for the development of credit; it merely allowed the smooth operation of trade (Ingham 2004b: 199). However, once the bill became dissociated from the goods it apparently represented, exchange *per arte* became possible- or exchange designed to make a profit from a financial transaction as opposed to the trade of the goods themselves.

³ This approach draws upon the idea of a 'monetary circuit' and forms the basis of modern circuit theory (Graziani, 2003; Lavoie, 2009).

This was known as 'dry exchange' - that is, the issue of 'pure' credit in the form of a bill without reference to particular goods. In turn, this eventually led to a further dissociation of the bill from any particular 'dry exchange' credit relation - that is, to the growing autonomy of depersonalised debt relations and their eventual evolution as a form of credit money. Again, it should be emphasised that this further development was the result of a particular social and political structure (Ingham 2004b: 199).

Despite the clear differences in their approach to money's nature and origins (Armstrong and Siddiqui 2019) the Marxian and Post-Keynesian perspectives on the development of capitalist credit banking have much in common (Itoh and Lapavitsas, 1999; Wray 1990, 2004; Ingham, 2004a, 2004b).

Itoh and Lapavitsas locate the origins of bank credit in commercial credit and also recognise that the issue of a bank loan is fundamentally a balance sheet expansion process noting that 'Banking credit typically emerges upon a foundation of commercial credit....Bank activities give rise to relations of credit and debit between the banks on one side, and several industrial and several industrial capitals on the other' (Itoh and Lapavitsas 1999: 92) further arguing that 'A bank can advance credit to a customer and so acquire assets on its own balance sheet either by creating a deposit or by directly issuing banknotes to a customer⁴' (Itoh and Lapavitsas 1999: 93) and 'in the course of bill discounting simultaneously acquire assets in the form of bills and create liabilities in the form of issued banknotes' (Itoh and Lapavitsas 1999: 94).

Itoh and Lapavitsas (1999: 92) note that bank credit is a 'higher grade of credit money' than the private credit which is based on inter-business or commercial credit and fundamentally they are, 'profit-making enterprises similar to industrial and commercial capitals.' (Itoh and Lapavitsas 1999:95). Wray (1998) expresses a similar view of banking,

⁴ The Bank Charter Act of 1844 (11) sets out a 'Restriction against issue of Bank Notes' namely '...It shall not be lawful for any banker to draw, accept, make, or issue, in England or Wales, any bill of exchange or promissory note or engagement for the payment of money payable to bearer on demand, or to borrow, owe, or take up, in England or Wales, any sums or sum of money on the bills or notes of such banker payable to bearer on demand, ... Words omitted repealed by Statute Law Revision Act 1891 and the Currency and Bank Notes Act 1928' (Bank of England 2010). Since this date the creation of a deposit, whilst simultaneously advancing credit to customer, has been the means used by banks to create credit money.

In reality the business of banking...is not much different from that of other profit-seeking firms. Banks, like other firms take positions in assets by issuing liabilities on the expectation of making profits...Banks “make loans” by purchasing IOUs of “borrowers”; this results in a bank liability-usually a demand deposit, at least initially-that shows up as an asset (“money”) of the borrower. Thus the “creditors” of the bank are created simultaneously with the “debtors” to the bank” (Wray 1998: 109).

Wray (2012: 92-96) explains the essential nature of banking. He stresses that the granting of a bank loan does not require prior access to deposits or reserves. Banks create money in the form of bank deposits by a bank sheet expansion exercise (see thesis, section 3.4 for an explanation of how banks operate and make profits). MMT advocates are often accused of concentrating on public sector monetary creation and destruction to the detriment of the private monetary circuit. I would argue that such criticism is in no way justified and reflects a lack of knowledge of the primary MMT literature on the part of its critics (see thesis sections 1 and 3.4).

4. Central Banking

The importance of political events in providing a platform for the specific development of central banks is noted by Ingham, with particular reference to England.

By the late seventeenth century, the two forms of money were available but unevenly spread across Europe - private credit and public metallic coinage. However, they remained structurally distinct and their respective producers - that is, states and capitalist traders - remained in conflict. It could be argued that England was best placed...to effect any integration of the different interests that were tied to the different moneys. But there should be no presumption of the inevitability of a hybridised form of money that combined the advantages of each. As ever, events were to prove decisive in tilting the balance away from the sovereign's monopolistic control of the supply of money (Ingham 2004b: 208).

The requirement to prevent a repeat of the Exchequer Stop default (or debt default on Treasury Orders) of Charles II in 1672 meant that William III faced particular financial conditions when accepting the constitutional settlement of 1689. He was given insufficient revenue by design, forcing his reliance on parliament for supplementary funding and, in addition, approved – under the guidance of his Dutch financial advisors - the government's use of 'Tontines' (long-term borrowing in the form of annuities) which required the allocation specific tax revenues to allow for the funding of the interest payments (Desan 2014: 303).

A closer examination of the specific political circumstances of the time which gave impetus to the move towards the establishment of the Bank of England is provided by Desan, who points to the key importance of 'influential Whigs...Whig merchants, manufacturers and others lined up to support the Bank both of interest and ideology...' She argues that, for Whigs, William Paterson's Bank of England proposition 'represented a new means of finance...Although Whig opinion was not uniformly in favour of the Bank, Whigs would strongly dominate its directorate, controlling its political manoeuvring against rival institutions' (Desan 2014: 303).

The Bank of England brought together public and private sector interests and provided the means for the government to borrow in order to spend. This borrowing would be financed by a credit fund provided by the Bank and, once activated by the government, it would manifest itself in a

circulating medium; namely the Bank of England note. The practical outcome of use of the Bank's credit is consistent with Innes's credit theory of money (Innes, 1913, 1914) –a theory founded on the supposition that the issuer of debt accepts its return in settlement of a debt to itself- when Bank notes were used by taxpayers to settle their liability to the government; a result described by Desan,

First, the Bank gave its paper issues to government agents who used them to pay public creditors. The Bank's loan had been made by December 1694 in the form of bills and notes⁵. By 1696 it had advanced an additional £1.567 million, mainly if not completely in paper issues, to the government. The government injected them into circulation: in that year more than £2 million notes were outstanding...Second, and after a somewhat more confused start, the government began to accept in payment what it spent in payment. Officials having used Bank notes to pay those who served or supplied it, quite predictably felt compelled to take the notes back in payment of taxes or public fees. Individuals holding the Bank's issues agreed of course. It helped them to hold an instrument that they or someone to whom they passed that note, could use to pay off a public obligation (Desan 2014: 311-12).

Desan argues that Paterson was not necessarily aware of this positive feature of his proposal, 'Paterson may not have understood that making bank notes receivable for taxes would, effectively, persuade people to use them more broadly to make other payments' but even so, taxpayers would not be expected to oppose the plan. 'Taxpayers had little reason to object to a practice that accorded value to the notes they held to pay off an obligation to a common creditor- the government...' Interestingly, Desan points to out that Paterson did not suggest it, nor was it officially advanced by parliament, nevertheless the fiscal story unfolded in that way. 'In any case he did not so propose, nor did Parliament add the proviso to the Bank of England Act. The practice would instead evolve *de facto* given the logic that the government should accept the same mode of payment it used' (Desan 2014: 313).

Desan further notes that, 'As the financial ties between the government and the Bank increased, it became more likely that the Exchequer would receive Bank bills or notes because it could return

⁵ 'The initiative that inaugurated Bank money had identified formal, sealed and interest-bearing *bills* as the new currency. In fact, it was not those instruments that would come to travel so widely but the unauthorized, informal and non-interest-bearing Bank *notes*. The change would redefine both the medium that circulated and the cost it carried for holders.' (Desan 2014: 309, emphasis in the original)

them to the bank to settle the government's account there. *Indeed, the logic echoed that which brought individuals to accept bank issues from the government because they could return them in the form of tax payments*⁶ (Desan 2014: 314, emphasis added). Desan is then able to describe how the fiscal system based around the efflux and reflux of Bank notes underpinned the ability of users to assign value to them,

The closed system worked out between Bank, government and individuals ensured that paper issues would have purchasing power (or act as a store of value) because it made predictable the outflow and withdrawal of that currency. It thus controlled the amount of money in ways holders could anticipate and calculate, allowing them attribute value to the instruments and create real balances. Most obviously, the government and Bank defined between themselves the amount of paper issued (Desan 2014: 316).

Clearly if the government accepted Bank money in settlement of tax liabilities and other fees due to the state it would cease to act as a circulating medium or public currency. This inflow and outflow constituted the mechanism underlying the stability of value of Bank debt; a point noted at the time by Lowndes. I would argue that Desan, following Lowndes (1691), correctly identifies the importance of *the fiscal flows associated with state spending and taxation as the root of the stability of the value of Bank currency* rather than the more obvious alternative of precious metal convertibility. 'As Lowndes (1691[1859]) recognized, the value of such paper did not depend on a tangible asset but on an operating system of public spending and withdrawing' (Desan 2014: 317). Desan points to identify of the real 'anchor' of the monetary system. 'Specie [precious metal coinage] acted as a kind of security, a default guarantee...specie was a legitimating device. The Bank's commitment to cash its demand instruments visibly limited the number it could issue. And the image of gold or silver in the vault gave those holding paper the sense that an anchor existed – even if the *anchor was actually elsewhere, in the sound functioning of the fiscal system.*' (Desan 2014: 318-9, emphasis added, parentheses added)

The government's acceptance of Bank notes as a means to settle tax liability had the effect of diminishing demand for specie, in turn, enabling the Bank to lend its principal as a long-term loan but in the specific form of short-term liabilities-notes and bills- and, importantly, meant that the

⁶ This is an outcome entirely consistent with the 'taxes drive money' logic underpinning MMT (see thesis section 2).

Bank need only hold a fractional reserve of precious metal (Paterson [1694] noted this point at the time⁷). Desan also notes how the development of Bank money as public currency opened up new options to the government,

the government itself had become a player with an interest in the continued currency of the paper money. It could always return a portion of that money to the Bank to service interest on the “perpetual loan”. Otherwise it could cash the paper issues, which would reduce the money supply, or continue to use the notes returned to it by channelling them back into circulation...The latter strategy held enormous power. It would extend the lifetime of the currency by creating another issue and withdrawal – or another loop that animated paper promises with monetary value. That strategy reduced the need for fresh loans from the Bank while maintaining the higher level of liquidity represented by the paper money. Moreover, it allowed the government to spend anew in money that would hold value as long as the government matched its outlay with taxes (Desan 2014: 319).

The resonance of this analysis and the ‘taxes drive money’ approach advocated by MMT is remarkable. From this perspective, the government, by accepting the return of Bank notes it has spent into circulation in payment of taxes, has given value to the paper money. By ensuring that taxation was set at the correct level it could maintain the value of its paper money; for a given level of government spending, if taxation was inadequate for this purpose, the relative value of Bank notes would fall. On the other hand, if taxation was too high, the government deficit (in terms of circulating Bank notes) would be low to maintain the levels of spending required to avoid upward pressure on the value of Bank money.

At this point I would contend that although convertibility into precious metal provides a perceived foundation for the issue of Bank money, in reality its ability to function as public currency is based upon its place in the structure of the extant fiscal system. Desan notes perceptively, ‘In effect, The English had invented a fiat currency under the cover of a fiduciary⁸ one’ (Desan 2014: 320). The role of the Bank of England in creating a public currency was also highlighted by Ingham (2004b), whose analysis, I would argue, complements that of Desan (2014).

⁷ Paterson (1694) refers to this opportunity in ‘A Brief Account of the Intended Bank of England.’

⁸ promises to pay specified amounts of gold or silver (source: <https://www.britannica.com/topic/fiduciary-money>)

In effect, the privately owned Bank of England transformed the sovereign's personal debt into a public debt and, eventually in turn, into a public currency...First, the private money of the bill of exchange was 'lifted out' from the private mercantile network and given a wider and more abstract monetary space based on an impersonal trust and legitimacy. This involved an underlying fusion of an emerging contract law and the traditional sovereignty of the monarch. Second, parliament sanctioned the collection of future revenue from taxation and excise duty to service the interest on loans (Ingham 2004b: 209-10).

However, this transformation of public debt into currency was-in a sense ironically- accompanied by a significant strengthening of role of the metallic standard relative to its historic role in practice;

these forms of money were introduced into an existing sovereign monetary space defined by an integrated money of account and means of payment based on the metallic standard. However, it must be borne in mind that during precisely the same period in which the Bank of England was established and the full transferability of debt was made legally enforceable, the precious metal coinage was greatly strengthened. That is to say, this process did not involve a 'dematerialisation' of money that was driven - intentionally or teleologically⁹ - to greater 'efficiency'. Whether from a 'theoretical' or 'practical' standpoint, overwhelming intellectual opinion across Europe was behind precious metallic money throughout the seventeenth and eighteenth centuries - and beyond. In England, Locke, Hume and, later, Smith argued unswervingly in favour of a strong precious metal money (Ingham 2004b: 210).

The practical political implication was that the king now effectively shared control of the monetary system with the mercantile class, in turn leading to a wider use of credit as capitalism took hold in the eighteenth century. 'Coin and notes and bills were eventually linked by a formal convertibility in which the latter was exchangeable for precious metal coins. This 'hybridised' nature of the system of dual monetary forms was the result of a compromise in a struggle for control that

⁹ In other words, the 'dematerialisation' of money was apparently not the result of pursuing a particular purpose or objective in terms of efficiency but rather the result of political circumstances falling into place to facilitate it.

eventually resulted in a mutually advantageous accommodation'¹⁰ (Ingham 2004b: 211). He notes, like Desan, that being at the heart of the monetary system and securing a position within the circulation process of the state's debt enables central bank money to become the pre-eminent form of money in the domestic hierarchy. Following from this, as a highly important institutional process within the social and political structure of the domestic economy, the business of central banking is intimately related first to the relationship between credit money and precious metal and second to the future construction of an international capitalist international trading system (Helleiner, 1999).

Centralisation of the British monetary system and those of the states that sought to emulate her capitalist development was an almost inevitable consequence of their central banks' domestic and then international roles in the dual system of precious metal and credit money. On the one hand, as the banker to a strong state, the 'public or 'central bank' has direct access to the most sought after promise to pay - that of the state to its creditors. This social and political relation between a state and a class of bourgeois creditors constitutes the capitalist form of credit money. The central bank's notes are at the top of the hierarchy of promises in a credit money system... 'On the other hand, as other national economies placed their monetary systems on the gold standard at the end of the nineteenth century, the international relations between central banks tended to enhance their control of the respective domestic monetary systems (Ingham 2004b: 211-12).

The ending of convertibility into precious metal (when central banks interest rate policy was the go-to policy of states wishing to defend their precious metallic reserves (see thesis section 3; Mosler 2012) and the widespread utilisation of fiat money might have been expected to herald a reduction of the influence of central banks. However, it seems central bank power has not waned; quite the reverse. Given the ideological turn against the use of active fiscal policy and the pre-eminence of monetary policy as the stabilisation policy of choice for most governments and central banks' ability to set the short-term interest rate exogenously, (often as an institution

¹⁰ The nature of the relationship between notes (and bills) and precious metals especially with regard to convertibility, effectively underpins the 'operational reality' of the extent monetary system of the time. It thus constrains the scope of state spending- see thesis section 3.

described as 'independent' from democratic control) has, it might be argued, enhanced both the widespread influence and prestige of central banks.

Since the final disappearance of the last vestige of precious metal money in 1971 when the United States abandoned the gold dollar lynchpin of the Bretton Woods international monetary system, it could be argued that central banks have lost a degree of control to foreign exchange markets. But far from signalling the demise of central banking, as some have argued, the need to create credible 'pure' credit money is more compelling than ever. It could equally be contended that, in pursuit of this end, central banks of the major economies have gained power over the systems through control of the supply of reserves and the discount rate (Ingham 2004b: 212).

The widespread adoption of so-called independent central banks reflects the increasing faith on 'technocracy' as opposed 'democracy' which has characterized the neoliberal era. In their research, Alesina and Summers (1993), claimed

that the monetary discipline associated with central bank independence reduces the level and variability of inflation but does not have either large benefits or costs in terms of real macroeconomic performance. This observation represents at least a fragment of evidence in support of theories emphasizing the neutrality of money. Our findings also have implications for the ongoing debate over the optimal rules governing monetary policy. Most obviously they suggest the economic performance merits of central bank independence.

As noted by Ingham above, the influence of leading central bankers has become correspondingly higher. For example, in 2010, Ben Bernanke (Fed Chairman from 2006 to 2014) stressed the importance of central bank independence and argued that such independence leads to better economic outcomes than would be the case if central banks are under political guidance.

A broad consensus has emerged among policymakers, academics, and other informed observers around the world that the...conduct of monetary policy in pursuit of those goals should be free from political control. To achieve both price stability and maximum sustainable employment, monetary policymakers must

attempt to guide the economy over time toward a growth rate consistent with the expansion in its underlying productive capacity. Because monetary policy works with lags that can be substantial, achieving this objective requires that monetary policymakers take a longer-term perspective when making their decisions. Policymakers in an independent central bank, with a mandate to achieve the best possible economic outcomes in the longer term, are best able to take such a perspective (Bernanke 2010: 1).

However, I would argue that a deeper consideration of what is meant by 'independence' for central banks, when combined with a knowledge of the operational reality of the monetary system, leads to a recognition of the necessary limits of the term's applicability; full operational independence is impossible in practice. Central banks *must act in conjunction with national treasuries to allow monetary system to function*.

In banking systems consisting of more than one bank, a state controlled [central bank] CB functions to transfer funds denominated in the state's currency between member banks. The CB can be thought of the operator of a spreadsheet which includes a transactions account for each member bank, generally called a 'reserve account' that records balances generally called 'reserves'. The CB also keeps accounts for the Treasury and for foreign CBs. The CB marks balances in the various accounts up and down - credits and debits- on instructions from those entities with accounts. Furthermore, the state sets the operating procedures for the CB and the banking system, including regulations regarding overdrafts (negative balances), which are accounted for as loans from the CB. The CB itself neither has, nor does not have, funds. Rather, it acts as the 'scorekeeper' for the members, crediting and debiting their accounts as per their instructions, and accounting for what it does with debits and credits in the CB accounts, using a process generally referred to as double entry accounting. CB's are, in general, public sector entities. They are created, regulated, and supervised by the state to serve public purpose, with all profits credited to the state. The state's CB is the only source of reserves for that currency. Reserve balances are created when the CB credits member reserve accounts (Mosler and Armstrong 2019, parentheses added).

I would also contend that the neoliberal belief in the potency of monetary policy (and thus the associated power of central bank action) is misplaced. In reality monetary policy is largely an ineffective policy weapon.

Central bankers believe raising rates works to reduce inflationary pressures by reducing aggregate demand, and lowering rates works to support aggregate demand and increase inflationary pressures. The primary channel for this effect is private sector lending, where higher rates discourage lending and lower rates support lending. However, close examination of the evidence refutes this idea. In the private sector, casually stated, for every dollar borrowed, there is a dollar saved. Therefore a shift in rates moves income between borrowers and savers. CBs agree with this, and then further assume that the propensities to consume out of interest income differ between borrowers and savers, such that when rates rise, for example, borrowers cut back on their deficit spending to a greater than savers increase their spending. Likewise, as rates fall, they believe that borrowers increase their deficit spending more than savers cut back on their spending. And therefore, central bankers conclude, higher rates are contractionary and lower rates expansionary. However, although the propensity estimates of the central bankers may well be accurate, given the state is a net payer of interest to the economy, higher rates are adding interest income to the economy and lower rates are removing interest income from the economy.

With debt to GDP ratios often approximating 100% of GDP, the interest added or subtracted by this channel is likely to dwarf the effect of the differing propensities between private sector borrowers and savers. Lower rates may help borrowers to service loans and qualify for new loans, but lower net income works against new borrowers' income levels and the general ability to service loans in the economy. Thus higher rates are in fact an expansionary force rather than the contractionary force assumed by central bankers. That is, global central bankers have it backwards- they are easing when they believe they are tightening, and tightening when they believe they are easing. And experiences of Japan, the eurozone, and the US do not contradict this hypothesis, where decades of 0 and near 0 rates have not triggered aggregate demand or inflation from private sector credit

expansions, and, to the contrary seem to be supporting low inflation and low demand (Armstrong 2019).

In conclusion, I would argue that central banks should be brought back under democratic control¹¹ and the practical limits of central bank 'independence' understood. In addition, an understanding of MMT allows an economist to understand the limited usefulness of monetary policy¹² and its inferiority to fiscal policy as a means to influence real economic outcomes such as economic growth and price stability¹³.

5. Conclusion

In this short appendix I have considered the history of private money networks and both early banking and capitalist credit banking. I argue that an understanding MMT sheds light upon the nature of banking. MMT highlights the critical difference between banks and funds. Banks should not be conceptualised as 'pure' intermediaries who act as a conduit between savers and borrows (in the manner of a fund) rather they operate in an entirely different way; they create money in the forms of liabilities upon themselves (specifically, bank deposits) in response to demand from customers. Banks act in the manner of profit-seeking firms and buy assets in the expectation of a positive net return; in this case, banks purchase the indebtedness of a customer they deem to be creditworthy. Thus, they acquire an asset in the form of a loan counterbalanced by a liability in the form of a bank deposit. As I argue in the thesis (section 2.2), accusations levied at MMT advocates regarding the supposed lack of attention they give to private banking are entirely misplaced. On the contrary, I would contend that Modern Money Theorists provide a more perceptive conceptualization of banking than mainstream economists and heterodox economists from other schools, including Post-Keynesians.

In addition, I argue that my brief description of the historical development of central banking – focusing on the Bank of England – highlights how the development of the relationship between

¹¹ For a discussion of Central Bank Independence see thesis section 3.5

¹² The advocates of MMT argue that a employed labour buffer stock policy – or Job Guarantee – provides a superior means of ensuring price stability than monetary policy.

¹³ While arguing that CBs should face democratic accountability rather than technocratic control I would, nevertheless, acknowledge the dangers as well as the advantages. For example, from a 'progressive' political perspective, the recent accusations of political interference in CB conduct from right wing politicians such as presidents Trump in the US (Congdon 2018) and Erdogan in Turkey (Alderman and Rao 2018) is of concern.

the Bank of England and the Treasury is entirely consistent with the taxes-drive-money approach of MMT. I contend that the elevated status of the views of central bankers and the mainstream preference for central bank independence are not justified by the evidence; indeed, importantly, in practice, *operational* independence is impossible since the central bank and treasury must work closely on a day-to-day basis in order for the system to function. I also argue in favour of democratic oversight of central banks and that a preference for unaccountable technocratic central bank control with its excessive and unjustified focus upon monetary policy as a means to guarantee price stability results from an ideological preference for 'markets' over democracy, combined with a misunderstanding of how the monetary system operates. In conclusion, I argue that the mainstay of central bank action, monetary policy (both in its orthodox and 'unorthodox' forms) is a highly ineffective tool; a JG and active fiscal policy provide more potent means to achieve the aims of full employment and price stability.

Appendix 7: References

- Alderman, L and Rao, P. S. (2018), *Defying Erdogan, Turkey's Central Bank Raises Interest Rates* NY Times, Sept. 13
<https://www.nytimes.com/2018/09/13/business/turkey-central-bank-interest-rates-erdogan.html>.
- Alesina, A. and Summers, L. (1993), 'Central Bank Independence and Macroeconomic Performance: Some Comparative Evidence', *Journal of Money, Credit and Banking*, Vol. 25, No. 2. (May), pp. 151-162.
- Armstrong, P. (2019), 'A simple MMT advocate's response to "What you need to know about modern monetary theory" by Gavyn Davies' (published in FT on April 28, 2019)', Gower Initiative for Modern Money Studies,
<https://gimms.org.uk/wp-content/uploads/2019/05/Davies-review-full-Phil-Armstrong.pdf>.
- Armstrong, P. and Siddiqui, K. (2019), "The case for the Ontology of Money as Credit: Money as bearer or basis of 'value'", *Real World Economics Review, Issue 90*
- Bernanke, B. (2010), 'Central bank independence, transparency, and accountability' Speech at the Institute for Monetary and Economic Studies International Conference, Bank of Japan, Tokyo, 25 May 2010.
<https://www.bis.org/review/r100527a.pdf>
- Boyer-Xambeu, M-T, Deleplace, G and Gillard, L (1994), *Private Money and Public Currencies*, New York: M.E. Sharpe.
- Encyclopedia Britannica, <http://www.britannica.com>.
- CoinDesk (2014), "Why Use Bitcoin?"
<http://www.coindesk.com/information/why-use-bitcoin/>.
- Congdon, C. (2019) 'Central Bank Independence', Bloomberg, July 8,
<https://www.bloomberg.com/quicktake/central-bank-independence>.
- Desan, C. (2014), *Making Money*, Oxford: Oxford University Press
- The Economist (2014), 'Money for Nothing'
<http://www.economist.com/news/finance-and-economics/21599053-chronic-deflation-may-keep-bitcoin-displacing-its-fiat-rivals-money>.
- Graziani, A. (2003), *The Monetary Theory of Production*, Cambridge: Cambridge University Press.
- Helleiner (1999), 'Denationalising Money?: Economic Liberalism and the "National Question"', in E. Gilbert, and E. Helleiner (eds), *Nation States and Money*, pp. 141-57 London: Routledge.
- Ingham, G. (2004a), *The Nature of Money*, Oxford: Polity/Blackwell.

Ingham, G. (2004b), 'The Emergence of Capitalist Credit Money,' in *Credit and State Theories of Money*, Cheltenham: Edward Elgar.

Innes, A. M. (1913), 'What is Money?' *Banking Law Journal*, May, 377-408

Innes, A. M. (1914), 'The Credit Theory of Money', *Banking Law Journal*, January, 151-168.

Itoh and Lapavistas (1999), *The Political Economy of Money and Finance*, Basingstoke: Palgrave MacMillan.

Keynes, J. M. (1930), *A Treatise on Money*, 2 vols. New York: Harcourt and Brace.

Lavoie, M. (2009), *Introduction to Post-Keynesian Economics*, Basingstoke:

Lowndes, W. (1691/1859), 'Remarks upon the Proposal for Establishing a Fund to Raise Two Millions,' in *The Writings of William Paterson* London: Judd and Glass

Martin, F. (2013), *Money: the Unauthorised Biography* London: Bodley Head.

Mosler, M. and Armstrong, P. (2019), 'A Discussion of Central Bank Operations and Interest Rate Policy', February 24, 2019
<https://qimms.org.uk/2019/02/24/central-bank-operations-interest-rate-policy/>.

Paterson, W. (1694), *A Brief Account of the Intended Bank of England*, London: Randall Taylor.

Usher, A. (1934/1953), 'The Origins of Deposit Banking: The Primitive Banks of Deposit, 200-1600', in F.C. Lane and J.C. Riemersma (eds.), *Enterprise and Secular Change*, London: George Allen and Unwin

Weber, M. (1927/1981), *General Economic History*, New Brunswick, NJ: Transactions Publishers.

Wray, L. R. (1990), *Money and Credit in Capitalist Economies*, Aldershot: Edward Elgar

Wray, L. R. (1998), *Understanding Modern Money*, Cheltenham: Edward Elgar.

Wray, L. R. (2004), *Credit and State Theories of Money*, Cheltenham: Edward Elgar.

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Appendix 7: The Relationship of MMT to other Traditions and Thinkers

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1. MMT and the Keynesian/Post-Keynesian Endogenous Money Approach, Liquidity Preference and Interest Rates

The endogenous money approach (associated with Post- Keynesianism) underpins MMT economists' explanations of the nature of the financial system and their analysis of core or operational reality as a whole. Here I consider the views of the advocates of MMT towards the endogenous money approach and their attitude with regard to the debate between 'accommodationists' and 'structuralists'¹⁴ within Post-Keynesianism. I then consider the Keynesian concept of liquidity preference and its influence upon interest rate determination from an MMT perspective.

An acceptance of the accommodationist view characterises MMT (Mosler 2012); from this viewpoint, central banks *necessarily* supply the volume of reserves required by the banking system-at the same time as the loan creates the deposit- by accounting for a reserve requirement as an overdraft or loan. Failure to do so would be an error of accounting. The volume of loans *per se* will not affect interest rates and banks will advance credit in response to increased demand at current rates, acquiring reserves, as required, at a price determined by the central bank (Wray, 1990, 2007). This 'accommodative' view contends that the central bank acts in a *passive* manner; banks can always access the *quantity* of reserves they require but it is the central bank that chooses the *price* (Mosler and Armstrong 2019).

¹⁴ Pollin (1991: 367-8) contrasts the two approaches to money supply endogeneity- the accommodative and structural- and provides a clear distinction between the two. The accommodative perspective argues that no quantity constraints exist on banks with respect to reserves as the central bank must necessarily supply required reserves. Only a price constraint is relevant as the central bank acts as price setter. The structural perspective contends that attempts by the central bank to control the growth of non-borrowed reserves do exert quantity constraints on banks. Additional reserves-although they may not be fully adequate- can be generated within the system itself by liability management. Pollin notes that these views represent extremes. 'Of course, as in all theoretical debates, various degrees of disagreement exist along a spectrum between two polar positions, and no theorist is likely to cling dogmatically to either extreme view. Nevertheless, the substantive distinctions between the two approaches are clear and sufficiently important that they deserve to be explored (Pollin 1991: 368). (Wray 2007: 12-17) expands on this point, asserting, in defence of the accommodationist position that that the supply of reserves to the banking system is best considered as horizontal. He acknowledges the role of liability management and innovation and agrees that it is an over-simplification to assume a horizontal supply of loan provision from banks at an interest rate set exogenously. I would argue Wray's work on the nature of the accommodationist and structuralist controversy provides an explanation of how the two approaches might be successfully reconciled (Wray 2007: 17) but, notwithstanding this work, he remains within the accommodationist camp.

However, some Post-Keynesian advocates of MMT, in particular Wray (1990), whilst supporting an accommodative perspective, have questioned whether a 'pure' accommodationist view of the endogenous approach (where the banks charge an interest rate which is essentially the risk-free rate plus an additional charge to take account of operating costs such as wholesale funding, labour costs and profit on bank equity) may reflect the whole story. Wray (1990) provides a thought-provoking (though not uncontroversial) insight by bringing together a consideration of the endogenous money approach and Keynes's theory of liquidity preference and highlighting what he considers to be the complementarity of the two. Wray makes the critical distinction between flows and stocks of money. He focuses on Keynes's own rejection of the idea that a theory based on money flows, such as loanable funds theory, can provide an explanation of the determination of interest rates. Such a synthesis might be considered as a variant or development- but by no means the only one (Pollin 1991: 391) on a *pure* accommodative perspective, as opposed to a structural perspective (Pollin 1991: 366-370; Wray 2007: 10-17) - of the endogenous money approach.

Wray (1990) develops his analysis and contends that an increased flow of credit created in response to a raised demand for loans does not *directly* place upward pressure on interest rates. However, the flow will have an impact upon stocks as the credit advances stimulate production allowing 'surplus' agents to accumulate net financial wealth. The endogenous approach contends that investment is typically financed by the extension of bank credit, which is retired once the productive process is over. A bank 'recaptures' the reserves when loans are repaid and process is completed when 'savers' exchange their deposits for longer term assets. We may view liquidity preference as a desire to hold short-term rather than long-term assets, quantifying the concept as the 'interest rate differential required to induce surplus units to exchange bank deposits for long-term bonds' (Wray 1990: 164). In principle, should liquidity preference increase, the yield curve could rise more steeply.

In a period of significant bank balance sheet expansion, banks may eventually become concerned about elevated leverage ratios. They may alleviate this problem by raising more capital but it is nevertheless possible that uncertainty may lead to a rise in their liquidity preference, meaning they will only meet additional credit demand at higher interest rates. Banks must ensure that the interest rate they receive from borrowers is sufficient to cover all their costs and a margin which covers the risk of default. Short-term rates would be expected to rise as banks extend greater levels of credit if the costs of balance sheet expansion are correspondingly higher. Perceived

elevated risk of counterparty default would thus be expected to place upward pressure on lending rates. In addition, if the public become increasingly concerned about their financial position, we might expect their liquidity preference to rise. Banks who wish to persuade 'surplus' agents to shift from holding deposits to longer term assets would need to raise interest rates to compensate for this effect.

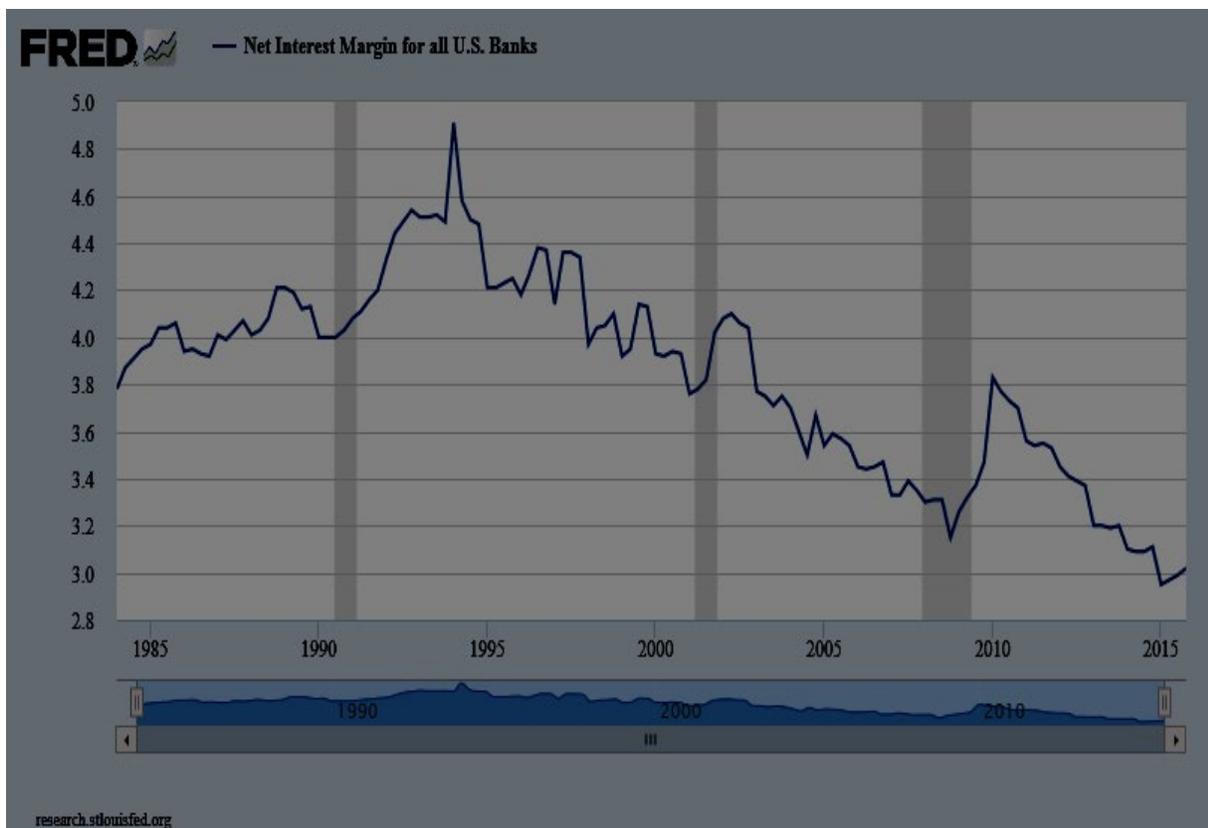
I might compare the expected effect of liquidity preference on interest rates under fixed and floating exchange rates. Under fixed exchange rates it seems reasonable to expect that a rise in liquidity preference on the part of the banks or the public might put upward pressure on interest rates. Critically, under fixed exchange rates the system operates *in a continuously reserve constrained condition* (Mosler, 2012). Banks make loans in response to demand and bank deposits grow endogenously, however, banks must keep a supply of -or access to- convertible currency, in one form or another, in order to meet withdrawal demands. The cost of borrowing these reserves in the market place (the interest rate) is determined by the interaction of available supply and desire to hold convertible currency. In this case a rise in liquidity preference might be expected to raise demand and put upward pressure on the rates that banks must pay to obtain convertible currency and, in turn, the rate they charge borrowers. In summary, from an MMT perspective, we might contend that, under fixed exchange rates, liquidity preference *per se* might be expected to influence interest rates.

The situation might be contrasted with that which applies under floating exchange rates, when *lending is not reserve constrained*. In this case, banks face a horizontal supply curve for reserves at a rate determined by the central bank and liquidity preference *per se* would not be expected to raise interest rates. Instead any impact would be reliant upon a weak response from the central bank to an increased desire for liquidity; under floating exchange rates, the relative impact of liquidity preference vis-à-vis the central bank's reaction function¹⁵ might be expected to be small and term rates, ultimately, express anticipated central bank interest rate changes (Mosler, personal correspondence 2016; Mosler and Armstrong 2019)

¹⁵ The effect of the bankruptcy of Lehman Brothers provides an interesting case study when examining the influence of the Fed's reaction function on the fed funds rate. The Lehman Brothers failure caused a significant loss of confidence on the part of reserve banks leading to higher liquidity preference. The increase was not, initially at least, recognised by the Fed who by failing to react effectively, allowed this heightened liquidity preference to exert upward pressure on interest rates, thus causing the fed funds rate to rise above target. However, once the need to supply additional liquidity was recognised, the Fed regained control of the fed funds rate, illustrating the over-riding importance of the Fed's reaction function (For a full analysis see section 10 below).

If liquidity preference was significant under floating exchange rates, we might expect the net interest margin (NIM) - or the difference between the interest income of banks and other financial institutions and the amount of interest paid out to their lenders relative to the amount of their interest-earning assets- to rise in line with perceived counterparty default risk. In the period immediately preceding the global financial crisis (GFC) when confidence was relatively high within the financial sector and liquidity preference correspondingly low, competition between banks and the existence of significant scale economies, especially on the part of the large banks, might be expected to have exerted downward pressure on NIM. In contrast, we might expect the GFC period to have been characterised by a rising NIM, as perceived counterparty risk rose, causing corresponding increases in liquidity preference.

Data from the Federal Reserve Bank of St. Louis lends very limited support to this contention as rises in NIM are apparent, not only in the years 2007-10, but also in earlier recessionary periods, when confidence might be expected to have been low and liquidity preference elevated. However, the small observed impact, relative to the range of NIM throughout the period covered by the data, indicates that any possible effect of increased liquidity preference does not appear to be particularly significant; this point is emphasised when we note that even the small observed increase in NIM may be due to existing loan rates lagging changes in the policy rate.



Source; FRED Economic Data <https://research.stlouisfed.org/fred2/series/USNIM>

Evidence can also be found in a recent Federal Reserve research paper which shows how NIM increased, especially for larger institutions, during 2007 and 2008, at the peak of the crisis- and trended downwards from 2010 (Covas, Rezende and Voltech, 2015) but again the observed effect is relatively small. In contrast, according to Borio, Gambacorta and Hofmann, it appears the *level of interest rates* is a key determinant of bank profitability, ‘the level of short-term interest rates and the slope of the yield curve are positively associated with banks’ net interest income, reflecting their positive effect on bank margins.’ (Borio, Gambacorta and Hofmann 2015: 4) They specify four relevant mechanisms that underpin this process (Borio, Gambacorta and Hofmann: 6)¹⁶.

¹⁶ Borio, Cambacorta and Hofmann contend that both a higher level of interest rates and a steeper slope of the yield curve are associated with higher net income and ‘in the case of the *level of interest rates*, at least four mechanisms are relevant: (i) a “retail deposits endowment effect”; (ii) a “capital endowment effect”; (iii) a “quantity effect” that counterbalances the “price effect”; and (iv) the dynamics of transition between equilibria, including repricing lags and credit-loss accounting.’ (Borio, Cambacorta and Hofmann, 2015, emphasis in the original) Bill Mitchell provides an excellent analysis and critique of the paper and concludes that their results support the conclusion that bank profitability is adversely affected by low interest rates and a flat yield curve. ‘I could take exception to several parts

I would argue that the *influence of liquidity preference is potentially significant under fixed exchange rates but this is not the case under floating exchange rates*. The risk-free rate is a crucial benchmark but it is also the case that banks also decide on interest charges and ration credit (based on personal relationships and knowledge of customers) and under fixed exchange rates the influence of liquidity preference- both their own and that of the public- can be important. The interest rate is determined by the central bank's benchmark rate acting in combination with the willingness of banks and other institutions to allow their balance sheets to expand. This willingness is determined by rules of thumb, custom and expectations (Wray 1990). If banks are relatively unconcerned about the risks associated with balance sheet expansion the granting of additional loans at the current interest rate is likely but this situation may not always persist. Under fixed exchange rates, where lending *is reserve constrained*, concern over elevated leverage ratios might be expected to raise the liquidity premium required by banks, in turn leading, to raised interest rates being charged on loans. Under floating exchange rates, however, where banks are *not reserve –constrained* (and, in the long-term, are not necessarily capital –constrained) liquidity preference is only influential if the central bank (the monopoly supplier of reserves) is unresponsive. Under floating exchange rates, the key determinant of interest rates is the central bank's anticipated reaction function and the term structure of interest rates is ultimately an expression of expected central bank interest rate settings. Bank profitability is influenced by the level of interest rates and is liable to be depressed when banks operate in a low interest rate environment.¹⁷

of the paper but that would divert us from the conclusion that I agree with – that low interest rates are bad for private banks.' (Mitchell, 2015b)

¹⁷ Interestingly, in personal correspondence Geoff Harcourt (2017) suggests that this is not the case in Australia.

2. MMT and the Post-Keynesian Approach to Aggregate Supply

MMT is generally associated with a distinctive approach to analyzing the demand side of the economy, particularly its analysis of the operational reality of the monetary system and its radical fiscal policy prescriptions¹⁸. However, MMT does include explicit analysis of the supply-side of economy; this aspect of MMT is very much in the Post-Keynesian tradition (Mitchell, Wray and Watts 2019).

In common with Post-Keynesian price theory (Lee 1998), at firm level, MMT incorporates mark-up pricing. Firms are taken to be price-makers, fixing their prices by adding a mark-up over costs. A basic equation might be employed, ' $P = (1+m)[W/\gamma]$ ' where P is output price, m is the mark-up on unit labour costs, W is the money wage per hour and γ is labour productivity per hour' (Mitchell et.al. 2019: 244). Initially, in a basic mark-up model, analysis 'abstracts from raw materials costs' (Mitchell et.al. 2019: 244), leading to a definition of γ as the units of output per unit of labour input per hour. 'The mark-up (m) is set to provide a surplus above the direct unit labour cost to account for fixed overhead labour and other fixed costs, including interest payment on loans, in addition to a provision for profits (return on equity)' (Mitchell et.al. 2019: 244, parentheses in the original).

MMT therefore, assumes general price-rigidity in the short run¹⁹, with supply responding to demand; changes in price would result from changes in the money wage rate, other variable costs, the mark-up or labour productivity. Money wages also tend to be inflexible in the short run. Advocates of MMT contend that wage negotiation occurs relatively infrequently making wage rates stable over time and stress that the wage structure reflects social status; workers consider their relative position in the hierarchy to be significant. Workers resist cuts in wages, (although they may accept money wage cuts *in extremis* such as a situation where they consider their employer faces the threat of bankruptcy or they believe the level of unemployment is such that their chances of getting another job are very low) (Mitchell et. al. 2019: 243).

¹⁸ I argue that MMT's support for active fiscal policy has much in common with the approach of Post-Keynesians and Keynes himself. See Armstrong (2018) for a discussion of Keynes's attitude to functional finance and deficit – financing from an MMT perspective.

¹⁹ The short run here is the period where money wages and prices can be generally taken as given and capacity is fixed. Firms can change capacity in the long run and invest in newer technology.

For the advocates of MMT, institutional structure²⁰ and market power have a critical influence over the size of the mark-up (m). 'The mark-up or margin (m) reflects the market power of the firm. The higher the market power, the higher will be the margin²¹. Thus, in more competitive sectors, the margin will tend to be lower than in less competitive sectors. Changes in competitiveness of a sector will, over time, lead to changes in the size of the mark-up' (Mitchell et.al. 2019: 245). MMT utilizes an approach based on an employment-output function in order to explain the level of employment. The firm plans its level of output based upon expected demand and given this, 'employment will be determined by the productivity of labour' (Mitchell et.al. 2019: 241). The broad assumptions underpinning this contention are stable wage rates and capital-output ratios and lack of substitutability between capital and labour. The employment-output function is expressed as, ' $Y = \gamma N$, where N is the total number of workers employed, γ is labour productivity and Y is planned output (based on expected spending)' (Mitchell et.al. 2019: 241, parentheses in the original).

Advocates of MMT provide a consideration of the factors which influence labour productivity, 'technology (whether it is best-practice, capital- or labour-intensive); worker skill and motivation; and management skill and business organisation' (Mitchell et.al. 2019: 241). They note that public discourse often mistakenly blames workers' supposed low skill levels and poor motivation for low labour productivity rather than concentrating on inefficient management and low investment which may, in fact, be more significant in practice (Mitchell et.al. 2019: 241).

MMT is able to generate a 'general aggregate supply function' (Mitchell et.al. 2019: 247) by assuming a constant m , W and γ , and adding full capacity utilisation level (Y^*). Firms might respond to increased aggregate demand in three possible ways; increase output, increase price, or a mix of both. In the general case, or as a first approximation, firms are treated as quantity

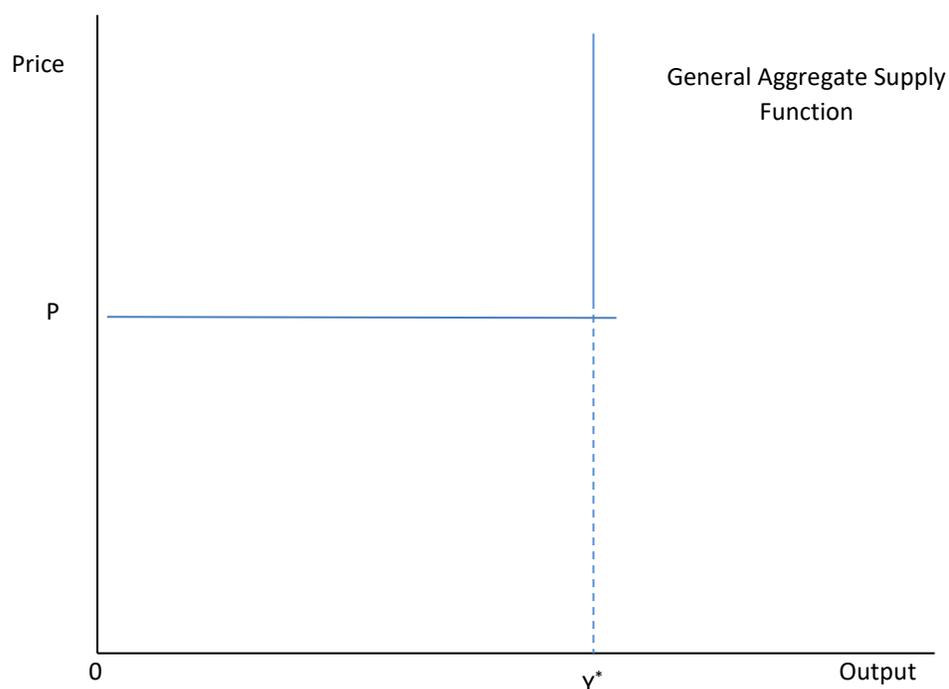
²⁰ However, MMT goes beyond the Post-Keynesian approach in the sense that, for MMT advocates, *the price level is ultimately a function of the prices the government is prepared to pay* (see thesis section 2.3; Mosler 2012; Wray 1998). The government - in its role as a buyer of goods and services - has the most significant influence on the institutional structure which sets the complete backdrop for private sector buying and selling. For example, if the government raises the prices it is prepared to pay for a finished product, private firms face less competitive pressure giving them more scope to increase their mark up. If the government reduces the prices it is prepared to pay, initially, private firms may seek alternative private buyers but if the government maintains low price offers over a sustained period, eventually private income will fall, reducing demand, forcing private sellers to accept the state's lower offers (thesis section 2.3).

²¹ Kalecki (1969: 12-20; 1971) develops a 'cost plus' approach to pricing and considers the effect of competition and degree of monopoly power on the size of the margin. Such a method is fundamental to both a Post-Keynesian and MMT approach to the development of the theory of pricing.

adjusters (this reflects the underlying assumptions that most firms operate in imperfect, oligopolistic markets and retain spare capacity). The horizontal section is determined by the mark-up pricing rule. However, MMT recognises that a reverse 'L'-shape (figure 1 below) represents a simplification of reality. 'There is some debate about when the rising costs might be encountered given that all firms are unlikely to hit full capacity simultaneously. The reverse L-shape simplifies the analysis somewhat because it assumes that the capacity constraint is reached by all firms at the same time. Bottlenecks in production are likely to occur in some sectors before others and so cost pressures will begin to mount before overall full capacity output is reached' (Mitchell et.al. 2019: 247).

Once full capacity is reached (Y^*) then increased demand cannot be satisfied by increasing output. Raised demand merely causes firms to attempt to outbid each other leading to rises in production costs, in turn raising the price level; shown by the vertical section of the AS curve.

Figure 1. The reverse L-shaped aggregate supply curve



Source: Mitchell, et.al. 2019: 247

According to MMT, the level of employment is determined (in the 'normal case', within the horizontal section of the AS curve) by demand; firms will produce output in response to demand

and will hire the amount of labour, given labour productivity, required to make that level of output; 'effective demand drives labour demand' (Mitchell et.al. 2019: 249). MMT is consistent with the view that aggregate demand plays a key role in determining the level of employment and labour productivity in both the short and long run. In the longer term, when faced with continued growth of demand, firms will generally look to invest in improved technology leading to increased labour productivity and 'rising unit labor costs due to rising wages also provide incentive for firms to increase labor productivity over longer periods through such activities, including investment in new technologies. Rising wages can spur research and development that leads to innovations in technology' (Mitchell et.al. 2019: 252). Crucially, from the perspective of MMT the 'Law of Diminishing Marginal Returns'²² has no validity.

No conclusive empirical evidence has ever been assembled to substantiate 'the Law' as a reasonable generalisation of production relationships in modern monetary economies. On the contrary, there is a mass of empirical evidence available, derived from actual studies of business firms, to support the view that costs of production are constant in the relevant or normal range of output and that the Law of Diminishing Marginal Productivity is not applicable. In fact, a strong positive relationship between output per hour and the business cycle is observed in the real world. ..The pro-cyclical pattern of labour productivity (output per hour) means that costs per unit of output will not increase as output increases. Total costs will obviously rise but the per-unit costs will decline as employment rises and the economy moves toward full capacity utilisation (Mitchell et.al. 2019: 248).

Significantly, the advocates of MMT are highly critical of the over- emphasis placed on supply-side factors by mainstream economists. This leads the latter to miss the key influence of effective demand. 'Orthodox economists tend to attribute both the short run and long run trends of labor productivity to supply-side factors and ignore the substantial effects of aggregate demand. This is neither theoretically sound nor does it explain observed real world phenomenon regarding labor productivity' (Mitchell et.al. 2019: 252).

²² Such a position has long been associated with the 'Keynesian' position (See W. E. G. Salter 1960)

3. Kalecki and Marx; more convincing precursors of MMT than Keynes?

(i) Introduction: A further consideration of Keynes and MMT

Bill Mitchell introduces the question of the importance of Keynes's work to MMT,

Many Post Keynesians, almost by definition, believe that Keynes was a central figure in the development of what we now call Post Keynesian economics, although that 'school of thought' evades precise identification and is certainly anything but homogenous. There are MMT proponents, who while sympathetic with much of Post Keynesian theory, disagree on key propositions – specifically relating to debt and deficits (as an example). But then they also point to Keynes' work as seminal in the development of MMT. My own view is that many of the important insights in Keynes were already sketched out in some detail in Marx. Further, the work of the Polish economist Michał Kalecki was much deeper in insight than the work of his contemporary, Keynes (Mitchell 2015a).

Keynes worked in the Marshallian tradition²³ and accepted aspects of mainstream neo-classical theory which are regarded as incompatible with both Post-Keynesianism in general and MMT, in particular, when writing the *General Theory of Money, Interest and Employment (1936)* (Wray 1990: 116-117; Lavoie 2009: 86-7). Specifically, he accepted that firms aim to maximize expected profits when constrained by the action of the Law of Diminishing Returns (Lavoie 2009: 87); the validity of this 'law' is denied by advocates of MMT, citing significant empirical evidence (see section 2 above).

In addition, Keynes accepted the stock of money as 'a given' (Lavoie 2009: 87) or even 'apparently adopted an exogenously determined money supply' (Wray 1990: 117) in contradiction to the Post-Keynesian and MMT view. The situation with regard to money is complex as in *A Treatise on Money (1930)*, Keynes argued in favour of endogenous money, as noted by Wray (1990), 'The banking system has no ...direct control over the quantity of money; for it is characteristic of modern systems that the central bank is ready to buy for money at a stipulated rate of discount

²³ An acceptance of 'Marshallian concepts' such as marginalism, partial equilibrium analysis and the Law of Diminishing Returns might be considered as incompatible with Post-Keynesianism and MMT by most, if not all, of the economists working within these 'schools.'

any quantity of securities of certain approved types' (Keynes 2012: 189; quoted in Wray 1990: 121).

It must be noted that Keynes was always aware of the political environment and prepared to adjust his message according to perceived nature of his audience (Armstrong 2018). Lavoie notes on this point, 'Keynes kept these neoclassical features because he wanted to show his contemporaries that his was a more general theory. In his effort to get a fair hearing and to get his message across, Keynes endeavored to make sure that his arguments would look familiar and would be understood by his colleagues' (Lavoie 2009: 87).

Such a view is an endorsement of the point made earlier by Joan Robinson, who considered that Keynes, 'had to make every concession...in order to get a hearing. It would have been much simpler to start by assuming a constant rate of interest and a perfectly elastic supply of money. But then his whole case would have been dismissed as a misunderstanding of the orthodox position. He was obliged to accept the presumptions of his critics in order to explode them from within' (Robinson 1971: 81-82). Wray contends that, 'it is possible that Keynes merely adopted an exogenous money supply in order to facilitate exposition of various components of the *General Theory*. Much of his other work seems to recognize that the money supply is endogenously determined' Wray 1990: 123).

A similar argument can be made regarding his apparent acceptance of key neo-classical postulates such as flexible wages and prices and the Law of Diminishing Returns. I would argue that it wasn't so much that he accepted their validity, rather that he wanted to show that *the economy could settle down at an under-full employment equilibrium even when these conditions were operating*. Admittedly, trying to assess the motivation of Keynes involves a degree of conjecture and the results of his approach have not been entirely successful. Lavoie contends that some Post-Keynesians have retained the Law of Diminishing returns resulting in an inability to model the aggregate supply side of the economy (Lavoie 2009: 87-9). In addition, Keynes's made a clear and unambiguous statement regarding the inability of a flexible wage policy to generate full employment. "There is, therefore, no ground for the belief that a flexible wage policy is capable of maintaining a state of continuous full employment...The economic system cannot be made self-adjusting along these lines.' (Keynes 1936: 267). However, despite this categorical

denial of the ability of flexible wages to bring about full employment, some 'Keynesian'²⁴ economists continue to maintain that inflexible wages are the source of involuntary unemployment.

²⁴ 'New Keynesian economists believe that market-clearing models cannot explain short-run economic fluctuations, and so they advocate models with "sticky" wages and prices. New Keynesian theories rely on this stickiness of wages and prices to explain why involuntary unemployment exists'.
(Mankiw, <http://www.econlib.org/library/Enc/NewKeynesianEconomics.html>)

(ii) Kaleckian Roots

Lavoie (2009) notes that Kalecki avoids the pitfalls of Keynes, 'Kalecki, however, was schooled in Marx, not Marshall. As such, in his first articles on the business cycles and effective demand, Kalecki finds no room for neo-classical assumptions, in particular he readily accepts the notion that production can be increased at constant unit costs' (Lavoie 2009: 89).

Lavoie contends that the Kaleckian approach is often regarded as 'superior' to that of Keynes by many Post-Keynesians; a view supported by both Robinson and Kaldor (Lavoie 2009: 89). Lavoie notes that Kalecki (1971) considered investment to be independent of current output and that consumption could be sub-divided into two parts; induced consumption out of workers' wages and autonomous (depending on lagged, realized profits) consumption out of the profits made by capitalists (Lavoie 2009: 85).

Lavoie (2009) shows how, in a simple, closed economy, Kalecki's analysis, taking Y = nominal income, can be summarized using the equations below;

$$Y = \text{wages} + \text{profits} = \text{consumption} + \text{investment}$$

Subdividing consumption,

$$\text{Wages} + \text{profits} = \text{consumption out of wages} + \text{consumption out of profits} = \text{investment}$$

Assuming workers spend all their income; as does Marx²⁵,

$$\text{Consumption out of wages} = \text{wages}$$

We can now derive Kalecki's profit equation,

$$\text{Profits} = \text{consumption out of profits} + \text{investment}$$

Lavoie summarizes the conclusions first by quoting Kalecki himself, 'Now it is clear that capitalists can decide to consume and invest more in a given period than in the preceding one, but they

²⁵ See Marx's analysis of 'simple reproduction' (Marx 1867/2013: 396- 405).

cannot decide to earn more. It is therefore their investment and consumption decisions that determine profits and not vice versa' (Kalecki 1971: 78-9).

He follows with,

We can summarize this macroeconomic theory by referring to an aphorism made famous by Kaldor (1956: 96), although often wrongly attributed to Kalecki: 'Capitalists earn what they spend, and workers spend what they earn.' This statement highlights an important asymmetry: capitalists and entrepreneurs can always decide to spend more (provided banks accept [*the opportunity*] to finance) them, whereas workers cannot decide to earn more, since this depends essentially on the employment they are being offered by entrepreneurs (Lavoie 2009: 85, parentheses in the original, italicized parentheses added).

Kalecki (1969: 96-99) stresses the importance of the investment decision and contends that, 'Investment decisions are closely related to 'internal' accumulation of capital i.e. to the gross savings of firms. There will be a tendency to use these savings for investment and, in addition, investment may be financed by new outside funds on the strength of the accumulation of entrepreneurial capital' (Kalecki 1969: 96-99). Wray describes the importance of credit to the investment and capital accumulation process in Kalecki's approach,

As Kalecki has shown, it is the production of investment goods and goods which will be consumed by capitalists that generates aggregate profits...growth of credit generated aggregate profits which funded investment and the accumulation of capital. At an individual level the capitalist borrows a sum of money to produce goods which he hopes to sell for a greater sum. In the aggregate this will only be possible if investment goods and capitalist consumption goods are being produced. However...investment raises productive capacity so it can be undertaken only if market growth is expected. That is because profits require investment (Wray 1990: 56).

Cooper (2011) highlights the links between Kalecki, Post-Keynesianism and MMT. He contends that, for Kalecki, higher taxation reduces aggregate demand (as it does in Keynes's analysis), since it lowers consumption and investment. However, Cooper notes a second important aspect

of Kalecki's work; the dynamic links Kalecki specifies between higher taxation, lower realised profits, reduced expected profitability and the reaction of entrepreneurs regarding their investment plans (Cooper 2011).

Such an approach, I would argue, is entirely consistent with the dynamic nature of both Post-Keynesian and MMT analysis of a monetary 'entrepreneurial' economy. Sawyer (2007) also notes the complementarity of Kalecki's analysis with the endogenous money approach characteristic of Post-Keynesianism and MMT. 'Money is credit money endogenously created within the private sector with loans created by banks generating bank deposits. The expansion of the stock of money is driven by the demand for loans, which leads to the expansion of bank deposits in so far as the demand for loans is met by the banking sector' (Sawyer 2007: 3).

Sawyer (2007) stresses two key aspects of commonality between, Kalecki's work, Post-Keynesianism and MMT. First, investment may be financed by accumulated funds or by new credit and allows production to take place, leading to the generation of profits for entrepreneurs. Second, this investment is path dependent and determines the level of economic activity.²⁶ In a simple closed economy a lack of perceived profit opportunities would reduce investment and result in lower output and employment. However, in an open economy, with a government sector, employment could be boosted by positive net exports or a government deficit, thus offsetting any potential shortfall in investment. Kalecki (1943) considered both the policy options open to governments and the political implications of governments adopting policies designed to generate full employment. He noted the existence of considerable support for full employment policies amongst economists in the 1940s.

²⁶ 'Sawyer (2007) notes that in Kaleckian analysis, (in common with Post-Keynesianism and MMT), 'the evolution of the supply potential of the economy in terms of the available work force, the size of the capital stock and the growth of factor productivity are all strongly influenced by the time path of the level of demand. This is most evident for the growth of the capital stock, where investment expenditure is strongly influenced by the level of economic activity, but it would also be relevant for the evolution of the effective labour force...investment is path dependent, and specifically is influenced by the path taken by demand and economic activity, and reflected in variables such as profitability and capacity utilisation. There is no sense in which the future time path of the capital stock can be seen as pre-determined by relative prices (as in the neo-classical approach). When investment and hence the evolution of the capital stock are path dependent, then macroeconomic policies have an influence on investment, and thereby on the evolution of the supply side of the economy as investment adds to the capital stock'. (Sawyer 2007: 4)

A solid majority of economists is now of the opinion that, even in a capitalist system, full employment may be secured by a government spending programme, provided there is in existence adequate plans to employ all existing labour power, and provided adequate supplies of necessary foreign raw-materials may be obtained in exchange for exports. If the government undertakes public investment (e.g. builds schools, hospitals, and highways) or subsidizes mass consumption (by family allowances, reduction of indirect taxation, or subsidies to keep down the prices of necessities), and if, moreover, this expenditure is financed by borrowing and not by taxation (which could affect adversely private investment and consumption), the effective demand for goods and services may be increased up to a point where full employment is achieved (Kalecki 1943:1).

Kalecki rejects the view that the budget deficits associated with expansionary fiscal policy designed to achieve full employment will raise the long-term interest rate and recognizes the ability of the central bank to control the interest rate²⁷; a point amply illustrated during the Second World War. He argues 'that the rate of interest depends on banking policy, in particular on that of the central bank. If this policy aims at maintaining the rate of interest at a certain level, that may be easily achieved, however large the amount of government borrowing. Such was and is the position in the present war. In spite of astronomical budget deficits, the rate of interest has shown no rise since the beginning of 1940' (Kalecki 1943: 2).

Kalecki deals with the expected response from advocates of the traditional 'Treasury View' believing that government spending, when financed by enlarged deficits merely 'crowds out' private expenditure, leaving national income unchanged; he actually plays the role of 'devil's advocate' and forms the anticipated question for them himself, 'Is it not wrong, however, to assume that private investment will remain unimpaired when the budget deficit increases? Will not the rise in the budget deficit force up the rate of interest so much that investment will be reduced by just as much as the budget deficit is increased, thus offsetting the stimulating effect of government expenditure on employment?' (Kalecki 1944: 360).

Cooper notes that, 'From Kalecki's perspective, there are numerous flaws in this claim. For one thing, private investment for him is a function of profitability, not the rate of interest *per se*. If

²⁷ A point also made by Mitchell (2010b).

profitability is rising, a higher rate of interest will not necessarily impede private investment'²⁸ (Cooper, 2011). Cooper also points out that Kalecki rejects both the loanable funds theory of interest rate determination and the contention that saving is a *source* of investment. Rather, for Kalecki, an increase in investment generates saving and, in an open economy, with a government sector, any increase in an autonomous injection, private investment government spending or exports will always lead to the generation of an equal amount of leakages. Such an approach is in line with the Post-Keynesian 'sectoral balances' approach (see thesis section 2.4) and MMT.

... the budget deficit always finances itself – that is to say, its rise always causes such an increase in incomes and changes in their distribution that there accrue just enough savings to finance it ...In other words, net savings are always equal to budget deficit plus net investment: whatever the general economic situation, whatever the level of prices, wages, or the rate of interest, any level of private investment and budget deficit will always produce an equal amount of saving to finance these two items (Kalecki 1944: 40).

Importantly, for Cooper, Kalecki's work has much in common in its treatment of interest rate determination with both Post-Keynesianism and MMT, inasmuch as Kalecki was well aware that, given the willingness to enact the appropriate policy position, the central bank has the capability of controlling the full spectrum of interest rates. Cooper (2011) quotes the following section to support his case.

The same method of keeping interest rates constant can be followed in peacetime. There is nothing peculiar in the wartime situation which makes this method easier than where a budget deficit is used for financing public investment or subsidizing mass consumption. We may thus conclude that, provided the central bank expands the cash base of the private banks according to the demand for bank deposits, and provided the government issues long- and medium-term bonds on

²⁸In his collected works, Kalecki provides further analysis of the relationship between profitability, interest rates and investment; see "Essay on the Business Cycle Theory" volume I, part 3 and "Essays in the Theory of Economic Fluctuations" volume 1, part 5.

tap²⁹, both the short-term and the long-term rate of interest may be stabilized whatever the rate of the budget deficit (Kalecki 1944: 361).

Cooper suggests the following concerning Kalecki's analysis of interest rates and the effects of public borrowing *vis-à-vis* MMT.

As in MMT and Post Keynesianism, the rate of interest is therefore considered to be a policy variable. There is no such thing as a 'natural' rate. Interest is a share out of profit – a distributive variable – and can be set as a matter of policy at whatever level the central bank wishes it...Kalecki's analysis of public borrowing differs somewhat from MMT, reflecting the different monetary system of the period³⁰....[but] his conclusions concerning the impact of budget deficits on interest rates, inflation, private investment, and so on, closely resemble those of MMT and Post Keynesian economists' (Cooper, 2012, parentheses added).

Kalecki also notes that budget deficits will not necessarily cause inflation. Indeed, if there is spare capacity in the economy the extra demand caused by the use of expansionary fiscal policy will lead to increased output rather than inflation. This view is in accordance with the 'L shaped' AS curve approach adopted by modern Post-Keynesians and advocates of MMT (see section 2 above) (Kalecki 1943:2). Sawyer (2007) notes that in the Kaleckian system, in common with that expressed by advocates of MMT (Mosler 2012), inflation can arise for several reasons, 'Inflation is viewed as multi-causal and the sources of inflationary pressure vary over time and economy. The range of factors which impact on the rate of inflation, including a struggle over income shares, the level of and rate of changes of the level of aggregate demand and cost-push factors coming notably from the foreign sector (change in import prices and the exchange rate)' (Sawyer 2007: 3, parentheses in the original). In addition, Kalecki was well aware of the extent of *political* (as opposed to economic) opposition to the adoption of full employment policy as

²⁹ 'A tap issue is a procedure that allows borrowers to sell bonds or other short-term debt instruments from past issues. The bonds are issued at their original face value, maturity and coupon rate, but sold at the current market price' (<http://www.investopedia.com>).

³⁰ Cooper (2011) looks beyond the particular institutional features of the monetary system which were in existence at the time of Kalecki's writing 'in order to highlight the more fundamental similarity in their treatment of interest as a politically determined policy variable under the exogenous control of the central bank. This makes clear that the sharp distinction between the neoclassical orthodoxy on the one hand and MMT and Post Keynesian economists on the other is also strongly evident in the work of Kalecki'. (Cooper, 2011) This seems to me to be entirely reasonable, especially since MMT explicitly recognizes the importance of both institutions and the prevailing exchange rate system to the nature the existing 'operational reality' (see section 6 below).

although most economists are now agreed that full employment may be achieved by government spending, this was by no means the case even in the recent past. Among the opposers of this doctrine there were (and still are) prominent so-called 'economic experts' closely connected with banking and industry. This suggests that there is a political background in the opposition to the full employment doctrine, even though the arguments advanced are economic. That is not to say that people who advance them do not believe in their economics, poor though this is. But obstinate ignorance is usually a manifestation of underlying political motives (Kalecki 1943:2, parentheses in the original).

Kalecki specified three possible sources of this political opposition,

The reasons for the opposition of the 'industrial leaders' to full employment achieved by government spending may be subdivided into three categories: (i) dislike of government interference in the problem of employment as such; (ii) dislike of the direction of government spending (public investment and subsidizing consumption); (iii) dislike of the social and political changes resulting from the maintenance of full employment (Kalecki 1943:2-3).

Kalecki recognizes the negative perception of state activism which often characterizes the opinion of 'captains of industry' who tend to support a *laissez-faire* approach. He summarizes the 'business view' by noting that a support for 'sound finance' follows from the perceived need on the part of business to protect the pre-eminent importance of the state of business confidence. If government budgetary policy, especially in form of deficit financing, is rejected as a means to generate growth and employment, business confidence becomes all the more critical, in turn making the actions of the business leaders more important and granting them greater political influence. However, conversely, once a government realizes it can create employment by its own actions the significance of private business activity is correspondingly reduced (Kalecki 1943: 3). Kalecki also notes that the business class is particularly concerned that public investment should not stray into areas which might result in direct competition with private the private sector and thus reduce profitability (Kalecki 1943: 3).

It might seem logical for the business class to support a policy aimed at the encouragement of private consumption, whilst leaving investment, as far as possible, in the hands of the private sector. However, Kalecki is quick to dismiss such an idea; suggesting that it runs so deeply against the grain of capitalist ethics that it is likely to encounter even more opposition than state investment programmes. 'Indeed, subsidizing mass consumption is much more violently opposed by these experts than public investment. For here a moral principle of the highest importance is at stake. The fundamentals of capitalist ethics require that "you shall earn your bread in sweat"—unless you happen to have private means' (Kalecki 1943: 3). Kalecki's analysis explicitly recognises the class-consciousness of the business class and how this necessarily leads to deep opposition to full-employment policies.

the maintenance of full employment would cause social and political changes which would give a new impetus to the opposition of the business leaders. Indeed, under a regime of permanent full employment, the 'sack' would cease to play its role as a disciplinary measure. The social position of the boss would be undermined, and the self-assurance and class-consciousness of the working class would grow...'discipline in the factories' and 'political stability' are more appreciated than profits by business leaders. Their class instinct tells them that lasting full employment is unsound from their point of view, and that unemployment is an integral part of the 'normal' capitalist system (Kalecki 1943: 3).

Kalecki notes the preference of business class for policies designed at the encouragement of private investment- as opposed to direct government expansion of demand- but is critical of such an approach, considering that both reductions in interest rates or taxes might be successful in reducing the amplitude of the trade cycle but will not provide the basis for a full employment policy or even the means to avoid mass unemployment (Kalecki 1943: 4).

Arestis and Sawyer (2003) and Sawyer (2007) note that Kaleckian approach stresses the idea that active fiscal policy is much more likely to impact on aggregate demand than interest rate policy, referring both to Lerner (1943) and Kalecki (1944). 'In the longer term, the general fiscal stance can be set to support the level of aggregate demand consistent with high level of economic activity... The 'functional finance' approach (the term of Lerner, 1943, but also see Kalecki, 1944 for a similar view) postulates the setting of budget deficit to achieve high level of economic activity' (Sawyer 2007: 7-8, parentheses in the original).

However, at this point it is important to note that there are differences between Kalecki's approach and that of MMT, notably with respect to the latter's advocacy of a JG programme (Cooper, 2011; 2012). However, Cooper contends that

the reason for the disagreement on this issue relates to differing assessments of the political obstacles rather than technical considerations. Since MMT acknowledges the existence of political constraints and provides room for disagreement on these matters, the agreement over the economic analysis of full employment seems more reflective of the broad analytical compatibility between the approaches of Kalecki and MMT than do the differences in political analysis (Cooper 2011).

Mitchell (2010a) also considers the nature of Kalecki's skepticism about whether a full employment policy could be pursued in a capitalist system, given the strength of political opposition it would face from business leaders. Mitchell distinguishes between the problems associated with an economy with a fully employed private sector and those associated with an economy with a private sector and JG programme.

Kalecki is really considering a fully employed private sector that is prone to inflation rather than a mixed private-Job Guarantee economy. The Job Guarantee creates loose full employment rather than tight full employment because the buffer stock wage is fixed (growing with national productivity). The government never competes against the market for resources in demand when it offers an unconditional job to any unemployed workers under a Job Guarantee. By definition, any worker who takes a Job Guarantee job has zero bid in the private market (that is, no private firm is prepared to pay for their labour at the prevailing wages and prices) (Mitchell, 2010a).

Mitchell observes that workers in a JG pool actually constitute a greater threat to employed workers (in terms of effective competition for jobs) than the unemployed so in that sense a JG scheme might actually favour both employers and workers (Mitchell, 2010a). Mitchell highlights the decline of union power in the neo-liberal period and notes the consequent reduction in unions' ability to raise wages. In the current environment a JG policy becomes a key stabilizing element operating in the labour market which, in principle, should benefit both workers and industrial employers. However, Mitchell does agree that opposition to a JG scheme might well exist in the

contemporary world but he believes that is likely to originate from a different source from that suggested by Kalecki.

My argument here does not seek to disabuse anyone of the notion that there is no political lobby that is well organised and against the fiscal intervention by government – that is, when the benefits do not flow to some narrow wealthy sectoral interest group (like Wall Street bankers). Quite clearly we are witnessing an obscene campaign that is successfully opposing the use of fiscal stimulus and undermining the well-being of a great many people. But it is also undermining the core industrial sectors like manufacturing and construction where the old “captains of industry” were prominent. The point I would make is that the major political blockages are no longer those that Kalecki foresaw. The opponents of fiscal activism are a different elite and work against the “captains of industry” just as much as they work against the broader working class. The growth of the financial sector and global derivatives trading and the substantial deregulation of labour markets and retrenchment of welfare states has altered things considerably since Kalecki wrote his brilliant article in 1943 (Mitchell, 2010a).

In his 2012 article, Cooper revisits the issue of the apparent incompatibility of full employment and the political power of the business class. He notes how capitalists would resist a full employment policy as it reduces their power in the bargaining process with workers, making it difficult to restrain wage growth relative to profits and to impose working conditions that are to their advantage. He notes Kalecki’s assertion that ‘[w]ithout changes to the fundamental institutions of capitalism ... the maintenance of full employment remains an unachievable goal in capitalist societies’ (Kalecki, 1943).

However, Cooper considers that, from the perspective of MMT, the end of the Gold Standard and what followed under the Bretton Woods system of fixed exchange might just constitute such a fundamental institutional change. He notes that in the current system of floating exchange rates the central banks of nations with their own sovereign currencies are able to control the whole spectrum of interest rates and governments are never revenue constrained. In other words, in agreement with MMT, Cooper recognizes that a new operational reality has existed since the end of the Bretton Woods system (at least for countries with their own non-convertible currencies operating under floating exchange rates). Cooper contends that ‘even though capitalists are still likely to oppose full employment, they could not prevent a determined democratically elected

government from pursuing the will of the general population. The operative factor would then become the strength of the democratic pressure exerted by general populations for full employment relative to the political power of the capitalist class' (Cooper, 2012).

Cooper notes that MMT implies that a change in monetary system has great significance; when a nation has its own currency and operates under floating exchange rates the state has significantly enhanced power compared to its position under the gold standard or fixed exchange rates. MMT contends that,

Society possesses the capacity to determine the parameters of capitalist and non-capitalist behavior through the democratization of money. If a popularly backed sovereign government were determined to deliver full employment, capitalists would be unable to prevent it through any influence on the terms on which it spent. Capitalists would, of course, resort to whatever political power and influence they had, but they could not obstruct fiscal measures through bond vigilantism, investment strikes, and so on (Cooper 2012).

I would argue that Kalecki's summary is in full accord with the view of the advocates of MMT,

What the masses now ask for is not the mitigation of slumps but their total abolition. Nor should the resulting fuller utilization of resources be applied to unwanted public investment merely in order to provide work. The government spending programme should be devoted to public investment only to the extent to which such investment is actually needed. The rest of government spending necessary to maintain full employment should be used to subsidize consumption (through family allowances, old-age pensions, reduction in indirect taxation, and subsidizing necessities). Opponents of such government spending say that the government will then have nothing to show for their money. The reply is that the counterpart of this spending will be the higher standard of living of the masses. Is not this the purpose of all economic activity? (Kalecki 1943: 5).

Cooper notes that the apparent incompatibility of Kalecki's argument with MMT may be resolved. I would argue that this is indeed the case once the new operational reality which now exists under floating exchange rates is recognized as a 'fundamental reform'. 'Full employment capitalism' will, of course, have to develop new social and political institutions which will reflect the increased

power of the working class. If capitalism can adjust itself to full employment, a fundamental reform will have been incorporated in it. If not, it will show itself an outmoded system which must be scrapped' (Kalecki 1943: 5). Cooper also contends that for advocates of MMT, 'fiat money makes ongoing full employment feasible. Kalecki suggests that ongoing full employment will undermine capitalism over time. Perhaps both views will turn out to be correct' (Cooper, 2012).

It is hard to disagree with this sentiment. However, the acceptance of both MMT and the implementation of full employment policy seem rather distant propositions so we may have to wait some time before we can consider any evidence concerning the stability of capitalism under conditions of sustained full employment.

(iii) Marxian Roots

On the subject of the possible relationship between MMT and Marxism, Ferguson (2017) notes that, 'Viewed from afar, Modern Monetary Theory (MMT) and Marxism appear opposed...however, MMT and Marxism share an entangled history that thwarts neat distinctions and oppositions' (Ferguson 2017). He sees Marxism as a key forbear of both MMT and Post-Keynesianism, although establishing the exact lineage may be a highly complex task. 'Marxism functions as a philosophical torchbearer for the heterodox Post-Keynesian tradition from which MMT arises. What is more, Post-Keynesianism itself comprises a kaleidoscopic conflagration of Keynesian and Marxist impulses, which cannot be sharply dis-articulated' (Ferguson 2017). Ferguson specifies particular lines of direct influence not just in the development of concepts and theories but also in the work of economists working within the MMT corpus.

In terms of direct influence, MMT owes many specific insights to the history of Marxist thought. MMT relies heavily on Post-Keynesian theories of effective demand and stock-flow consistency, both of which are traceable to the second and third volumes of Marx's *Capital*. Moreover, MMTers such as Bill Mitchell, [as noted above] Mathew Forstater, and Peter Cooper³¹ regularly draw upon Marxist concepts and arguments in their writings, paying express heed to Marxism's ongoing relevance for MMT (Ferguson 2017, parentheses added).

Ferguson also highlights the links between MMT and circuit theorists working within both the Post-Keynesian and Marxist traditions 'Post-Keynesian circuitist theory has increasingly prioritized state credit money in their analyses of the monetary circuit (M-C-M') outlined in the first volume of *Capital*' (Ferguson 2017). Having acknowledged the linkages between MMT and Marxism, Ferguson then considers the extent of division between them. He suggests that there is indeed a deep-seated distinction between the two and, moreover, that is rooted in the different social ontologies of MMT and Marxism³². 'Generally speaking, scholarly and public debates skirt around

³¹ Peter Cooper might be regarded as one of most influential writers on the subject of potential compatibility between the work of Marx, Kalecki and MMT. He is well known for his influential *Heteconomist* blog.

³² This is a very important point to which we will return in chapter 2. I would argue that heterodox groups, in particular, Post-Keynesians, MMT advocates and Marxists share a common ontological vision in that their approaches are all underpinned by the (possibly implicit) acceptance of a layered ontology (such as suggested by critical realism). I am not suggesting that they agree on the nature of the specific mechanisms and institutions making up social reality rather that they have in common the supposition of existence of intransitive or real

MMT's and Marxism's competing ontological commitments. Instead, they argue over the technical operations of political economy and the political responses various crises necessitate. Upon closer inspection, however, it turns out that tacit ontological divisions structure such contests from start to finish' (Ferguson 2017). When illustrating the nature of the division, Ferguson highlights the specific importance of the ontology of money,

Marxism attributes the greatest degree of being to immediate material relations and imagines monetary abstraction as a necessary diminishment and volatilization of said relations. By contrast, *MMT treats remote obligations to a centralized currency issuer as ontologically prior to any decentered association and sees monetary abstraction as a means to at once socialize and enlarge relations of production and distribution*. Hence Marxism assumes that money is a private³³, alienating, and crisis-ridden exchange relationship that ought to be overcome. Yet *MMT holds money to be a boundless public utility that, while by no means untroubled, is well-equipped to actualize radical collectivist ends* (Ferguson 2017, emphasis added).

Ferguson considers the differing perspectives on unemployment emanating from within Marxism and MMT as a means to exemplify the impact of the different social ontologies characteristic of the two approaches

This ontological cleavage becomes clearest in the ways that Marxism and MMT explain employment and unemployment. For the Marxist, employment comes into being through private wage contracts between firms and workers. Unemployment is then understood principally as a negative relation, functioning as a constitutive excess³⁴ that reciprocally shapes capitalist production and exchange from the outside. *For the MMTer, however, unemployment is a positive relation that results from the tax obligation. No unemployed person sits outside this public obligation*

mechanisms which are distinct from the events they generate and the empirical domain in which these events are studied by economists.

³³ Under capitalism the private/public distinction for Marx differs from that of Post-Keynesians. Marxists see the state as a 'collective capitalist'.

³⁴ From a Marxist perspective, capitalism creates both a surplus for capitalists in the form of profit and a surplus of people over and above required by capitalists as labour (or 'reserve army').

*and government is ultimately responsible for determining the employment level*³⁵
(Ferguson 2017, emphasis added)

Ferguson notes the deep distinctions between Marxism and MMT, 'despite their shared histories and convergences, Marxism and MMT offer us two very different *Gestalts* of the macro-economic order' (Ferguson 2017). Ferguson develops his analysis by considering the importance of the concept of a 'centre of gravity'³⁶ to Marxism. He considers that 'Marxist literature tends to subordinate the macro-economic reality to material gravity, whereby far-flung abstractions always come down to material interactions between particular individuals' (Ferguson 2017). In contrast, he believes that MMT rejects both Marxism's focus on private exchange as the locus of value's realization and its 'gravitropic metaphysics' (Ferguson 2017) and considers that, 'MMT locates the center of macro-economic activity in an abstract legal rapport between the currency issuing center and the body politic that depends upon the currency to physically survive and thrive' (Ferguson 2017). Ferguson contrasts the Marxist conception of money as an abstract representation of the social value created and realised within capitalism with MMT's contention that 'the production of value is conditioned by money's abstract fiscal capacity and the hierarchy of mediation it supports...MMT radically expands the political horizon concerning what is possible under a modern money economy, affirming state spending as the macroeconomic backbone of production and distribution and a powerful weapon for political transformation'³⁷ (Ferguson 2017).

Cooper (2016) also examines the possible links between Marx, Kalecki and MMT and highlights the 'considerable degree of compatibility between Marx and various Kalecki- and Keynes-influenced approaches to macroeconomics' (Cooper 2016). However, he is careful to recognize the limitations of 'compatibility,' 'Compatibility, of course, does not imply that all these theoretical

³⁵ See Mosler (2012).

³⁶ Some Marxists consider that the abstract notion of a 'centre of gravity' plays a significant part in the theorising of Marx's concept of 'prices of production' Moseley (2016). However, Kliman and McGone (1988; 1999) disagree with this view.

³⁷ There is a rich and varied body of theory regarding the effect of the introduction of monetary exchange on human society, 'A flood of philosophers, social theorists, and political scientists have in turn taken up the debate how moneyed exchange revises human relation. Karl Marx, Adam Smith, Carl Menger, Georg Simmel, Karl Polanyi, Michael Sandel, and others split over whether moneyed exchange is a profoundly destructive force that alienates individuals from the product of their own labor and reduces them to calculating and amoral automatons or an emancipatory practice that allows people to escape dependency and irrigates human productivity. *The striking point of agreement is that the move to moneyed exchange matters greatly: that transformation in human relations is a critical effect of the governance decision to fashion political contributions into a circulating asset*'. (Desan 2017, emphasis added)

approaches stand or fall together. It simply suggests, to the extent that the compatibility exists, *that it is possible to see them all as fitting within an overarching, open analytical framework*' (Cooper 2016, emphasis added). Cooper contends that it is possible to suggest three elements of compatibility. First, in Marx macroeconomics dominates microeconomics; rather than seeking microeconomic foundations for macroeconomic outcomes, the behavior of individual agents is subject to the influence and constraints of the macroeconomic system in existence.

The three aggregate equalities³⁸ describe the totality in which individual capitalists and workers interact and determine the summative outcomes. For example, Marx argues that once total surplus value is created in the productive process, its total size must remain unaffected by the way it is distributed between capitalists (Cooper 2016). A commitment to methodological individualism characterizes mainstream neo-classical economics, its critical building blocks are 'atomistic' with 'rational' actors (expected utility-maximising individuals and firms) interacting in a universal market form to produce equilibrium outcomes. Fine (2016) describes this method and structure as the 'technical apparatus' and 'architecture' which underlie neoclassicism and considers the result of relying solely upon this reductionist methodology. Having assumed away any real world social and political factors in the derivation of their models, neoclassical economists then use the very same narrowly-based deductivist theories to analyse the actual world, including situations they had deliberately excluded when constructing their theories. This approach inevitably leads to the failure to get grips with providing satisfying explanations of reality on the part of neoclassical economists. The methodological foundations of the work of Keynes, Kalecki and Marx can be contrasted with this reductionist individualist approach. Their work might be described as 'macro-founded', in other words macroeconomic factors determine the nature of individual action³⁹. In other words, and in contrast to the orthodox position or more colloquially, the 'macro dog' wags the 'micro tail'.

However, many Marxists, specifically those advocating the temporal single system interpretation (TSSI), would deny the existence of a division between macro and microeconomics in the approach taken by Marx, meaning the 'macro dog wagging the micro tail' metaphor has no

³⁸ 'Marx's three aggregate value-price equalities follow immediately his conception that competition leads to a different distribution of the surplus value without altering the total amount already produced; total profit=total surplus value, total price = total value, the aggregate "price rate" of profit equal the aggregate "value" rate of rate of profit.' (Kliman 2007: 144)

³⁹ Rather than the abstract formalism and methodological individualism of neo-classical economics, Marxist methodology might be described as anti-reductionist; Marx's work is characterised by analysis of the world based on social class relations, where human agency is a collective, historic dynamic.

traction. The summation of the actions of all individual capitalists produces an economy-wide result, however a *macro-model* is absent from Marx; it is simply that, for Marx, the ‘macroeconomic’ rate of profit falls precisely because at the individual (or ‘microeconomic’) level capitalists have a tendency (generated by pressure of competition) to increase their investment in constant capital relative to their inputs of living labour.

Second, in common with Keynes, Kalecki and the Post-Keynesians, Marx rejects the classical dichotomy⁴⁰ as his work *applies to a monetary production economy* and third, Marx’s analysis of the private monetary circuit is consistent with the endogenous money approach which characterizes the work of the Post-Keynesians, Kalecki, circuit theorists⁴¹ and MMT. Marx (in *Capital*, volume II (1885/2013) describes the private monetary circuit as $M — C \dots P \dots C' — M'$. To initiate the process, a sum of money (M) is advanced by capitalists to finance the purchase of the means of production and labour power (the money used for this purpose is described as ‘capital’ by Marx). The money is then transformed into commodities which are used in production (P) in order to manufacture new commodities for sale on the market (C’). If surplus value⁴² is realized then capitalists are able to obtain a sum of money (M’) which is greater than their initial outlay (M). In this case, $M' > M$ enabling the capitalists to gain a money profit. The initial sum (M) could be drawn from past savings or through bank credit. However, if it is financed using the former, an understanding of the endogenous money approach allows past savings to be interpreted as the result of previous money creation (either untaxed government spending or unrepaid private credit).

However, advocates of the TSSI of Marx would contend that the differing treatments of logical time between Marx and Kalecki complicate attempts to construct compatibility between the two approaches (Potts and Armstrong forthcoming). In the Post-Keynesian, Kaleckian and circuitist approaches advances (or creation) of bank credit and its destruction (see above) occur within a self-contained time period⁴³. For Kalecki, acts of prior spending, both in terms of increases in

⁴⁰ The classical dichotomy refers to the view that real variables, such output and employment, are determined by non-monetary forces. Money is viewed as neutral or as a ‘veil’ and the quantity of money merely determines the price level. Although Marx rejected the classical dichotomy, money is regarded as neutral in ‘Marxist’ models, such as that described by Moseley (2016).

⁴¹ The circuit theorists, such as Augusto Graziani, accept the endogenous view of money and develop a theory of the monetary circuit complementary to the Post-Keynesian view. (See Lavoie, 2009: ch.3)

⁴² For Marx, surplus value is created if the value of socially necessary labour exceeds the value of labour power used in production of commodities (Kliman 2007: 23-4).

⁴³ James Meade (1993) described how in 1931 he used process analysis to prove the fundamental Keynesian relation that investment causes saving. This note uses more general versions of process analysis to demonstrate

private sector and public sector net spending, lead to higher revenue for firms, in turn generating a tendency for aggregate profit to rise (Parguez 2002); a process which can be modelled within the same self-contained period. Advocates of the TSSI of Marx have a different approach to logical time and focus on how periods of production are separated sequentially by periods of circulation. Firms realise profits, extracted from labour in the previous production period, by acts of spending in circulation prior to the next production period and not by a prior act of spending in the same self-contained period.⁴⁴

For TSSI advocates, firms must collectively, in circulation, clear the market, through their own consumption and purchase of constant capital and labour inputs for the following production period, to successfully realise their profits, *in money form*, from the preceding production period⁴⁵. Thus, from a perspective consistent with the TSSI, abstracting from any worker saving or budget deficit, the Kaleckian accounting relation holds in circulation *between production periods rather than within one self-contained period* (Potts and Armstrong forthcoming). An interesting insight then follows from the TSSI approach; even if capitalists fail to sell all their output in circulation, they still accrue profits equal to the surplus-value extracted from labour in production. Provided price is established at the end of production, the appropriated value of commodities is determined. If the aggregate total value of newly produced commodities exceeds the wages paid to workers (variable capital) plus the value of constant capital consumed in producing those commodities, surplus-value has been extracted from labour. Assuming any unsold stock is valued at this established price, this full value comes into existence through production (Freeman 1996) but it is realised in circulation.

that the structure of the underlying processes creates 'Mr Meade's Relation', not the mathematical assumption of a fixed marginal propensity to save nor the heuristic assumption of a closed economy. The processes create a 'conservation of saving' principle, and the multiplier operates until all saving is voluntarily held. The final section highlights the ongoing importance of process analysis and this relation for macroeconomic methods and policy.

⁴⁴ Circulation is usually assumed to occur instantaneously between production periods, see Potts (2016) for an exploration of circulation occurring alongside production periods.

⁴⁵ For circuitists firms need funds prior to sales in order pay for raw materials and wages in advance of production. However, if the firm is characterised as using retained profits in this model, the need to *commence* the process by going into debt – in the way suggested by the circuitists- is avoided. In Marx there is an abstract analytical distinction between creation of surplus in production and the realisation of surplus in circulation but such a distinction is absent in Post-Keynesian theory where profit is merely a monetary phenomenon; thus, the circuit as a self-contained period makes logical sense in Post-Keynesian theory but would not when considered in the light of the TSSI of Marx.

Provided capitalists invest sufficient profits in expanding production to enable an increase the extraction of surplus value to occur, then profits will increase in the next production period, even if the capitalists consume a proportion of their profits. If demand in the ensuing period of circulation exceeds that required to buy all the current output at current prices then accumulated stocks can be sold to satisfy this demand. However, since the stocks were carried into the period as part of the capitalists' total capital, (which can only grow by the total surplus-value extracted from labour), from a TSSI perspective, it becomes clear that the value in the stocks simply changes *form to money*, creating a release of capital, not an increase in that period's profit.

Furthermore, if capitalists invest more in this following period, but this investment involves solely an expansion of the input of constant capital, with living labour input and thus the surplus-value extracted from this living labour remaining constant, then total profit would remain unchanged. This is because total profit is determined by total surplus-value and does not simply come into existence as a financial outcome resulting from spending (or demand). Advocates of the TSSI argue that, for Marx, profit cannot be simply categorised as a demand-determined phenomenon. It is, of course, quite possible that growth in production will lead to an increase in living labour input and therefore causing a rise in the extraction of surplus value but, from a TSSI perspective, stating that 'capitalists spend to earn' is a superficial aphorism. This primary focus on demand ignores production which is the true origin of profit.

According to the TSSI of Marx, the sequence of periods might be thought of as best represented by the image of a dynamic 'spiral flow', and not, as is the case for Post-Keynesians and Circuitists, simply a connected sequence of self-contained periods (Potts 2017a; Potts and Armstrong forthcoming). The advocates of the TSSI do not rule out the importance of the creation of credit in the process (and do not, of course, assume, like the mainstream, that the interest rate adjusts total investment to total saving). Neither does capitalism's potential for growth through extracting surplus-value mean that growth is inevitable or the market must clear (consistent with Say's Law). In response to low profitability, or indeed anything that causes pessimism amongst capitalists, production might well be decreased, creating falling demand and output; if stock continues to build up, production will be reduced at some point and old stock will clearly lose value if price falls (Potts 2016).

Mitchell (2011) notes how Marx's explanation of why a capitalist economy might be characterized by involuntary unemployment pre-dates Keynes. 'Post Keynesians typically begin with Keynes'

General Theory (1936) in explicating the principle of effective demand. However, the essential elements underpinning the critique of Say and the modern understanding of involuntary unemployment in a monetary capitalist economy can be found in Marx, particularly in Theories of Surplus Value (1863)' (Mitchell 2011). Marx was highly critical of the application of Say's Law and the classical notion that demand is determined by supply (or production). Marx suggested that such views follow from applying the characteristics of a barter or direct exchange economy to a monetary economy (Mitchell 2011); a link which was invalid.

The conception (which really belongs to [James] Mill), adopted by Ricardo from the tedious Say ...that *overproduction* is not possible or at least that *no general glut of the market* is possible, is based on the proposition that *products are exchanged against products*, or as Mill put it, on the "metaphysical equilibrium of sellers and buyers", and this led to [the conclusion] that demand is determined only by production, or also that demand and supply are identical (Marx 1969: 493, emphasis and parentheses in the original).

Marx acknowledges the possibility of a deficiency in demand leading to a slump in a capitalist economy; this follows directly from his analysis of the money circuit and his understanding that the hoarding of inert money balances might 'break the circuit'; as noted by Mitchell, 'The existence of a circuit breaker in the form of idle money stocks led Marx to conclude that there was the possibility of stagnation (defined as a conflict between purchase and sale)' (Mitchell 2011, parentheses in the original). Mitchell also notes how Marx recognized the importance of the concept of *effective demand*- i.e. demand which was backed by the ability to pay- which was later to become a key aspect of Keynes's work and how this understanding allowed him to counter Ricardo's denial of the possibility of the existence of a 'general glut.'⁴⁶

⁴⁶ Mitchell (2011) notes how Marx first quotes the argument made by Ricardo argument to refute the contention that a general glut is possible, 'Too much of a particular commodity may be produced, of which there may be such a glut in the market, as not to repay the capital expended on it; but this cannot be the case with respect to all commodities; the demand for corn is limited by the mouths which are to eat it, for shoes and coats by the persons who are to wear them; but though a community, or a part of a community, may have as much corn, and as many hats and shoes, as it is able or may wish to consume, the same cannot be said of every commodity produced by nature or by art. Some would consume more wine, if they had the ability to procure it. Others, having enough of wine, would wish to increase the quantity or improve the quality of their furniture. Others might wish to ornament their grounds, or to enlarge their houses. The wish to do all or some of these is implanted in every man's breast;

'Marx also anticipated the modern distinction between nominal and effective demand which lies in the understanding of the real contribution of Keynes. Marx noted that in denying the possibility of a general glut, Ricardo appeals to unlimited needs of consumers for commodities and any particular saturation would be quickly overcome by increased demands for other commodities' (Mitchell 2011). Mitchell commends *Theories of Surplus Value*, 'because its wisdom lies at the heart of the modern problem of high unemployment and stagnant growth. Keynes didn't offer much more than you can find in this work by Marx' (Mitchell 2011). However, Marx's analysis is distinguished from the other heterodox views of the money circuit by its *explicit description of the origins of the money profit realized by capitalists* i.e. that the advance of money allows capitalists to exploit living labour by combining it with material inputs in the production of commodities to generate surplus value which is manifested in money profit if the commodities are sold for a greater sum than the initial outlay. (In contrast, for example, there is no explicit link made between surplus labour and the generation of profit by Post-Keynesians).

Thus, I might argue that Marx's value theory provides a useful insight – absent in other heterodox approaches- it explains the real origin of profit. The nature of this explanation is not contradictory to the work of Kalecki and Cooper (2016) illustrates its compatibility. Cooper makes a several simplifying assumptions⁴⁷ in order to demonstrate the close relationship between Marx's concept

nothing is required but the means, and nothing can afford the means, but an increase of production' (Ricardo 1846: 176).

Marx then provides the counterargument, 'Could there be a more childish argument? It runs like this: more of a particular commodity may be produced than can be consumed of it; but this cannot apply to all commodities at the same time. Because the needs, which the commodities satisfy, have no limits and all these needs are not satisfied at the same time. On the contrary, the fulfilment of one need makes another, so to speak, latent. Thus nothing is required, but the means to satisfy these wants and these means can only be provided through an increase in production. Hence no general overproduction is possible. What is the purpose of all this? In periods of overproduction, a large part of the nation (especially the working class) is less well provided than ever with corn, shoes etc., not to speak of wine and furniture. If over-production could only occur when all the members of a nation had satisfied even their most urgent needs, there could never, in the history of bourgeois society up to now, have been a state of general over-production or even of partial over-production. When, for instance, the market is glutted by shoes or calicoes or wines or colonial products, does this perhaps mean that four-sixths of the nation have more than satisfied their needs in shoes, calicoes etc.? What after all has over-production to do with absolute needs? It is only concerned with demand that is backed by ability to pay. It is not a question of absolute over-production—over-production as such in relation to the absolute need or the desire to possess commodities. In this sense there is neither partial nor general over-production; and the one is not opposed to the other'. (Marx 1969: 506)

⁴⁷ Cooper assumes, for simplicity, a closed economy without fixed capital, a government balanced budget, productivity is constant (making it unnecessary to use time subscripts on value and money magnitudes) and that all labor is 'productive' (in a Marxian sense) and performed in the private sector. 'Relaxing these assumptions would slightly complicate, but not alter, the basic macro correspondences.' (Cooper, 2016)

of surplus value and Kalecki's idea of the mark-up and thus illustrate the complementarity of their approaches. Kalecki defines the markup⁴⁸ as;

$$\text{Markup} = \frac{\text{Nominal Income}}{\text{Money Wage Bill}}$$

Cooper then translates Kalecki's concept into Marx's terms. Given his simplifying assumptions, he notes that, 'nominal income is equal to net value added (variable capital plus surplus value) measured in monetary terms (\$v + \$s). The money wage bill is the monetary outlay on variable capital \$v' (Cooper 2016). This gives an enhanced equation which enables Kalecki's markup⁴⁹ to be seen as one plus the rate of surplus value in Marx's terms, where s = value and v = variable capital.

$$\text{Markup} = \frac{\$v + \$s}{\$v} = 1 + \frac{s}{v}$$

The argument for compatibility can be further developed by linking Kalecki's concept of the 'degree of monopoly' (which takes account of the cost of raw materials) to Marx's concepts of surplus value and the rate of profit.

$$\text{Degree of Monopoly} = \frac{\text{Proceeds}}{\text{Money Wage Bill} + \text{Materials Cost}}$$

For Marx total price is the equivalent of proceeds. If materials cost equals constant capital (c) [excluding depreciation], in the absence of fixed capital the following equations apply:

$$\text{Degree of Monopoly} = \frac{\$c + \$v + \$s}{\$c + \$v} = 1 + \frac{s}{c + v} = 1 + r$$

⁴⁸ Such an approach implies the mark-up is only a mark-up on labour costs

⁴⁹ Given the mark-up is applied on labour costs alone then the implication is that goods exchange at produced values. This *holds in aggregate* but not necessarily in the case of individual firms.

Cooper then concludes that Kalecki's degree of monopoly is equivalent to one plus the rate of profit (r)⁵⁰. He then suggests that Marx's value analysis might be used to explain the Kaleckian concepts of the markup and the degree of monopoly⁵¹.

For instance, Kalecki argues that the degree of monopoly reflects various institutional factors. These factors include the concentration of industry, the development of marketing and advertising strategies, the strength of trade unions and the ratio of overheads to prime cost (also known as variable cost). These institutional factors can just as easily be regarded as influencing the rate of surplus value (s/v) and the organic composition of capital (c/v)' (Cooper, 2016).

He shows Marx's definition of the rate of profit

$$\text{Rate of Profit} = r = \frac{s}{c + v} = \frac{\frac{s}{v}}{\frac{c}{v} + 1}$$

He is then able to derive an equation for the degree of monopoly in Marxian terms

$$\text{Degree of Monopoly} = 1 + r = 1 + \frac{\frac{s}{v}}{\frac{c}{v} + 1}$$

In this way, Cooper is able to show how an argument might be made to suggest that, viewed through Marxian eyes, the rate of surplus value and the organic composition of capital underlie the so-called 'institutional factors' which affect the degree of monopoly. Cooper also considers Kalecki's distributive relation, where the wage share of income (w) depends on the degree of

⁵⁰ However, Cooper admits the 'correspondence is somewhat modified once fixed capital is included because of different treatments of depreciation' (Cooper, 2016).

⁵¹ However, from a Marxist perspective such an equation can only apply to *appropriated values for individual firms*. In aggregate, total profit must equal total produced surplus value. Among other factors, an individual firm's monopoly power might enable it to appropriate a greater share of this total produced surplus value but, in aggregate, the rate of profit is determined by extent of exploitation of workers and the organic composition capital.

monopoly (k) and the ratio of materials cost to money wages (j), and how it too might be understood in Marx's terms.

$$\omega = \frac{1}{1 + (k - 1)(j + 1)}$$

Cooper notes that given the degree of monopoly (k) has already been shown to be equivalent to one plus the rate of profit (r) and the ratio of materials cost to money wages (j) is the monetary equivalent of the organic composition of capital, it is possible to express Kalecki's distributive relation as

$$\frac{\$v}{\$v + \$s} = \frac{1}{1 + (1 + r - 1)\left(\frac{c}{v} + 1\right)}$$

or, more simply as,

$$\frac{v}{v + s} = \frac{1}{1 + r\left(\frac{c}{v} + 1\right)}$$

Cooper summarizes his conclusions by noting the following aspects of complementarity between Kalecki and Marx.

The aggregate markup depends on the rate of surplus value (s/v), sometimes expressed as the ratio of surplus labor to necessary labor. The degree of monopoly depends on the rate of profit, which in turn reflects the ratios of surplus to necessary labor (s/v) and dead to living labor (c/v). The distribution of value between workers and capitalists depends on the rate of profit (or degree of monopoly) and the organic composition of capital (or ratio of materials cost to money wages). In short, the markup, degree of monopoly and distribution can all be analyzed in terms of Marx's two key value ratios – the rate of surplus value and organic composition of capital (Cooper 2016).

Advocates of the TSSI agree that, at an aggregate level, in a pure circulating capital model, the equations do hold, but contend that Cooper's interpretation hides an essential difference between the approaches of Marx and Kalecki (Potts and Armstrong forthcoming). They point to the reason that, at an aggregate level, the mark-up and the degree of monopoly power relate to the aggregate rate of profit; it is because, following Marx, at the aggregate level, total produced value equals total appropriated value (or price) and total surplus-value equals total profit. However, they would add that this is in no way dependent on the degree of competition (total profit must equal total surplus-value even if we assume firms to be in perfect competition or that they are all monopolies).

To illustrate the TSSI argument, for simplicity, we may assume that all firms are identical (so could equally be monopolies or perfectly competitive), but in Marx's work he imagines both monopolies and competitive firms and considers how they affect each other. For Marx (1981: 101), monopolies lie outside the tendency for profit rate equalisation operating across the sectors in the competitive economy. They are likely to appropriate more profit than they produce, thus reducing the profit that can be appropriated in the competitive sectors, because total profit is *already determined in production by the total extraction of surplus-value*.

From a TSSI perspective, the equations proposed by Cooper, although valid in aggregate, do not hold for an individual sector or an individual firm. For a monopoly, their mark-up, or degree of monopoly power, will determine how much value they can appropriate, not the value they produce ($c + v + s$). Firms in competitive sectors with below than the average organic composition of capital (across competitive sectors) will appropriate less value than they produce in aggregate, while firms in competitive sectors with above average organic composition of capital will appropriate more value than they produce in aggregate, to tend to equalise the profit rate across (competitive) sectors. In addition, within each competitive sector, the heterogeneity of individual firms means they are not likely to appropriate the value that they produce. Assuming the absence of monopoly, in a sector with average organic composition of capital (and assuming the profit rate is equalised between sectors), the average firm would appropriate the same value as it produces, so would earn the overall average rate of profit. However, within this sector all firms ahead of the social average level of productivity, (the leaders), would have a higher profit rate than the average, while laggard firms, behind the social average, would appropriate less value than they produce and have a lower profit rate than the average. So, the aggregate equalities are inapplicable to individual firms; no firm is at all likely to appropriate the same value as it produces.

Followers of the TSSI would contend that those factors identified by Cooper as altering the aggregate mark-up must also change the aggregate rate of profit through their influence on the rate of exploitation (the ratio of s to v) or the organic composition of capital.⁵² Clearly all firms cannot become more 'monopolistic' leading to an increase in overall rate of profit (unless for some unspecified reason this movement successfully changes the rate of exploitation or the organic composition of capital). Marx provides an explanation of how relative surplus-value can be produced; through technological change, cheapening workers' means of subsistence, thus allowing v to fall and s to rise. However, such a process is likely to be accompanied by a rising organic composition of capital, the very cause of the technological change, ensuring an overall tendency for the profit rate to fall. Marx also contends that if the rate of exploitation is changed by simply changing workers' standard of living (Marx, does consider wages to depend on moral/social considerations), then this change in absolute surplus-value will change total profit. However, from a TSSI perspective, 'the macro dog is not simply wagging the micro tail'. The advocates of the TSSI would argue against Cooper's contention that 'the distribution of value between workers and capitalists depends on the rate of profit', and replace it with, 'for Marx, it is clearly the rate of profit which depends on the distribution of value between workers and capitalists (and the organic composition of capital)'.

Thus, in the view of TSSI advocates, from Marx's perspective, it makes as little sense to imagine that the degree of competition somehow alters total profit, if total surplus-value is unchanged, as it does to imagine that a change in total investment changes total profit, *if total surplus-value is unchanged*. Yet these are 'the macro dogs, which are wagging the micro tails' in Kalecki, Post-Keynesian and MMT models that Cooper is suggesting represent a 'compatibility' with Marx (Potts and Armstrong forthcoming).

⁵² The case of advertising is interesting to consider from the perspective advocated by Cooper; namely advertising increases the mark-up/the rate of profit. Marx's (see, especially, Marx, 1978) notion of productive labour (of value and surplus-value) and unproductive labour (that produces no value and consumes surplus-value produced by productive workers) is relevant. Increasing advertising, which Marx considers to be unproductive labour, would reduce total profit (equal to total surplus-value, minus that surplus-value consumed unproductively). It may cause individual firms to be able to appropriate more, increasing their profit (to the extent the more they appropriate outweighs the advertising cost), but at the cost of leaving other firms to appropriate far less (to bear the cost of advertising, and any rise in profit for those who advertise). So, increased advertising cannot in aggregate increase the mark-up/the rate of profit, rather, in fact, it will reduce it. Potts (2007) explains how, for Marx, research and development works in exactly the same way.

Furthermore, we might look again at the 'Kaleckian aphorism'; 'Capitalists earn what they spend, and workers spend what they earn' and Kalecki's profits equation,

Profits = consumption out of profits + investment

When we add an understanding of the endogenous money approach an interesting insight emerges. If entrepreneurs expect investment to be profitable they will acquire bank finance to pay for it. In a simple closed economy, the investment must generate an equal amount of saving (saving is merely the accounting record of investment). Given workers are too poor to save then all the investment must ultimately accrue to capitalists as saving in the form of money profits. If firms use past savings to finance investment it simply means using the *result of previous investment* in the form of saved profits. Capitalists may also use past savings to finance their own consumption; this consumption will generate additional profits for the capitalist class and merely provides a mechanism for the redistribution of saving amongst capitalists. From a Kaleckian perspective, it is clear that endogenously-created bank finance is the ultimate source of all savings (and profits) and-given zero savings on the part of workers-all this monetary saving will settle in the hands of the capitalist class.

In summary, we might ask if such an approach can be reconciled to a Marxist perspective where the ultimate source of profit lies in the exploitation of living labour? The critique of the TSSI Marxists notwithstanding, we might argue that the answer is a tentative 'yes'- and that Marx's insights add a richness and delve deeper into the process of profit generation. For Marx, the generation of profit can be explained by the process of surplus-value creation and appropriation by the capitalist class. This process is *facilitated by the advance of money capital but the profit itself results from labour exploitation*. In contrast to the Kaleckian approach profit where is merely a financial outcome, determined by the level capitalists' own spending on both consumption and investment, Marx's analysis provides an explanation of the real origins of profit and the actual process and structure involved in profit generation and, critically, as we have seen, requires a more sophisticated approach to logical time.

We might extend this analysis and consider a position where exploitation is not 'total', in other words capitalists pay workers more than the minimum required for them to survive and reproduce (we might explain this at a microeconomic level by the efficiency wage theory or at a macroeconomic level as a concession made collectively by capitalists in order to perpetuate the capitalist system). If we accept the view that capital tends to concentrate in fewer and fewer hands

over time then we might expect oligopoly and monopoly power to tend to increase. Without the pressure of intense competition, capitalists might well pay above minimum (although still extracting significant profit from the exploitation of labour). This would allow wage earners to increase their living standards and, importantly, to save. We can now see than any initial advance to capitalists may yield both saving for the capitalist class in the form of profits but also monetary saving for the working class would be possible. We can now see how the extent of labour exploitation determines income distribution between the classes and note that it seems quite reasonable that capitalists-if they can reduce the immediate pressure of competition- are able to 'give just enough away' to keep the capitalist system itself going (this view is consistent with the above contention of the TSSI Marxists that the rate of profit depends upon the distribution of value between labour and capital). In this context, organized labour, specifically, trade unions, may be seen as a means to reduce the degree of labour exploitation in capitalism. Of course, they cannot reduce it to zero (in that case, capitalism would cease to exist) however, the extent to which they can force capitalists collectively to pay above subsistence wages, and allow workers to save, will determine the income share of the working class vis-à-vis capitalists.

At this point it is important consider the possible complementarity between the Marxist notion of the monetary expression of labour time or 'MELT'⁵³ and MMT's concept of the value of the currency. Wray (1998) notes that 'once the government realizes that its spending decision determines the quantity of fiat money available to meet tax obligations it imposes it can exogenously set the prices of those goods and services [including labour] it buys from the private sector. This determines the value of the currency' (Wray 1998: 159, parentheses added).

It is thus possible to define the value of the currency in terms of labour time. Cooper (2010) gives equations for equations for the MELT (m) and value of the currency (z).

$$m = \frac{\text{Net Product}}{\text{Total Employment}} = \frac{PY}{L}$$

$$z = \frac{\text{Total Employment}}{\text{Wage Bill}} = \frac{L}{W}$$

⁵³ The MELT measures the new value created by a period of socially necessary labour in money terms e.g. '[i]f each hour of socially necessary labour adds \$60 of new value, the MELT is \$60/hr.' (Kliman 2007; 25)

He shows how both the MELT and the value of the currency can be expressed⁵⁴ so as to illustrate their complementarity (below) and also provides a numerical example⁵⁵,

$$m = \frac{1}{z} \cdot \frac{PY}{W} \quad \text{or} \quad z = \frac{1}{m} \cdot \frac{PY}{W}$$

(where; W= the wage bill (assumed to be equal to variable capital), L= total employment, P= the general level of prices and Y= real output).

Following on from this analysis, it might appear tempting to draw parallels between MMT's advocacy of a JG scheme and Marx's idea of simple labour⁵⁶; the implementation of a JG policy would enable the state to determine the money wage value of simple labour by offering a fixed wage to any person willing and able to work irrespective of skill level. Viewed from the opposite perspective, as a monopoly issuer of the currency, the state can determine its value by setting, 'unilaterally the terms of exchange that it will offer to those seeking its currency' (Mosler and Forstater 1999: 174).

Advocates of MMT recognize that the government can determine the value of any commodity in terms of the state's currency by agreeing to buy or sell an unlimited quantity at a fixed price, as was the case under the gold standard. The government can determine the value of currency of a commodity or a unit of labour⁵⁷; 'if the state required that to obtain one unit of HPM [high-powered money], a person must supply one hour of labour, then money will be worth exactly that – one hour of labour' (Wray 2003: 104, parentheses added).

⁵⁴An implicit assumption that the so-called 'realisation problem' has been solved underpin this reasoning. The realization problem was first considered by classical economists such as Ricardo and Sismondi. Keynes's theory of effective demand also has a bearing on it. However, it was Marx who gave it its most rounded — and controversial — treatment. At its simplest, the realization problem amounts to this: is there sufficient monetary demand for the commodities which have been produced to be sold, and sold at their value? (Kenway 1999: 326-30)

⁵⁵ See Cooper (2016)

⁵⁶ Kliman (2007: 22)

⁵⁷ Cooper provides a numerical example by way of illustration, 'A government that sets a minimum wage defines the value of the currency in terms of an amount of minimum-wage work – or an amount of 'simple' labor time. If the minimum wage were \$10/hr, the value of \$1 would be 6 minutes of simple labor. More skilled labor can be considered as a multiple of simple labor – 'complex' labor. For instance, a high-skilled worker who received \$60/hr would take 1 minute to obtain what required 6 minutes of simple labor. The value of \$1 could be expressed as 6 minutes of simple labor or 1 minute of complex labor. If a generalized increase in prices (including wages) occurred, and the minimum wage increased to \$15/hr, the value of \$1 would fall to 4 minutes of simple labor. So inflation represents a reduction in the value of the currency' (Cooper, 2010).

If we accept that it is unlikely that a capitalist economy in peacetime would ever exceed full employment, removing the need for the state to 'sell' labour (notionally at least), the JG scheme might be accepted as a means to set a floor wage for basic labour. Once the government introduces a JG scheme it effectively defines the value of money in units of simple labour providing a practical manifestation of a basic 'labour theory of value' and the wages determined in private markets might then be seen as reflecting the 'complexity' of the labour supplied in manner suggested by Marx.

Again, an advocate of the TSSI would tend to disagree that Cooper has found a definitive source of compatibility between Marx and Kalecki (or Post-Keynesianism), contending that Cooper is only considering the net product MELT⁵⁸. Essentially, constant capital is ignored, as output of constant capital cancels out input of constant capital, with any increase in output of constant capital representing net investment which, in turn, is part of 'real' output, or the net product. But the TSSI of Marx does not just focus on the net product.⁵⁹ Crucially, the cancelling out of constant capital stands in the way of understanding the fact that inputs can vary in unit-value to outputs. Such a key insight underpins an understanding of why Marx's tendency for the profit rate to fall does hold. If input and output values are calculated simultaneously, or valued at replacement cost Marx's 'most important law' (Marx 1973: 748) is missed, and moreover the monetary expression of *his* unit of value is necessarily miscalculated.

From a TSSI perspective, Wray's value of currency, *as presented by Cooper*, is just the average wage. It is very similar to Keynes's idea of the wage unit for a standard hour of labour (Keynes 1936: Ch. 4); the unit that he introduces in order to redirect his analysis away from conventional real terms. However, Wray's value of currency and Keynes's wage unit are both imperfect measures of value, as they are not invariant relative to the distribution of new value between capitalists and workers (Potts 2017b). If wages fall relative to the price of inputs and profit (on net product), total output measured in wage units will rise simply because inputs and profits would represent more labour-time as the 'price' of labour-time has fallen. However, such an eventuality should not be taken as an improvement in total output, or profit, being dependent, as it is, on relative prices; all that has really changed is the distribution of value, not value itself.

⁵⁸ Foley (1982) pioneered the Marxist **net** product approach, terming it the 'New Interpretation' (NI).

⁵⁹ The TSSI of Marx and the NI are similar in their recognition that the value of labour-power is defined by the wage (divided by the appropriate MELT, this period for the NI, and last period for the TSSI) i.e. they share a non-dualistic concept of the value of labour-power, unlike simultaneous and dualistic interpretations of Marx.

TSSI advocates note the contrast between Marx's unit of measurement, also an hour of simple labour, and that of Wray (and Keynes). They contend that Marx's unit is not the monetary expression of the wage, which is of course variable (variable capital), but is the monetary expression of its value, the monetary expression of an hour of newly created value. In addition, this value is not only calculated for net product; it is the monetary expression of an hour of value, whether it is new value produced by living labour or transferred value from constant capital. MELT does not depend on the distribution of value, the value of total output simply equals the value transferred in production by constant capital and the total living labour worked in production. So, if wages were higher, then profit would be lower, with total value remaining the same. Thus, TSSI advocates again criticise what they see as an alleged compatibility; dependent on particular assumptions in particular restricted models.

On a deeper level, from a TSSI perspective, the value of currency described by Wray, can be determined by the government⁶⁰, whereas for the TSSI of Marx MELT is the result of price determination; it is the right tool to find a reliable unit of value, that is Marx's unit of value, which is not just purely nominal or tied to any notion of equilibrium, or other feature of convention economics.

Thus, it would appear to be easy to over-emphasise the scope for integration, despite some obvious degree of complementarity between Marx, Kalecki, Keynes, Post-Keynesianism and MMT. The issue is clearly a highly complex and controversial topic. I might at least tentatively, argue that the attitude of the latter four heterodox groups (and others) towards Marx depends upon their approach to value theory in general and Marx's value theory in particular. Many Post-Keynesians make little or no reference to a value theory *per se*. They concentrate their work on

⁶⁰ Wray notes how, in principle, the state could set the price of every item it bought. However, in practice, such a policy could cause massive disruption to the relative price system as well as being highly complex to administer. To illustrate his point, he chooses an extreme example whereby the government offered to buy hammers for \$500 and aircraft carriers for \$1000 (Wray, 1998: 171-2) in order to allow the private sector to obtain the state money it needed to pay its taxes. Once the government had bought all the hammers it wanted the private sector would have to supply aircraft carriers for \$1000! He summarises the result; '[t]here is no doubt that this could be very disruptive, causing relative prices to adjust, and causing nominal prices to fall drastically (the price of labour may well fall to thousandths of a penny per day). And it is possible that required price movements would be beyond the capacity of the economy so that the aircraft carrier did not get built and the population did not pay its taxes. But the point is that if the production were possible and prices were sufficiently adjustable, the government would be able to set the price anywhere it desired. This is the logic of the taxes drive money view.' (Wray, 1998: 171-2) Clearly, if the government exogenously set the price of only one thing, say, basic labour, as part of a Job Guarantee scheme and allowed the market system to adjust relative prices it could avoid any *major* administrative hurdles and disruption as well as gaining the benefits of full employment and price stability.

analysing real outcomes such as output and employment and stress how an understanding of the monetary system is crucial when considering the determination of these real variables in a monetary production economy. From this perspective, it seems reasonable to relate Marx to Kalecki (as shown by Cooper, 2016) and, since Kalecki's markup concept is central to MMT's analysis of the supply-side of the economy, this work also provides a bridge between Marx and MMT. However, there are some heterodox economists who are not merely ambivalent to Marx's value theory but highly critical and see it as a barrier preventing the integration of Marxist economics with other heterodox schools. Steve Keen (2004) is notable in this respect. He is highly critical of the labour theory of value and considers it to have had a detrimental effect, even within Marxism itself, 'Marxist economics is far stronger once it is shorn of the labour theory of value' (Keen 2004: 298).⁶¹

Such a suggestion would, of course, be rejected outright by most, if not all, Marxists who would regard the labour theory of value as a foundational element in their economics. They view capitalism as an *essentially exploitative system*⁶² where labour is utilized by capital in order to generate profit. The labour theory of value underlies the tendency of the rate of profit to fall⁶³ which is, in turn, critical to the Marxist view of the inevitability of crises in capitalism and, ultimately, to its decline and replacement with socialism⁶⁴.

⁶¹ Advocates of the TSSI would take issue with this; they would contend that if he is referring to Marxists who, through employing a simultaneous and dualistic approach, actually have a redundant concept of value (as it can be perfectly proxied by physical terms), then it would make sense for them to ditch a redundant concept. However, advocates of the TSSI of Marx believe that such Marxists have lost the key contribution of Marx by adopting a method akin to more 'normal' economics. So, it is they who have invented and adopted a redundant concept of value, not Marx, and it is they who Keen should shore himself from. In contrast if Keen is really rejecting Marx's concept of value, and all Marx's understanding of capitalism that comes from it, including his 'most important law' and an explanation of where profit really comes from, then Keen is rejecting Marx full-stop, and hoping that by acting more like economists Marxists can be more like his economics. TSSI advocacy would lead to the view that Marx might say Keen was failing to look inside the factory to find the true nature of capitalist society, and is just being a vulgar economist.

⁶² 'Starting from the concept of embodied labour Marx explained *the exploitation in capitalism of the direct producers* through both the relations of production and the appropriation of the surplus by the class which purchased their labour power.' (Harcourt and Kerr 2006: 166, emphasis added)

⁶³ Marx held that as capitalist production develops, capitalists tend to adopt more productive, labour-saving technologies; that is they turn increasingly to methods of production that replace workers with machines. On the basis of this tendency, as well as his theory that value is determined by labour-time and his conclusion that the general price and value rates of profit are equal, he deduced the law of the tendential fall in the rate of profit (LTFRP) (Marx 1991, part 3). The law is that productivity increases under capitalism produce a tendency for the general rate of profit to fall.' (Kliman 2007: 28, parentheses in the original)

⁶⁴ Kliman (2012) notes that the LTFRP has been interrupted or counteracted at various times in history by the 'destruction of capital through crisis' (Marx 1989: 127 emphasis omitted). 'The destruction of capital value through crisis is a recurrent phenomenon. The restoration of profitability that this destruction brings about is a recurrent

Nell (2013) suggests there are three distinct strands of Post-Keynesianism; neo-Ricardian (or Sraffian), 'American' (or 'Financial') and Kaleckian⁶⁵. The first 'overlaps' with Marxism as it accepts the essential importance of value theory and aims to build on the value theory developed by David Ricardo and other classical economists. However, the other two Post-Keynesian groups (and MMT) do not apply value theory or perhaps do not even see the need for one (Keen, 2004).

At present, however, the various non-neo-classical [and non-Marxist] schools of thought have *no coherent theory of value as an alternative to the neo-classical school's flawed subjective theory of value*. But even though they lack the central organizing concept of a theory of value, these alternative schools of thought contain the promise of an economic theory that may actually be relevant to the analysis and management of a capitalist economy' (Keen 2004: 298, parentheses added, emphasis added).

For (non-Sraffian) Post-Keynesians there is a valid role for markets and private enterprise and, in general, they would not see the total abolition of capitalism as inevitable. Instead, they would reject the efficient markets hypotheses and advocate significant state intervention in the system to raise welfare for the population. I might argue that such as perspective on the role of markets

phenomenon as well. Because of this, the rate of profit does not have a determinate secular trend throughout the entire history of capitalism, and efforts to deduce or predict such a trend are futile. For instance, arguments that the rate of profit must trend downward in the long run, because technical progress leads to falling profit overlook the fact that profit is only one determinant in the rate of profit. *An equally important determinant of the rate of profit is the capital value that is advanced, the magnitude of which depends largely upon how much capital value has been destroyed through crisis* (Kliman 2012: 25, emphasis in the original). For Marx, crises are recurrent and unavoidable as they are caused by forces critical to the operation of the capitalist system itself. (Kliman 2012: 26-7)

Marx also notes the possibility of financial crises in capitalism, 'In a system of production where the entire interconnection of the reproduction process rests on credit, a crisis must evidently break out if credit is suddenly withdrawn and only cash payment is accepted in the form of a violent scramble for the means of payment.' (Marx 1991: 621) Although he contends that, '[i]t is evident on the other hand that, as long as a bank's credit is not undermined, it can alleviate panic...by increasing its credit money (Marx 1991: 649), he nevertheless believes that a monetary crisis created within 'this entire artificial system of forced expansion of the reproduction process cannot be cured by now allowing one bank, e.g. The Bank of England, to give all the swindlers the capital they lack in paper money and to buy all the depreciated commodities at their old nominal values' (Marx 1991: 621). For Marx, critically, in capitalism, '[a]s long as the social character of labour appears as the *monetary existence* of the commodity and hence as a *thing* outside actual production, monetary crises, independent of real crises or as an intensification of them are unavoidable' (Marx 1991: 649, emphasis in the original). Such a view has clear relevance to the global financial crisis of 2007-8 and its aftermath.

⁶⁵ The inclusion of neo-Ricardian (Sraffian) economics in the Post-Keynesian school is controversial. Some authors (notably, Bliss, 2010) disagree with its inclusion. However, the majority of 'broad church' Post-Keynesians agree that it has enough in common with the rest of Post-Keynesianism to be included (Harcourt and Kriesler, 2013). Some Post-Keynesians have also suggested that 'Kaldorian' Post-Keynesianism, 'Institutional' Post-Keynesianism and MMT are sufficiently distinct to be considered as 'strands' of Post-Keynesianism in their own right (see Lavoie, 2009).

might be described as the subjugation or ‘embedding’ of markets within society so their activity is constrained by the needs of society rather than the reverse⁶⁶

For these Post-Keynesians in general, and MMT in particular, an understanding of the ontology of money as credit, created by the state or banks is crucially important. Mellor (2015) makes the distinction between the private money circuit and the public money circuit. The former refers to the creation and destruction of money by private financial institutions in order to make a profit (and, as has been noted, has been described by Marx, the circuit theorists and characterizes the endogenous approach utilized by Post-Keynesians and MMT). The latter refers to the creation and destruction of money by the state- a process which ought to serve public purpose and is focused upon by MMT, in particular⁶⁷.

However, the hegemony of neo-liberalism⁶⁸ has resulted in a denial of this as an acceptable role for publicly-issued money. Instead, private banks are given the only legitimate right to create money; the state’s role becomes passive. The public sector, usually represented by the action of the central bank (whether it is notionally described as ‘independent’ or not) is there to provide a back stop for the private creation of money. From a Post-Keynesian and MMT perspective, the

⁶⁶ Such a general view might be described as ‘Polanyian’. The general antithesis of Post-Keynesians towards the idea of efficient markets and, latterly, the whole neo-liberal hegemony leads to their preference for the subjugation of markets to the requirements of society. This kind of ‘socialism’, I would contend, characterises much of Post-Keynesian thought. ‘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: 242).

⁶⁷ It is important to firmly contradict a criticism commonly levelled at MMT (especially by those who seek to dismiss it and accuse it wrongly of being one-dimensional), namely that it supposedly ignores the private money circuit. Nothing could be further from the truth. *MMT provides a detailed analysis and rich insights into both the private and public monetary circuits and a scholarly and measured comparison of the distinctions between the two* (Wray 1998; Mosler 2012).

⁶⁸ Neoliberalism has been defined in many ways, however, I would argue that Harvey (2005) produces an excellent summary; “Neoliberalism is in the first instance a theory of political economic practices that that human well-being can best be advanced by liberating individual entrepreneurial freedoms and skills within an institutional framework characterized by strong private property rights, free markets and free trade. The role of the state is to create and preserve an institutional framework appropriate to such practices. The state has to guarantee, for example, the quality and integrity of money. It must also set up those military, defence, police and legal structures and functions required to secure private property rights and to guarantee, by force if need be, the proper functioning of markets. Furthermore, if markets do not exist (in areas such as land, water, education, health care, social security, or environmental pollution) then they must be created, by state action if necessary. But beyond these tasks the state should not venture. State interventions in markets (once created) must be kept to a bare minimum because, according to the theory, the state cannot possibly possess enough information to second-guess market signals (prices) and because powerful interest groups will inevitably distort and bias state interventions (particularly in democracies) for their own benefit” (Harvey 2005:2).

ideological view that public sector creation of money is inefficient and potentially inflationary and only private sector money creation is legitimate and efficient needs to be overturned. In practice, banks should be closely regulated and 'casino' behaviour curtailed. For the advocates of MMT, the state needs to reclaim the right to produce money to pursue public purpose rather than allowing money creation to be privatized.

I might, at least tentatively, suggest that Mellor comes close to a summary of the Post-Keynesian (and MMT) view. 'There is no compromise between economic democracy and the market. Priority must go to the social and public economy (social and public provisioning), with the remaining commercial market in a secondary role. The democratisation of money is not about bringing commercial values into public provisioning. Quite the opposite: democratically determined public values would drive the commercial sector' (Mellor, 2015: 181).

4. Conclusion

I argue that MMT produces deep insights and forms a foundation for the development of meaningful economic knowledge and it deserves the status of a stand-alone school within economics (arguably within the Post-Keynesian tradition). Nevertheless, I consider that both antecedents for MMT and links between MMT and other approaches (although complex and controversial) can be specified.

I consider that – in common with Post-Keynesianism- MMT is consistent with the endogenous money approach and supports (with nuances for some advocates) the accommodationist view in the debate between accommodationists and structuralists. Commonality with the work Keynes and Kalecki is strong – both Keynes and Kalecki reject the loanable funds theory of interest rate determination and the contention that saving is a *source* of investment; positions which are very much in accord with MMT. Kalecki also argues that bigger government deficits do not lead to raised interest rates and inflation will not be the result of government deficits when spare capacity exists – core arguments from an MMT perspective. Sawyer (2007) notes that in the Kaleckian system, in common with that expressed by advocates of MMT (Mosler 2012), inflation can have multiple causes. Kalecki is skeptical about the potential for the co-existence of full employment and capitalism but Cooper (2012) notes that he allows for the future possibility, given a significant institutional change from his time of writing. Cooper further argues that the shift to floating exchange rates (and the possible adoption of a Job Guarantee) might constitute just such a development.

Finding compatibility between Marx and MMT is complex but, I would argue, nevertheless possible (Ferguson 2017; Cooper 2010, 2013, 2016). The difficulty is exacerbated by the existence of different interpretations of Marx. From the perspective of the TSSI, Cooper's approach – although thought-provoking – mischaracterises, in particular, the deep significance of time in Marx's work and fails to identify the true nature of such compatibility (Potts and Armstrong forthcoming). Marx viewed the capitalist system as inherently exploitative and looked within the capitalist productive process to find the real origin of profits; for Marx the ultimate source of profit lies at a deeper level of abstraction than the Post Keynesian approach which, from a TSSI perspective, only provides an explanation of the financial flows within a self-contained period (Potts and Armstrong forthcoming).

However, I would argue that MMT can add to the insights of Marx. Marx theorised about a capitalism characterised by exchange rate systems based upon metallic standards and nations with relatively small state sectors going through periodic booms and slumps. For Marx, recurring crises of capitalism generate a tendency for the profit rate to decline. The decline in demand which characterises the downturn leads to a cheapening of the price of capital, in turn, causing a rise in the future profit rate. This allows capitalists as a whole to escape from the decline in their profit rate (although some may not survive the slump).

However, in a modern context, many countries have their own fiat currencies, operate under floating exchange rates and have much larger government sectors. State action can affect, or distort, the pattern of accumulation, especially if governments utilise their status as a monopoly issuer of the currency to maintain full employment (Mosler 2012; Armstrong 2018). The introduction of a Job Guarantee or Employer of Last Resort Policy (Wray 1998:122-54; Mitchell 2013; Mosler and Silipo 2016) enables a government to reduce unemployment to zero and combining this policy with the use of active fiscal policy can lead to the effect of slumps being significantly ameliorated. Thus, the slump required to drive the reduction in the price of capital may be absent (or at very least reduced in impact) decreasing the potential for the profit rate to rebound. In such circumstances, the state's action, with respect to the operation of the financial system, may well lead to the progressive increase in the size of the state sector (Potts and Armstrong forthcoming).

Appendix 8: References

- Arestis, P. and Sawyer, M. (2003), 'Reinstating Fiscal Policy', *Journal of Post Keynesian Economics* 26 p. 125-48
- Armstrong, P. (2018), 'Keynes's view of deficits and functional finance; a Modern Monetary Theory perspective' (2018), *International Review of Applied Economics*
<https://www.tandfonline.com/doi/abs/10.1080/02692171.2018.1475139>.
- Bliss, C. (2010), 'The Cambridge Post-Keynesians: an Outsider's Insider View', *History of Political Economy* 42 p. 631-52
- Borio, C., Cambacorta, L. and Hofmann, B. (2015), 'The Influence of Monetary Policy on Bank Profitability', *Bank of International Settlements*, Working Paper No. 514, Oct. 2015.
<http://www.bis.org/publ/work514.pdf>
- Cooper, P. (2010), 'Value of the Currency,' <http://heteconomist.com/value-of-the-currency-2/>
- Cooper, P. (2011), 'Kalecki in Relation to MMT,' <http://heteconomist.com/kalecki-in-relation-to-mmt/>
- Cooper, P. (2012), 'Kalecki, the Job Guarantee and Future Society,'
<http://heteconomist.com/kalecki-the-job-guarantee-and-future-society/>
- Cooper, P. (2013), 'Melting some Marx into MMT,' <http://heteconomist.com/melting-some-marx-into-mmt/>
- Cooper, P. (2016), 'The Monetary Circuit & Compatibility of Marx, Kalecki and Keynesian Macro.,' <http://heteconomist.com/the-monetary-circuit-compatibility-of-marx-kalecki-and-keynesian-macro/>
- Covas, F. B., Rezende, M. and Vojtech. C. M. (2015), 'Why are Net Margins of Large Banks so Compressed?' *FEDS notes*, 5, October, 2015
<http://www.federalreserve.gov/econresdata/notes/feds-notes/2015/why-are-net-interest-margins-of-large-banks-so-compressed-20151005.html>
- Federal Reserve Bank of St. Louis Economic Data.
<https://research.stlouisfed.org/fred2/series/USNIM>
- Ferguson, S. (2017), 'Some Remarks on MMT and Marxism in the Light of David Harvey's Marx, Capital, and the Madness of Economic Reason"', *Radical Political Economy*,
<https://urpe.wordpress.com/2017/07/04/some-remarks-on-mmt-marxism-in-light-of-david-harveys-marx-capital-and-the-madness-of-economic-reason/>
- Fine, B. (2016), *Microeconomics: A Critical Companion*, London: Pluto Press

- Forder, J. (2013), 'Macroeconomics and the 'L'-Shaped Aggregate Supply Curve' in *The Oxford Handbook of Post-Keynesian Economics*, volume 2, Harcourt, G. C. and Kriesler, P. (eds.) p. 245-264
- Freeman, A. (1996), 'Price, Value and Profit: A Continuous, General, Treatment', *MPRA Paper 1290*, University Library of Munich
- Harcourt, G. C. and Kerr, P. (2006), 'Karl Marx 1818-1883', in *Fifty Years a Keynesian and Other Essays* Basingstoke: Palgrave
- Harcourt, G. C. and Kriesler, P. eds. (2013), *The Oxford Handbook of Post Keynesian Economics*, Two Volumes (Volume 1; Theory and Origins, Volume 2; Critiques and Methodology) Oxford: Oxford University Press
- Harvey, D. (2005), *A Brief History of Neoliberalism*, Oxford: Oxford University Press
- Kaldor, N. (1956) 'Alternative Theories of Distribution' *Review of Economic Studies* 23: 83-100
- Kalecki, M. (1943) 'The Political Aspects of Full Employment' *Political Quarterly*
<http://delong.typepad.com/kalecki43.pdf>
- Kalecki, M. (1944) 'Three Ways to Full Employment' In *Economics of Full Employment* Oxford: Oxford Institute of Statistics p. 39-125
- Kalecki, M. (1969), *Theory of Economic Dynamics* New York: Augustus Kelley
- Kalecki, M. (1971), *Selected Essays on the Dynamics of the Capitalist Economy* Cambridge: Cambridge University Press
- Keen, S. (2004), *Debunking Economics* London: Zed Books
- Keynes, J. M. (1930), *A Treatise on Money*, 2 vols. New York: Harcourt and Brace.
- Keynes, J. M. (1936), *The General Theory of Money, Interest and Employment*. New York: Harcourt and Brace
- Keynes, J. M. (2012), *Collected Writings Volume VI*, Cambridge: Cambridge University Press.
- Kliman,A. (2007), *Reclaiming Marx's "Capital"*, Plymouth: Lexington Books
- Kliman,A. (2012), *The Failure of Capitalist Production*, New York: Palgrave Macmillan
- Kliman, A. and McGone, T. (1988), 'The Transformation Non-problem and the Non-transformation problem', *Capital and Class*, Summer, 56-83.
- Kliman, A. and McGone, T. (1999), 'A Temporal Single System Interpretation of Marx's value Theory', *Review of Political Economy*, vol. 11, issue 1, 33-59.
- Lee, F. (1998), *Post-Keynesian Price Theory*, Cambridge: Cambridge University Press
- Lee, F. (2009), *A History of Heterodox Economics*, Abingdon: Routledge
- Marx, K. (1973), *Grundrisse: Foundations of the Critique of Political Economy*, London: Penguin

Marx, K. (1989), *Karl Marx, Friedrich Engels, Collected Works Volume 32*, New York: International Publishers

Marx, K. (2013/1867) *Capital* (Volume I) Ware, Hertfordshire: Wordsworth

Marx, K. (2013/1885), *Capital* (Volume II) Ware, Hertfordshire: Wordsworth

Marx, K. (1991/1894), *Capital* (Volume III) London: Penguin

Marx, K. (1969/1863), *Theories of Surplus Value (Part 2)* London: Lawrence and Wishart

Mellor, M. (2015), *Debt or Democracy, Public Money for Sustainability and Social Justice*, London: Pluto Press.

Mitchell, W and Muysken, J. (2008), *Full Employment Abandoned: Shifting Sands and Policy Failures*. Cheltenham: Edward Elgar

Mitchell, W. (2010a), 'Michal Kalecki: The Political Aspects of Full employment'
<http://bilbo.economicoutlook.net/blog/?p=11127>

Mitchell, W. (2010b), 'Budget deficits do not cause higher interest rates',
<http://bilbo.economicoutlook.net/blog/?p=11627>

Mitchell, W. (2011), 'We Need to Read Karl Marx',
<http://bilbo.economicoutlook.net/blog/?p=15854>

Mitchell, W. (2013), 'What is a Job Guarantee?'
<http://bilbo.economicoutlook.net/blog/?p=23678>

Mitchell, W. (2015a), 'The Roots of MMT do not lie in Keynes.'
<http://bilbo.economicoutlook.net/blog/?p=31681>

Mitchell, W. (2015b), 'Why Banks are Pushing the US Central Bank to Increase Interest Rates'
<http://bilbo.economicoutlook.net/blog/?p=32029>

Mitchell, W., Wray, L. and Watts, M. (2019), *Macroeconomics*, London: Red Globe Press

Moseley, F. (2016), 'Marx's Concept of Prices of Production: Long Run Centre of Gravity Prices'
www.mtholyoke.edu/~fmoseley/lrcgpric.html

Mosler, W (2010), *The Seven Deadly Innocent Frauds of Economic Policy*, US Virgin Islands: Valance.

Mosler, W (2012) *Soft Currency Economics II*, US Virgin Islands: Valance

Mosler, W (2014) 'Reader's [Armstrong, Phil's] note to Palley', Available from
<http://moslereconomics.com/> Feb. 14.

Mosler, W. and Silipo, D. (2016), 'Maximising Price Stability in a Monetary Economy.'" *Levy Economics Institute*, Working Paper No. 864, April.

Mosler, M. and Armstrong, P. (2019), 'A Discussion of Central Bank Operations and Interest Rate Policy', February 24, 2019

<https://qimms.org.uk/2019/02/24/central-bank-operations-interest-rate-policy/>.

Mosler, M. and Forstater, M. (1999), 'A General Framework for the Analysis of Currencies and Commodities,' in Paul Davidson and Jan Kregel (eds.) *Full Employment and Price Stability in a Global Economy*, Northampton, MA: Edward Elgar, 166-77.

Nell, E. (2013) 'Reinventing Macroeconomics: What are the Questions?' in *The Oxford Handbook of Post-Keynesian Economics* volume 1, Harcourt, G. C. and Kriesler, P. (eds.) p. 362-389

Polanyi, K. (1957/1944), *The Great Transformation*, Boston MA: The Beacon Press.

Pollin, R. (1991), 'Two Theories of Money Supply Endogeneity: some Empirical Evidence,' *Journal of Post Keynesian Economics*, Spring, vol.13, no. 3, p. 366-396.

Potts, N. (2007), 'Some Preliminary Thoughts on Knowledge-based Production: 49 Seconds on Mustafar', *Critique: Journal of Socialist Theory*, Vol. 35, No. 3, pp.357-373.

Potts, N. (2016), 'Two Temporal Single System Interpretation of Marx Calculations of the MELT', *Marxism 21*, Vol. 13, No. 2, pp.94-122.

Potts, N. (2017a), 'TSSI Experiments in Circulation', International Working Group on Value Theory Working Paper, posted 8th of November, <http://copejournal.com/tssi-experiments-in-circulation-by-nick-potts/>

Potts, N. (2017b), 'Exploring Marx's Value Theory in Our Inflationary World: Why It Is Not Moseley's Way Or The Highway!' *Marxism 21*, Vol. 14, No. 2, summer, pp.198-232.

Potts, N. and Armstrong, P. (forthcoming), 'What Marx and Kalecki/Post-Keynesians do not share, and why this is not a barrier to their learning from each other to their mutual advantage', in *Contemporary Issues in Heterodox Economics*, A. Hermann and S. Mouatt (eds.), Abingdon: Routledge.

Ricardo, D. (1817/1846), 'The Principles of Political Economy and Taxation.' In McCulloch, J.R. *The Works of David Ricardo, Esq., M.P. with a Notice of the Life and Writings of the Author*. London: John Murray

Robinson, J. (1971), *Economic Heresies*, New York: Basic Books

Salter, W. E.G. (1960), *Productivity and Technical Change*, Cambridge: Cambridge University Press

Sawyer, M. (2007), 'Seeking to Reformulate Macroeconomic Policies'
https://www.boeckler.de/pdf/v_2007_10_26_Sawyer.pdf

Wray, L. R. (1990), *Money and Credit in Capitalist Economies*, Aldershot: Edward Elgar

Wray, L. R. (1998), *Understanding Modern Money*, Cheltenham: Edward Elgar.

Wray, L. R. (2007), 'Endogenous Money: Structuralist and Horizontalist.' *Levy Economics Institute*, Working Paper No. 512, Sept.

Wray, L. R. (2012), *Modern Monetary Theory*, Basingstoke: Palgrave Macmillan

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