An MMT perspective on macroeconomic policy space

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1. Introduction

Following from the material set out by Wray in this issue, this essay argues that Modern Monetary Theory (MMT) stands in opposition to politically imposed rules. Specifically: debt ceilings, prohibition of direct sales of public sector debt to a nation's central bank and the necessity for a national treasury to maintain a positive overnight balance at its own central bank. These may have had a function under former situations but are not necessary today, given the existence of and scope for a "new operational reality".

Amongst other things, MMT rejects the mainstream concept of a government budget constraint (GBC) (Mitchell, 2011). The GBC conceptualises the government as a currency-user, which might finance its spending by taxation, borrowing (debt issuance) and "printing money"[1]. According to mainstream thinking, each of these methods carries problems: taxation reduces non-government sector spending power and can, allegedly at least, reduce incentives to work; "excessive" borrowing leads to higher long term interest rates, in turn, generating "crowding out" effects. Higher interest rates will lead to lower private sector investment (Armstrong, 2015, pp. 18-19) and, should the state turn to "money printing" to finance a deficit, then the inevitable result is inflation.

MMT instead provides the key insight that the government must spend (or lend) *before* it can tax (or borrow). Taxes do not *fund* spending in a functional sense and merely represent the amount of previously-issued state money which has been destroyed. MMT recognises that although a government with its own sovereign currency under floating exchange rates faces no financial or revenue constraints it does face real resource constraints. MMT contends that it is access to real resources that determines - or limits - what the state is able to provide for its citizens. If the state spends on goods and services it draws resources to a particular use and these resources are therefore not available for other purposes. At full employment an opportunity cost exists. MMT is often mischaracterised as denying the existence of constraints. This is not the case- MMT stresses that the quantity and quality of real resources available (together with what the country can import) determine the potential living standards for its population.

Davis (1971, p. 1) argues that "[i]nteresting theories deny certain assumptions of their audience, while non-interesting theories affirm certain assumptions of their audience" and stresses that "the defining characteristic of a theory that some audience considers interesting is that it stands out in their attention in contrast to the web of routinely taken-for-granted propositions that make up the theoretical structure of their everyday lives" (Davis, 1971, p. 2). The great majority of economists, politicians and interested members of the public conceptualise the government as a currency-user and implicitly assume that the state faces a budget constraint (in the manner of a household). MMT challenges this assumption and conceptualises the state as a currency-issuer which faces no financial constraints in its own

[1] If the state buys goods and services by direct issue of currency (overt money financing) this is often described in press and even mainstream economic literature as "printing money" even though no money is actually printed. From a heterodox perspective, describing the issue of money in such a crass fashion is seen as a deliberate attempt to stir up – usually unfounded – fears of inflation.

currency and instead faces only real constraints. In this way, MMT captures the imagination and generates a level of interest in open-minded listeners usually absent from other schools which merely confirm or elaborate upon the assumptions which may already be established in minds of the audience. Whilst MMT has antecedents it also addresses a "new operational reality" and I begin with this.

2. MMT and the new operational reality

From an MMT perspective, under a floating exchange rate, the state always has the power to choose the interest rate it pays when it wishes to borrow, regardless of the duration of the loan. Since the central bank is the monopoly supplier of net balances to the domestic monetary system (more colloquially, "on its spread sheet") it necessarily has the option to act as a "price setter" (Mosler, 2012). Despite the realisation of the need to set the overnight rate, determination of longer term rates has been "left to the market." That such an approach is a choice not an operational necessity, as it once was, has not been understood. Failure to grasp the nature of the new operational reality, firstly by economists and, secondly, by politicians and policy-makers, has meant the retention of the erroneous view that flexible market-driven, long term interest rates have the ability to coordinate saving and borrowing. Such a situation has had serious consequences for the conduct of both monetary and fiscal policy.

In the current situation in the UK and US, for example, the state could use its position as monopoly issuer of the currency to control the whole spectrum of risk-free rates; or to put it another way it could determine the shape of the yield curve. If a policy of exerting control over long term risk-free rates was decided upon then it could be put into practice by the central bank agreeing to buy unlimited quantities of government debt at a price consistent with its interest rate target at each maturity level. This would result, potentially, in significant central bank balance sheet expansion. Alternatively, the Treasury could offer securities that yield no more than the government's target for the term structure of risk-free rates (Mosler, 2012).

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

If the long-term rate was set too low, then borrowing would be higher than its "optimum" level and would not be supported by saving. The result would be "malinvestments";[2] a credit boom

[2] "Malinvestments" or badly allocated business investments are an important element of Austrian business cycle theory. Excessive credit expansion, facilitated by loose central bank policy- setting the interest rate below the optimal equilibrium market rate which coordinates the preferences of savers and borrowers- leads to an impairment of the critical ability of the price mechanism to allocate resources efficiently, in turn generating over-investment, an unsustainable boom and a necessary, corrective

and, inevitably, a crash. The mainstream view of the nature of banking lends weight to this approach.

Mainstream theory treats banks as pure intermediaries (Jakob and Kumhof, 2015) who acquire money from a source or sources and then lend the money to others. Banking however, is a fundamentally different process. MMT is founded on the endogenous approach to money and thus recognises that banks do not take deposits and then lend them out. Indeed banks may make loans without the possession of prior deposits (or reserves). Banks take a position in assets by granting credit to borrowers and at the same time accept liabilities upon themselves. The granting of a loan by a bank is fundamentally a balance sheet expansion exercise. A bank customer who is granted a loan gains a bank deposit (a liability to the bank) and at the same time the bank acquires an asset – the loan. Assuming the loan is spent and the receiver of the credit holds an account in a different bank, the lending bank will find that initially its balance sheet shrinks i. e. it loses the deposit and reserves. However, once the loan is repaid (with interest), the reserves are replenished (with additional reserves equivalent to the interest) on the asset side. On its liability side the interest payment has boosted the bank's net worth. Provided the borrower repays the debt in full the bank makes a profit on the transaction. It is clear from this mechanism that "loans create deposits"[3] not the other way round (Wray 2012).

If the bank needs reserves to allow settlement it can source them on the interbank market which might be the case if the proceeds of the loan are to be moved to another bank. However, second, on settlement day, if the bank is short of reserves the central bank automatically grants (or "accommodates") an overdraft as failure to do so would be an error of accounting. Thus, when the cheque for the proceeds is deposited in another bank the reserve account of the bank granting the loan is debited. Should that result in a reserve account overdraft a loan from the central bank is recorded.

Consistent with the erroneous mainstream view of money, banking and interest rate determination is the "crowding out" hypothesis.[4] This hypothesis suggests the higher government borrowing increases demand for loanable funds and, as would be the case with any other "commodity", its price- or interest rate- would rise in turn leading to reduced private sector borrowing. Given the mainstream preference for private investment over public

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contraction. "The popularity of inflation and credit expansion, the ultimate source of the repeated attempts to render people prosperous by credit expansion, and thus the cause of the cyclical fluctuations of business, manifests itself clearly in the customary terminology. The boom is called good business, prosperity, and upswing. Its unavoidable aftermath, the readjustment of conditions to the real data of the market, is called crisis, slump, bad business, depression. People rebel against the insight that the disturbing element is to be seen in the malinvestment and the overconsumption of the boom period and that such an artificially induced boom is doomed. They are looking for the philosophers' stone to make it last" (von Mises, 1966).

[3] However, the position is not as simple as this. Goodhart (2017) notes that banks provide a service to customers allowing them access to credit, so banks do not create the money themselves; in reality they create the conditions which allow customers to do so, "in dealing with the private sector, the commercial banking sector acts as a service industry, setting out the terms and conditions on which it will provide its financial services, notably including loan and mortgage provision. Given these, its private sector clients then make most of the running, determining the timing and amount of bank credit provision. The key variables are the banks' choice of such terms and conditions and the private sector's appetite for borrowing (on such terms) from the banks. Seen in this light, the claim that bank credit is the genesis of money creation without any mention of the private sector's key role in the process amounts to a misrepresentation" (Goodhart, 2017, p. 13, parentheses in the original).

[4] "Crowding out" usually refers to a situation where increased government borrowing raises interest rates leading to reduced private sector investment, in turn, dampening (or even eliminating) any positive effect upon on income and output (Karlson and Spencer, 1975; Wilson, 1979).

investment such a situation should be avoided as a matter of urgency. However, in the current operational reality, "borrowing" by the state is not operationally required and even if the state decided to borrow, there would not be any straightforward correlation between increased deficits and rising long-term rates.[5] Under the gold standard, governments were constrained in their spending by their ability to tax and borrow. If a fiscal deficit existed there would be untaxed spending in the system which could be converted into gold at a fixed rate. In this case the state would need to offer "market-determined" rates to induce holders to buy non-convertible government debt rather than convert into gold (Mosler, 2012).

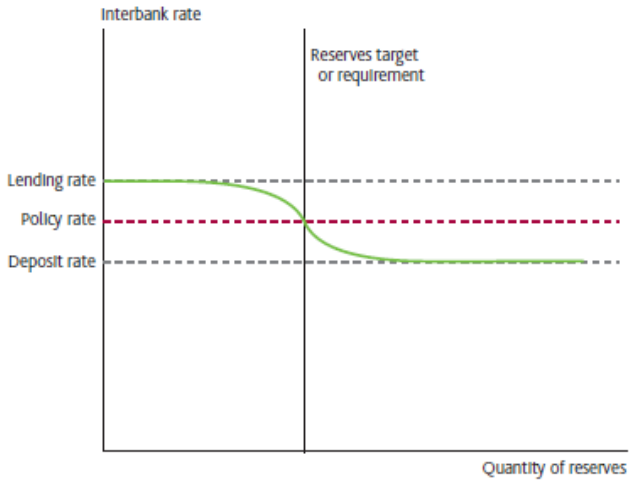
The new operational reality is different. The government spends first, and creates reserves, *ex nihilo*. It is never revenue-constrained as a currency-user might be. The "borrowing" operation which removes the reserves is voluntary in an operational sense. *The state has no need to borrow*. (Mosler, 2012) It could allow any untaxed spending to remain in the system. The problem with this is that such a policy would result in the overnight rate falling to zero (should no action be taken). Banks cannot reduce the aggregate level of reserves in the system. Excess reserves would mean that banks would try to lend them on the overnight interbank market driving the interest to zero. In operational terms sales of debt are not a borrowing activity but are required to maintain a positive short term interest rate (Mosler, 2012).

Most central banks utilise a variant of the corridor system to enact their monetary policy (Mosler, 2012, pp. 47-57; Clews et al., 2010, pp. 292-300; Lavoie, 2010, pp. 3-17). The "standard" model, exemplified in the Bank of England paper (Clews et al., 2010), takes as its starting point the expected behaviour of individual profit-maximising banks. From this perspective, it is possible to derive the expected shape of an individual bank's demand for reserves and, by implication, the demand curve for reserves as whole. The green line shows the demand curve for bank reserves on the interbank market. It is horizontal at the lending rate, on the assumption that profit-maximising banks will not borrow from each other on worse terms than they can obtain from the central bank. The downward sloping section reflects that as the interest rate falls the opportunity cost of holding reserves rather than lending them falls, increasing demand for reserves.[6] The final horizontal section reflects the fact that banks will not lend reserves to each other below the discount rate as this will not be consistent with profit-maximising behaviour.

Given the shape of the demand curve, the central bank can adjust the aggregate amount of reserves using open market operations so as to hit its target rate. The lending rate is the rate at which banks can borrow reserves from the central bank (discount window) and the deposit rate is the rate paid on reserves deposited at the central bank – referred to as "standing facilities" by The Bank of England. The policy rate lies between the deposit rate (if present) and the lending rate and these the two administered rates, the lending rate and deposit rate (if present) give a ceiling and floor to the overnight rate and limit the potential divergence of the overnight rate from the policy rate. International variation exists in the exact implementation of corridor systems but the principle behind the policy remains the same.

[5] Armstrong (2019).
[6] "The higher the market rate of interest, the higher is the opportunity cost of holding reserves and hence the lower will be the demand. As rates fall, the opportunity costs fall and the demand for reserves increases. But in all cases, banks will only seek to hold (in aggregate) the levels consistent with their requirements" (Mitchell, 2010).

Figure 1 Stylised demand for reserves in the corridor system



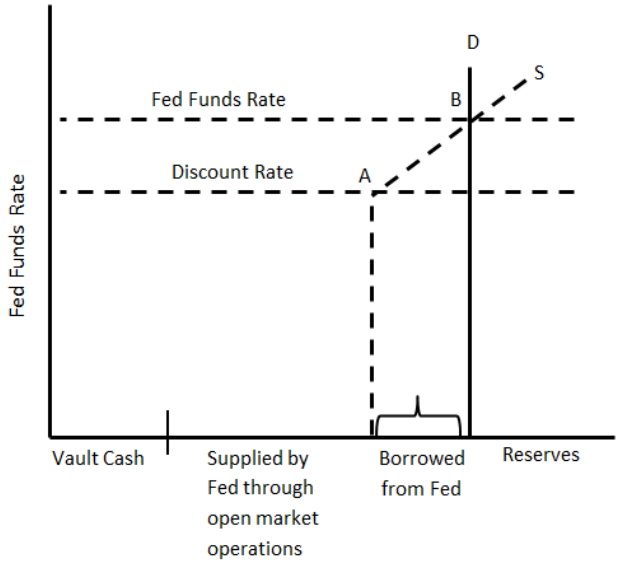
Source: The Bank of England, 2010, *QB* Q4, p. 295.

In principle the interest rate will remain inside the corridor as the lending rate and deposit rate place upper and lower limits on rate movements. The standard conceptualisation is that of the central bank using open market operations to adjust the level of reserves in the system enabling it to hit its policy rate. The system relies on an orderly functioning interbank market which facilitates an efficient distribution of reserves between banks.

Mosler (2012) develops "a 'real world' system-wide macro analysis" (Mosler and Armstrong, 2019, p. 11)[7] which differs methodologically from the "standard" corridor model. Mosler (2012) notes that bank reserves might be in the form of vault cash, be supplied by the Fed's open market operations or borrowed from the Fed. If the banks are left collectively short of reserves by the Fed's open market operations they must access the required reserves from the discount window. Mosler's (2012) analysis recognises the administrative costs and possible stigma attached to borrowing from the discount window (as it may be associated with financial weakness). In this case, the fed funds rate might well exceed the lending or discount rate. However, as banks collectively bid up the fed funds rate the spread between the fed funds rate and the discount rate widens and eventually banks must borrow from the central bank. This shown on the diagram below; as the market rate exceeds the discount rate (beyond point A) banks demand reserves from the discount window. The Fed acts passively and supply adjusts to demand, eventually satisfying all demand (at market equilibrium shown by point B) – a rate above the discount rate. Ultimately, however, the banks' reliance upon discount window borrowing is always under the control of the Fed; Fed provision of additional reserves via open market operations will reduce the banks' need to borrow from the discount window. Conversely, if the Fed provides fewer reserves using open market operations the spread between the fed funds rate and the discount rate will widen, requiring banks to rely more heavily on discount window borrowing.

[7] See also Mosler and Armstrong (2019) for a detailed development of this analysis.

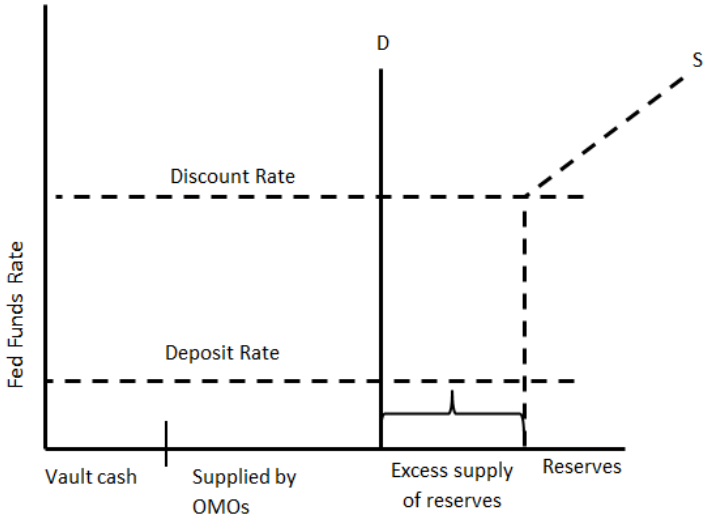
Figure 2 Supply and demand curves for reserves (system-wide shortage)



Source: Mosler, 2012, p. 55.

The unprecedented increase in the level of bank reserves supplied by the Fed in the aftermath of the GFC generated, as matter of policy, a systemic excess supply of reserves.[8] The excess supply (S) over demand (D) would have driven the fed funds rate to zero, had not a "floor rate" been introduced by the payment of interest on reserves held by banks at the Fed (Mosler and Armstrong 2019) – shown by the deposit rate on the diagram.

Figure 3 Supply and demand curves for reserves (system-wide excess supply)



Source: Mosler, 2012, p. 56.

[8] Keister and McAndrews (2009); Mosler and Armstrong (2019).

Consistent with this approach, Mosler and Armstrong (2019, pp. 6-7) disagree with the argument the central bank (CB) alters the supply of reserves in order to enact its interest rate policy and instead contend that "close inspection reveals that interest rate policy remains best understood as a matter of setting rates and not quantities". They argue that

> "if there is a shortage of reserves in the banking system, for any individual bank that shortage is accounted for as an overdraft loan (discount window loan) from the CB. That is, in the first instance, a bank's shortfall in its CB reserve account is accounted for as a loan from the CB. And if the CB sets the rate for these loans at the policy rate, there is no need for the further action (such as 'adding reserves' via repurchase agreements or outright purchases of Treasury Securities) suggested in the standard model. It is only when the CB adds what is called a 'penalty rate' to this type of borrowing, or if a stigma[9] is associated with loans from the CB, that banks then attempt to borrow in the interbank market in order to replace higher priced loans from the CB with lower priced loans from other banks. As a point of logic, the bank would be willing to pay more than the policy rate, but less than the discount rate plus the amount by which it values any stigma. In the US case, for example, when the Fed observes the fed funds rate trading higher than its policy rate target, it then takes action to make reserves available *at a lower price* to bring the fed funds rate down to its policy rate.
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> In the case of a reserve excess, the CB can simply pay interest on reserves, which again is about setting the interest rate rather than the quantity of reserves. Alternatively, the CB can offer securities for sale, which support rates as determined by the interest rate which is implicit in the terms offered by the securities being sold."[10]

Perhaps, of even greater significance is MMT's denial of the whole idea that monetary policy is ever effective in the way mainstream theory suggests (Mosler and Silipo, 2016; Mosler and Armstrong, 2019; Armstrong, 2019). 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 degree 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

[9] It may be that discount window borrowing might give the impression of financial weakness and so would be avoided if possible.
[10] In practice, "lag accounting" and reserve averaging regulations work to both destabilize and to stabilize interbank rates, see Mosler (2012, pp. 57-62).

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 zero and near zero 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 (Mosler and Armstrong, 2019; Armstrong, 2019).

Mosler and Armstrong (2019, p. 17) summarise the MMT view that under floating exchange rates, CBs of nations with their own sovereign currencies can always set the risk-free interest rate of any duration. The rate of interest charged by banks is best conceptualised as merely this risk-free rate plus a risk premium.

> "Central bankers have… acknowledged the operational necessity of targeting interest rates rather than money supply growth.[11] However, we would argue that the process of deepening understanding is not yet complete and further requires the recognition that, as the monopoly issuer of reserves in a floating exchange rate regime, supply is demand determined with CBs controlling price. That is, CB action under a floating exchange rate regime is best understood as that of a price-setter of the reserves demanded. We argue in favour of a *reversed causality vis-à-vis* orthodox analysis which would have applicability in a fixed exchange rate regime, which is in fact reserve constrained by design… We also contend that its role as monopoly supplier also gives the CB the ability to control the full spectrum of long term risk-free rates and that the extent of market influence on the determination of the shape of the yield curve is always, ultimately, under the control of the CB."

3. The Nature of self-imposed constraints

The insights of MMT allow us to see that under the new monetary operational reality policy space is much expanded. The government can now act as a currency issuer and pursue public purpose. Functional finance could now be the order of the day. For most nations, issuing their own fiat currency under floating exchange rates, the situation is different to the days of fixed exchange rates. Since the gold window closed a different reality exists – one which, potentially at least, provides governments with significantly more scope to enact policies which benefit society (Mosler 2012). However, from an MMT perspective, policy arrangements that sprang up under the old regimes are no longer necessary or beneficial. They can largely be considered as self-imposed constraints on the system which are out-of-date, ideologically biased and unnecessary. However, mainstream economists have not grasped this situation – or perhaps they cannot allow themselves to- because of the vice-like grip of their ethics and "traditional" training has on them. This characteristic of orthodox economics underpins the political hegemony of neoliberalism; governments operate under different rules but still continue to act *as if* they were currency users.

[11] See McLeay, Radia and Thomas (2014a; 2014b).

Notable examples of outdated "blockages" include the imposition of debt ceilings, prohibition of direct sales of government debt to the central bank and the need for government treasury departments to hold positive balances at their own central banks (Wray, 2012; Mosler, 2012) They are no longer required to mitigate the effects of the self-regulating market, yet they are retained. For those who cannot recognise the new core reality and remain embedded in the old one they remain essential (or at least are stated as being so).

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

A case in point would be the so-called "debt ceiling" in the USA. Under conditions of the gold standard a debt ceiling may have had some operational meaning since an ever-increasing level of untaxed spending would increase the risk of conversion into gold and a loss of reserves. Higher and higher interest rates may, in principle, have been required to prevent a loss of gold. In a modern context, with no convertibility, the need for a debt ceiling has gone. The level of net spending by the government should be set at the level required to maintain full employment (Wray, 2012). Debt ceilings, however, have great appeal to "libertarian" groups and therefore remain firmly politically entrenched. They represent in essence, from the point of view of MMT, a limit on the government's willingness, not ability, to net spend.

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

However, in the pre-GFC days, when the Fed managed the level of reserves in the banking system in order to meet its federal funds rate target, monetisation was impossible in practice.

> "Once the Federal Reserve Board of Governors sets a fed funds rate, the Fed's portfolio of government securities changes only because of the transactions that are required to support the fed funds rate. The Fed's lack of control over the quantity of reserves underscores the impossibility of debt monetization. The Fed is unable to monetize the federal debt by purchasing government securities at will because to do so would cause the funds rate to fall to zero. If the Fed purchased securities directly from the Treasury and the Treasury then spent the money, its expenditures would be excess reserves in the banking system. The Fed would be forced to sell an equal amount of

> securities to support the fed funds target rate. The Fed would only act as an intermediary. The Fed would be buying securities from the Treasury and selling them to the public. No monetization would occur" (Mosler, 2012, pp. 26-27).

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

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

Another self-imposed constraint is the requirement for Treasuries to hold a positive balance at their own central bank before spending – for example, in the USA (Wray, 2012, p. 105). In principle such a rule means Treasuries are forbidden from running an overdraft at their own central banks and this is a reflection of mistrust of government and the consequent need to retain legal "checks and balances". However, such a rule runs contrary to the logic inherent in MMT, that government spending or lending must precede taxation or state borrowing (colloquially, you can't have a "reserve drain" before a "reserve add"). In practice, meeting this requirement requires a particular sequence of transactions involving the central bank and the Treasury. This is because in order to obtain the necessary positive balance the Treasury must acquire non-government funds which it had already created itself by its own deficit spending. These non-government funds will be (more often than not) in the form of previously-issued securities, necessitating a repo transaction by the central bank. In the case of the US, the Fed would carry out a repo, buying securities from the relevant private sector financial institutions. This provides the necessary reserves for the private sector to buy the new issue of debt which is required by the Treasury in order to replenish its balance at the Fed. Once the government has acquired the positive net balance, it spends from its Treasury account and the reserves become available to allow the reverse repo transaction to occur. Once the sequence is complete the government has spent as set up in its budget and the private sector now holds more government securities than previously (Wray, 2012, pp. 105-109).Thus we have a self-imposed constraint *par excellence*, requiring financial legerdemain but in practice having no operational significance.

4. Conclusion

The neoliberal age has been characterised by the abandonment of fixed exchange rates in favour of floating rates (this is not true for all nations, of course, as some countries have retained fixed exchange rates or currency boards) allowing, in principle, countries enhanced policy space in terms of the sovereign use of monetary and fiscal policy. Governments are now able to use these demand-side policies to pursue macroeconomic policy aims without concern for the exchange rate. I might specify two reasons why, in practice, this policy space has not been fully utilised.

First, the acceptance of the need (or mainstream preference) for free capital mobility[12] has reduced this space. Nations are constrained in their use of monetary and fiscal policy by the perceived possibility that such a policy stance might lead to capital flight and speculative selling of the currency significantly undermining the value of the currency. Although this threat is almost certainly greatly overestimated in the mainstream economic literature and media (certainly for developed nations such as the US, UK and Japan), *the fear of it effectively constrains the active use of fiscal policy to pursue full employment policies and enhance domestic living standards.*[13]

Second, I would argue that mainstream economists and neo-liberal politicians have not recognised that the old operational reality has now gone (at least for countries which are not part of the euro or operating under fixed exchange rates). They have not understood or accepted that "sound money" government budgeting and "market-led" interest rates which might have been seen as necessary or even beneficial under the gold standard (and to a lesser extent under the Bretton Woods system) are out-of-date and hamper progress. They retain policies that, from an MMT perspective, restrain the ability of the state to use its position as issuer of a non-convertible currency under floating exchange rates to pursue public purpose.

It is clear that the insights provided by MMT have not been absorbed either by mainstream economists or the politicians they advise. From the perspective of MMT, the hegemony of mainstream economic ideas has led to the retention of voluntary out-dated constraints, which are certainly considered as vital long-term elements of the system (although, as stated above they are often nullified by policy-makers in the short term for the purposes of expediency).

MMT provides a lens which enables a deeper understanding to emerge; one which recognises that in a system where the state issues its own sovereign currency under floating exchange rates there is never an "affordability" question in a monetary sense for the government. It never "has" or "doesn't have" money. It issues money *ex nihilo* and can purchase anything available within its own sovereign monetary space. In such a situation the limits of production and consumption of goods and services are real not monetary. The

[12] For a full discussion of the impact of free capital mobility on economic growth and its consequences for the degree of monetary and fiscal policy space available to governments see Siddiqui and Armstrong (2018).

[13] There is always the *possibility* of a "run on the currency". Wray, when discussing the operational reality present when governments issue their own sovereign currency, notes "while we deny that the deficit by itself can generate a *rational* fear of default on domestic-currency-denominated debt, we do recognize that deficits can impact expectations concerning the international value of the currency" (Wray 1998, p. 96, emphasis added). However, advocates of MMT stress that this effect is often grossly exaggerated, a point which has been amply demonstrated in the immediate post-GFC era, where rapidly increasing budget deficits did not lead to significant falls the exchange rate (notably, for example, in the US, Japan and the UK).

quantity and quality of factors of production determine what can be produced and consumed domestically. The state must ensure the economy performs so as to ensure that the nation lives up to its means. It must use its position as a monopoly issuer of the currency to ensure full employment.

Unfortunately, the legacy of fixed exchange rate regimes has remained firmly entrenched in the minds of orthodox economists and policy-makers. Tight budgeting, no longer required to protect the exchange rate, is retained for entirely different, primarily ideologically reasons; the metaphysical idea that governments are less efficient in using resources than the private sector. Deficit financing is still out of fashion (Mitchell, 2012) but no longer due to the influence of external constraints. The old theory of interest rate determination – loanable funds – is also a useful hanger-on from the past- it underpins the idea that if the government borrows from a fixed pot of saving if will drive up interest rates and "crowd out" private sector investment.

Mainstream thinkers consider what was formerly essential to mitigate the effects of membership of the gold standard or fixed exchange rate regimes as still being an essential part of operational reality but, from an MMT viewpoint, this is patently not the case. Much of what was once "useful" is now defunct and part of a large unnecessary baggage of self-imposed constraints which prevent democratic government from making full use of their much-expanded policy space to pursue public purpose.

Davis (1971) considers that the practical implications of acceptance of a theoretical framework are also highly significant. This is especially relevant in the case of MMT. In common with most economists, the vast majority of politicians conceptualise taxation as "paying for" public spending and make a point of trying to appear practical and frequently produce – or claim they have produced – "well-costed" plans in the manner of currency-using firms. An understanding of MMT highlights that such an appeal to the need to be "practical" is entirely misplaced. As we have noted it is clear that taxes do not "pay for" anything and indeed a correct understanding of the nature of the process of government spending and taxation leads to realisation that taxation cannot be a funding source for public spending. It is the access to real resources that determines – or limits – what the state is able to provide for its citizens. By providing a compelling analysis of the operational reality of the monetary system MMT is able to effectively counteract the mainstream narrative and to contribute in a significant way to the policy debate.

Such a contribution would involve, first, the provision of the critique of the effectiveness of policy techniques. As noted above, an understanding of MMT leads to a support of active fiscal policy as an effective means of maintaining full employment and, importantly, to a denial of the efficacy of monetary policy as a means to deliver price stability. MMT advocates for policy based around an employed buffer stock of labour (Job Guarantee) (Mosler and Silipo, 2016) and argue that such an approach would provide an effective price anchor absent in alternative approaches. Second, MMT can be applied so as to provide new insights which might lead to the development of effective means of achieving particular objectives. Once the nature of the operational reality present in the monetary system is understood, the feasibility of policies is more likely to be correctly assessed. This has been the case with policy design to counteract the pressing problem of climate change (Nersisyan and Wray, 2019).

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