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Modern monetary theory and its critics

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Introduction: Whither MMT?

The editors

According to its proponents, modern money / monetary theory (MMT) is a new distinctive theory and policy position. At the same time, MMT recognizes inspirations, antecedents and fellow-travelers. MMT started to attract attention in the 1990s, notably based on work emerging from the Levy Economics Institute and the University of Missouri, Kansas City. However, in the wake of the decade of fiscal austerity following the Global Financial Crisis, and the apparent exhaustion of standard monetary policy strategies and the ever-increasing income disparity, interest in MMT has grown beyond academia. One of its main proponents, Stephanie Kelton, professor of public policy and economics at Stony Brook University, is chief economic advisor to the high-profile Democrat US presidential candidate (2016 and 2020) Bernie Sanders. Most recently, Congresswoman Alexandria Ocasio-Cortez invoked MMT as a possible means to fund the Green New Deal, and she has been an active supporter of MMT academics via Twitter. MMT has also received growing attention in Europe as a possible solution to the long running economic dislocations of the Eurozone and the European Union. As such, a serious engagement with MMT seemed to be a useful contribution to constructive pluralistic dialogue, a *raison d'être* for this journal.

Little prior knowledge is needed to make sense of the essays that follow, but some brief scene-setting may be helpful.

In addition to Stephanie Kelton, MMT's main proponents have been: L. Randall Wray, William F. Mitchell, Eric Tymoigne, Dirk Ehnts, Scott T. Fullwiler, Fadel Kaboub, Pavlina R. Tcherneva, and Warren Mosler.[1] Amongst its more prominent claimed inspirations and antecedents are: John Maynard Keynes, Hyman P. Minsky, Michal Kalecki, Wynne Godley, Georg F. Knapp, A. Mitchell Inness and Abba P. Lerner. Clearly, this list covers major figures in non-mainstream economics. This positions MMT as occupying territory most prominently associated with Post Keynesians, but also with some Marxists and original institutionalists. MMT share their collective interest in the history of money (what money is) and its creation, capacities and consequences, broadly articulated as a situation of endogenous money and a monetary economy. L. Randall Wray, for example, is a managing editor of the *Journal of Post Keynesian Economics.* However, since MMT places a claim on a legacy and has sought to articulate its distinctiveness, it has provoked a range of reactions from erstwhile fellow travelers. Given the credentials of some of the people involved, their opinions represent a different type of challenge for MMT than the widespread misunderstandings that have appeared in the press regarding hyperinflation and irresponsible profligate printing of money.

MMT proponents tend to focus on situations where a country has a *sovereign currency*. This "sovereignty" has various characteristics that an individual country may exhibit in its institutions to a greater or lesser degree. The government (more accurately the state, which each successive government expresses) dictates a money of account and denominates its currency in it and issues that currency. Crucially, the government imposes a critical mass of "obligations" (something that must be transacted, disposed or settled) using the currency and

[1] For indicative references see Ehnts (2017), Kelton (2020), Mitchell and Fazi (2017), Mitchell and Muysken (2008), Mitchell, Wray, and Watts (2019), Mosler (2013), Wray (2015; 2008).

then accepts that currency in payment of the imposed obligations. From the point of view of MMT, the corollary organization of the state framework creates a set of highly significant capacities and consequences: unlike a household the state *cannot run out* of money, it can always meet its own obligations in so far as they are denominated in its own currency and it does not, therefore, face a "budget constraint" as this is conventionally understood. It is the scale and characteristics of the economy, the efficacy of government and the institutional specificities of the state and its statutes, but *not* the capacity to finance, which, says MMT, dictates the current limits.

There is a great deal more that might be said here regarding scope and nuance, but this is a matter for the essays that follow. At this stage, we need only note that, *within* MMT the subsequent issues are:

- the degree to which the currency *is* sovereign. (This depends on the currency's place in the hierarchy of the world's currencies, and the way exchange rates are set and the way financial assets, notably treasury securities, are produced and traded.)
- the degree to which the state can be treated as a single organized and institutionally integrated form, and
- the scope provided for creative state financing for fiscal "policy space", once (if) citizens, state functionaries and market actors grasp that (as MMT sees it) taxation is not the source of the capacity of government to finance.

It should become clear as one reads the essays that follow, that interlocutors respond to MMT along several related lines of inquiry:

- the degree to which MMT can *consistently and accurately draw on* its inspirations and antecedents;
- the degree to which MMT offers an adequate description and explanation of the state and its monetary economy;
- the degree to which MMT accurately explains how things *could work*, if appropriately configured; and
- the scope and limit of its application to countries in the world, given that so much hinges on degrees of "sovereignty".

This collection of essays from leading economists in the MMT debate offers the reader a range of viewpoints from which to become informed about what is set to be a significant part of economic policy discussion in the coming years. We thank the contributors for their essays and for their epistemological goodwill in, at short notice, taking part in this pluralist project.

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Author contact: edward.fullbrook@btinternet.com and jamiea.morgan@hotmail.co.uk

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Alternative paths to modern money theory

L. Randall Wray [Levy Institute, Bard College, NY, USA]

In recent months anybody who is anybody has had to weigh in on MMT. From Fed Chairman Jerome Powell (who admitted he has never read anything on the topic but claimed MMT is "just wrong"), to Carl Icahn (who phoned me during the 2016 presidential campaign to enthusiastically discuss similarities to his own way of thinking but now calls it "very dangerous"), to Japan's Finance Minister Taro Aso (who called MMT "an extreme idea and dangerous as it would weaken fiscal discipline" – as if Japan's fiscal discipline is a wonder to behold), to leftist Jerry Epstein (who calls it an "America First" ideology with "centralized controls" rather than relying on "more market friendly policies"), all are united in opposition to the theory. What all have in common is that what they critique has nothing to do with MMT. I am not going to devote space to countering their fallacious arguments here, but instead refer readers to several rejoinders. (Links to the critiques and rejoinders can be found here: Wray 2019a, Wray 2019b, Wray 2019c, Wray 2019d, Wray 2019e, Mitchell 2019a, Mitchell 2019b, Mitchell 2019c).

What I will do is to first clearly state what MMT is and then outline four paths that lead to MMT's conclusions: history, logic, theory and practice.

What is MMT?

MMT provides an analysis of fiscal and monetary policy that is applicable to national governments with sovereign currencies. We argue that there are four essential requirements that qualify a national currency as sovereign in the sense in which we use the term:

a) the National government chooses a money of account in which the currency is denominated;
b) the National government imposes obligations (taxes, fees, fines, tribute, tithes) denominated in the chosen money of account;
c) the National government issues a currency denominated in the money of account, and accepts that currency in payment of the imposed obligations; and
d) if the National government issues other obligations against itself, these are also denominated in the chosen money of account, and payable in the national government's own currency.

There is a fifth, important, consideration, which concerns the exchange rate regime and follows from the fourth requirement above. Strictly speaking, if a country adopts a gold standard or "dollarizes" it does not have what we define as a sovereign currency because it has agreed to exchange its currency for gold or dollars at a fixed exchange rate. Its obligation really is to deliver gold or dollars in payment. On the other hand, a nation with a floating exchange rate clearly does not commit government to deliver gold or foreign currency at a fixed exchange rate – so meets our definition of a sovereign currency. Many nations fall between these two extremes – they issue their own currency but operate with some degree of exchange rate management. They might also explicitly commit themselves to delivering foreign currency in payment of their own obligations (that is, they issue debt in foreign

currency). While floating a currency is not necessarily required in order to operate monetary and fiscal policy in a manner consistent with a fully sovereign currency, issuing national government debt in a foreign currency, or promising to exchange domestic currency for foreign currency at a managed exchange rate (which amounts to much the same thing) will usually compromise domestic policy space.

MMT argues that the financial situation facing a National government with a sovereign currency (meeting the four conditions identified above) is entirely different from that faced by a household, a firm, or a government that does not issue a sovereign currency. The sovereign currency issuer:

i) does not face a "budget constraint" (as conventionally defined);
ii) cannot "run out of money";
iii) can always meet its obligations by paying in its own currency;
iv) can set the interest rate on any obligations it issues.

It is important to note the use of the word "can" in the final two points (as well as "does not" and "cannot" in the first two). A sovereign government can impose on itself a "budget" that does "constrain" its spending. This is normal practice and probably a good idea. A sovereign government could choose to default on its promises. This is exceedingly rare and probably always a bad idea. A sovereign government might allow financial markets to set at least some of the interest rates on government obligations. This is also common and perhaps a good idea – although as we'll see below government sets the base rate even when it allows markets to set other rates.

Note that MMT does not argue that because a government "cannot run out of money" it should "spend without limit". MMT does not argue that because a government "can always meet its obligations" that "deficits don't matter". MMT does not argue that because a government does not "face a budget constraint" it should have an "unconstrained budget". Yet these are the top three complaints our critics have about MMT. This is why MMT is labeled "dangerous" and linked to hyperinflation. But MMT has never said such things.

Another top criticism – especially from central bankers – is that MMT calls on central banks to "print money" to "pay for" deficit spending. MMT does not recommend this, nor is such an action required to validate any of the four points made above. More generally, none of the main conclusions or policy recommendations of MMT requires any change to the current procedures adopted in the US and other sovereign currency nations for making government payments – for spending or in meeting obligations. If Congress or Parliament were to approve much larger budgets authorizing more spending, current procedures are adequate for ensuring the spending can be financed following usual procedures. While an MMTer would probably run monetary policy quite differently from the way central banks typically do today, no change to central banking is required to allow a government that issues a sovereign currency to obtain the policy space implied in points i through iv listed above – freedom to meet all obligations as they come due and to set the policy interest rate is already in the hands of sovereign currency issuers.

What MMT has always emphasized, instead, are the real resource constraints faced by sovereign currency issuers.[1] Even in the wealthiest and most productive economies – the US, China, Japan, the UK – if the national government were to ramp up its spending it would eventually face real resource constraints. Since the government "cannot run out of money" it could "win" a bidding war, taking resources away from other uses (in the private sector, or in use by lower levels of government). In some cases (war, Green New Deal) this could be desirable; in other cases maybe less so. The inflationary consequences might also be undesired. And inflation can be sparked before full employment (bottlenecks in some sectors) so it matters where the government's spending is directed.[2]

In any event, MMT has always recognized that "too much spending" or spending that is poorly targeted can cause inflation – resources can be scarce but sovereign finance is not. Further, the size of government spending, the size of the budget deficit, and the size of the outstanding debt stock are all poor measures of the inflation potential of additional government spending – even if measured relative to GDP. There are no magic ratios that indicate that government spending is excessive. The correct measure is the magnitude of additional spending measured against the supply of idle resources that will be mobilized by the spending. In addition, the "multiplier" effect of induced demand placed on already employed resources could be important, and as well the potential of importing alternatives to domestic production that would offset multiplier pressures. Fortunately – or unfortunately depending on one's view – modern economies usually operate with sufficient slack that even large boosts to aggregate demand are not likely to put much pressure on wages and prices. Our critics continue to fight an inflation battle that was won almost two generations ago. When we say this, it is not because we ignore potential inflation but rather because we observe substantial slack is the normal situation.

The other main complaint about MMT comes from critics who argue that the approach cannot be applied to Somalia. The Central African Republic. Democratic Republic of the Congo. Burundi. Liberia. Zimbabwe. Niger. Malawi. Mozambique. Ecuador. Greece. Honduras. Nicaragua.[3] And because it is not universally applicable, MMT is claimed to be incorrect.

Indeed. And how many of these countries fit the requirements laid out above? Let's see. Somalia has not issued any currency since 1991; large transactions are handled in US dollars and small ones in old currency that is still circulating. Besides failing to meet the conditions enumerated above, by just about any measure Somalia is an example of a failed state – and its exchange rate regime is probably among the least of its problems. The Central African Republic pegs its currency to the Euro. The Democratic Republic of the Congo was highly dollarized until recently, although reforms are now pushing for tax collection in local currency. In recent years, Burundi has experimented with a currency-board arrangement, a dual and even triple exchange rate system, and a managed exchange rate system; it seems to be slowly moving toward a floating rate. The US dollar is a legal tender in Liberia, with local

[1] See a detailed discussion of the MMT approach to resource constraints in the context of the Green New Deal in Nersisyan and Wray http://www.levyinstitute.org/publications/how-to-pay-for-the-green-new-deal.
[2] This is why MMT favors the directed spending of a Job Guarantee that hires the unemployed.
[3] Note that here I've purposely chosen the poorest nations in the world as well as some individual countries that are often cited by critics as "proof" that MMT is wrong because it cannot be applied to them. They are also chosen as "proof" that MMT is an "America First" approach that shows no concern for impoverished nations. It is also important to note that while perhaps the majority of nations on earth do not issue sovereign currencies (as defined above), sovereign currency nations account for the vast majority of global GDP – perhaps well above 80%.

currency pegged to the dollar and with all but the smallest transactions using the US currency. The US dollar is also legal tender in Zimbabwe. Niger has a managed and confusing triple exchange rate system, not counting the unofficial black market rate. Malawi and Mozambique have only recently moved to floating rates. In Ecuador (as in Liberia) the US dollar circulates alongside local currency that is pegged to the dollar. Greece abandoned its currency and adopted a foreign currency. Honduras and Nicaragua peg to the dollar.

The observant reader will notice a pattern: MMT does not apply to these cases because they don't fit the conditions listed above; and although a few of these might be moving toward currency sovereignty one expects that they face a long road ahead. MMT proponents have long been critics of the set-up of the Eurozone, arguing that divorcing countries from their formerly sovereign currencies would likely lead to disaster. It did lead to disaster. It should be obvious that our critique of the Euro experiment is not quite the same thing as arguing that Mozambique will solve all its problems by floating its own local currency.[4] MMT does generally favor floating rates to expand domestic policy space, however, that is probably not the first or even the most important step to put a country on the path to development. I have long pointed to China's development strategy and the positive role that its managed currency regime has played – while also arguing that China must and will eventually float to retain policy space as its export surplus disappears.[5]

It is true that most of the work by MMT scholars has concerned nations that meet the conditions listed above as qualifications for issuing a sovereign currency – that is, after all, what MMT is concerned with. Most nations do not meet these conditions and they have been examined less frequently by MMT scholars (for exceptions, see in particular work by Bill Mitchell and Fadhel Kaboub). The problems faced by emerging nations are quite different to those faced by the developed sovereign currency nations that we have – mostly – focused on. That does not make MMT wrong – it has been concerned with the misguided economic policy of the world's biggest economies. And, to a great extent, policy failures in these big and rich nations spill over to produce problems for the rest of the world. As the rich nations have increasingly turned to austerity, global growth has faltered. And the biggest nations also run the international institutions that impose harsh conditions on developing nations as well as exporting neoliberal thinking that infects domestic policy-making in those nations. The recipe of pegged exchange rates (as well as dollarization), borrowing in foreign currency, tight budgets through "fiscal consolidation", export-led growth, and independent monetary policy (which is simply code for high interest rates) propagated within and abroad by neoliberals (and even by far too many heterodox economists) has not served either developed or developing countries well. Arguing that sovereign currency issuers can make better use of their domestic policy space is not "America First" strategy, and it is likely that developing nations would benefit if all sovereign currency nations recognized the implications of MMT and used them to their advantage.

Let us turn to an overview of alternative paths to MMT. We have often begun our explication with logic, based on a working assumption that economists are good at logic. One would think

[4] See Bill Mitchell's discussion of MMT's relevance to developing countries here: http://bilbo.economicoutlook.net/blog/?p=41327; and Fadhel Kaboub's excellent explanation here http://inthesetimes.com/article/21660/united-states-venezuela-modern-monetary-theory-trade-deficits-sovereignty.

[5] http://www.levyinstitute.org/publications/options-for-china-in-a-dollar-standard-world-a-sovereign-currency-approach

so – with all their models and math and deductive thinking. However, with about 35 years of work in this profession, I have concluded that economists are terrible at logic.
So let's begin with history.

The historical path to MMT

We often begin at the beginning, following the work of G.F. Knapp, J.M. Keynes, and A.M. Innes to locate the origins of money with the authorities – originally religious authorities, then secular rulers, and finally down to modern democracies.[6] We have told the stories of the early clay shubati tablets, the hazelwood tally sticks, and the relatively late development of metallic coins. All the known evidence to date indicates that the authorities came up with a money of account used to denominate debts and credits (as Keynes hypothesized after reading Innes, the early money units were always based on grain weight units – reflecting record-keeping of daily allotments of foodstuff by those temple forbearers of modern states--as also documented by Michael Hudson). They then imposed obligations on subjects or citizens denominated in those money units (tithes, tribute, fees, fines, and later taxes), issued their own obligations denominated in the money of account, and then collected back their own obligations in payment of the obligations they had imposed.

Only later did markets develop – once there was a money of account as well as official price lists in the money of account, markets became possible. Money as a medium of exchange finally comes at the end of this historical process, following development of the money of account, taxes and other debts, prices, and markets. Markets worked just fine using credits and debts recorded on slate, clay, or whatever other substance proved handy for record keeping. In other words, the true history is just about the reverse of the barter-to-money story told by textbooks.[7]

This alternative history is, quite simply, established beyond doubt. And it leads directly to MMT.

But economists are not much better at history than they are at logic. So let's try a much more recent, simple, and clear example – one provided by Farley Grubb, the premier expert on America's colonial currency.

The American colonial governments were always short of British coins (but prohibited by the Crown from coining their own) to finance their activities so they each came up with their own money of account (for example the Virginia pound or the North Carolina pound), imposed taxes in that money of account, issued paper notes in the money of account, spent the paper notes, collected those notes in taxes, and then burned their tax revenue.[8]

I told you it would be simple and clear. A one-sentence history of sovereign currency in Colonial America. If you want more details, read Grubb.

There are several things that I like about this example. First, it is clear that the colonies spent the notes first, then collected them in taxes. They could not possibly have collected paper

[6] For an early discussion, see Wray 1998.
[7] See Graeber 2011.
[8] Yes, literally burned it – as noted in the colonial records that kept close track of the number of notes issued and subsequently burned.

notes in taxes if they had not first spent them because there were no other paper monies around. There weren't even any banks issuing notes in the colonies at the time. Second, the colonies did not spend the tax revenue received in the form of paper notes. As Grubb notes, they burned the notes. All of them. That was the purpose of the tax: in the tax laws the taxes were titled "Redemption Taxes" with the expressed purpose of "redeeming" the notes – removing them from circulation to be burned. Finally, the spending was simultaneously a "self-financing" operation as the notes were spent into existence. Taxes are for redemption, not to generate revenue "income" to be spent – as Beardsley Ruml put it.[9]

Think of it this way: burning the notes was an inflation-avoidance maneuver. The point of collecting the notes was to get them out of circulation. If all the taxpayers had simply "lost them in the wash", there would have been no need to collect the notes. Alternatively, if the notes had a self-destruct code built into them (think *Mission Impossible* tapes) the Redemption Tax would not have been necessary for removing notes. However, no one would have accepted the notes without the obligation to pay taxes. We conclude that taxes are necessary from inception to "drive the currency" (that is, to create a demand for it) and – perhaps – to redeem the currency, withdrawing potential aggregate demand to keep inflation at bay. But not for revenue.[10]

The colonies also collected some taxes in the form of British coin. Obviously, coins were not the sovereign currency of the colonies – but rather of the Queen. Coins collected in tax payments were subsequently spent. Tax revenue is important for governments that do not issue sovereign currency: tax first, then spend is their motto. Sovereign currency issuers spend first then tax. And then burn the revenue.[11] That's the difference between a currency issuer and a currency user.

The final point that is driven home by the case of the colonies is that it is quite clear that operation of their sovereign currency systems did not rely on an advanced state of development, a powerful military, or issuance of the international reserve currency.[12] At this stage of the development of America each colony was practically insignificant in terms of economic power, its currency played no role outside its borders, and it had a dominant international currency (British coins) in circulation locally (and even accepted by its government). Still, colonial currency was in high demand locally – and, according to Grubb's sources, in some instances even preferred over British coins as a medium of exchange. As such, these tiny colonial governments (albeit with grand schemes and a bright future!) were sovereign currency issuers with the ability to spend their currency into existence.

That's the history lesson for today. It is infinitely generalizable. This is the way it has worked for the past 4000 years, at least, as Keynes put it. That is the Modern Money period to which MMT applies.[13]

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[9] See Ruml. Also note that our term "revenue" is derived from the Old French word for "return". What is returned in tax payment? The currency issued when government spent. We still use the term "tax return" when we file our taxes.

[10] This was the point made by Beardsley Ruml after WWII in his article: "Taxes for Revenue are Obsolete".

[11] Or melt it and re-coin it in the case of metal currency.

[12] Our critics often claim that MMT only applies to the USA because it is a mighty military power, has been to the moon and back, and issues the international reserve currency. Clearly, Colonial America could do none of those things.

[13] I came up with the term "modern money" as an inside joke based on a statement made by Keynes in the *Treatise*, and used it in the title of my 1998 book. Keynes seemed to have come to this view after reviewing the 1913 article by Innes that set him off to study early monies – during a period he called his

The logical path to MMT

Wynne Godley's office at the Levy Institute was just down the hall from mine. In an agitated state, he called for me. He had been looking at all the mainstream macro models he could find and reported to me "they are all incoherent, every single one of them. All stock-flow inconsistent." I wasn't surprised since I was well aware of the problems with the ISLM workhorse model – a model still used by MMT's critics like Tom Palley and Paul Krugman – that had even been rejected by its developer, John Hicks, who announced by the 1980s that he could no longer make any sense of it.

Mainstream macro has never allowed a significant role for money and finance. Every student of economics has been taught the circular flow diagram, with an arrow running from households to firms, representing purchases of goods and services, and an arrow running from firms to households representing income payments to the factors of production. Wages finance consumption and consumption finances the wages. It is a nice infinite regress that never asks the question: but where did the money come from in the first place?

In Chapter 10 of the typical textbook, banks will be introduced. The circular flow diagram puts banks in the center, taking in deposits of the factor incomes and lending them out to firms to pay the factors. The banks are pure intermediaries – they lend the deposits they receive and receive the deposits they lend. There is no explanation of the genesis of the money. This is still the view held by most of our critics – based on an infinite regress and no room for a state money.

Later, still, the textbook introduces a central bank, reserves, and the deposit multiplier that allows an expansion of the money supply even though no individual bank can create money. It is simultaneously magical and perplexing. Paul Krugman still uses it to bash the Minskians who hold the silly notion that banks can create money "out of thin air". A boost to government spending simply shifts the IS curve out, raising interest rates and reducing money demand so that a fixed money supply can do double duty as a hot potato that no one wants to hold at the higher interest rates. There is no attempt made by mainstream macro theorists to reconcile the stocks of money to the income and spending flows of the circular diagrams. It is all stock-flow inconsistent.

No mainstreamer wastes her time contemplating how the government or private firms spent more (flow) without finance (balance sheet stock). As Joan Robinson remarked, if a clever student does ask the teacher about something like this, she is told that the answer will be given later in the more advanced courses. But, of course, the answer never comes and as the student gains wisdom she knows better than to ask again. These are just questions that one learns to avoid if one wants to get ahead in economics.

Kalecki said that economics is the science of confusing stocks with flows – so best to just remain quietly confused as one uses incoherent models. As Minsky would put it, their analysis is not disciplined by balance sheets. As Godley put it, a coherent analysis requires that flows

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"Babylonian Madness". See Ingham 2000. Keynes's statement was as follows: "The State, therefore, comes in first of all as the authority of law which enforces the payment of the thing which corresponds to the name or description in the contracts. But it comes in doubly when, in addition, it claims the right to determine and declare what thing corresponds to the name, and to vary its declaration from time to time – when, that is to say, it claims the right to re-edit the dictionary. This right is claimed by all modern states and has been so claimed *for some four thousand years at least*." Keynes, 1930, p. 44; emphasis added.

come from somewhere and go somewhere to accumulate as stocks. All mainstream theory is in that sense incoherent.

Unfortunately, some – maybe most – heterodox theory is also incoherent.

A few years ago I participated in a Ford Foundation project that brought together a few "endogenous money" proponents and some "New Institutionalists", including two Nobel winners, to find common ground on finance. As I tried to explain how banks create deposits as they make loans needed by firms to start the production process, the Nobel winners told me that is not how it works. Firms get the money they need from their sales. OK, I asked, where do the buyers get that money? From payment of wages by firms. But how, I asked, can firms pay the wages? From the sales, of course. Infinite regress. As the discussion heated up, one of the Nobelers told me that banks cannot create money out of thin air. They have to get the reserves first. He knew this was true because his wife was at the Fed and she had explained the deposit multiplier process to him. (She went on to the CBO, where she waged battle against budget deficits.) Each individual bank only lends out the excess reserves but at the aggregate level there's a multiple expansion. Magical obfuscation that trumps logic.

Final background story on economists and logic. I was at a conference on the legal history of money – full of legal scholars plus a few heterodox economists. One of these (a Post Keynesian monetary theorist) was giving a talk arguing that the "taxes drive money" view must be wrong because when he accepts payment in dollars he never thinks of taxes. One of the legal scholars raised a hand and asked: well, then, why do you accept it? "Because I think someone else will accept it." So, he accepts dollars because he thinks he can pass them off onto BiffySue. This is the P.T. Barnum "greater fool" theory of money: there's a sucker born every minute and some of them are dumber than me, so I'll accept a fiat currency with the expectation that I can find one of those suckers. (The audience broke out in laughter, yelling at him "it's the taxes, stupid".) Another infinite regress.

As I said, economists are not good at logic. But let's forge ahead anyway.

Warren Mosler provides the following example. He wanted his kids to wash his car. To motivate them he offered to pay them using his own business cards. "But dad, why would we want your cards – they are worthless." Well, he answered, I'm imposing a tax of five business cards today if you want access to food, clothing and shelter. "But how can we get the cards?" I'll pay five business cards for washing the car. Note how all the logic we learned from the history of Colonial currency applies: Warren has to spend first before collecting the cards; no one can pay taxes until Warren spends; and redemption of the cards in tax payment removes them from circulation. There is no infinite regress. The car gets washed and the kids get fed. Taxes drive money and money mobilizes resources such as labor for car washing. In a nutshell, that's our monetary system.

Eric Tymoigne uses "free pizza coupons" as an example to demonstrate the logic of a sovereign currency. Your local pizza joint issues coupons for free pizzas. When a coupon does come in, the restaurant must bake a pizza. The outstanding coupons represent liabilities of the restaurant and assets of the holders. Each coupon is worth a pizza until the expiration date, after which its value immediately drops to zero. When a coupon is presented to the restaurant for redemption, it is torn and tossed in the recycling bin. Only a misguided restaurant manager would lock them up in a safe deposit "lockbox" thinking they are valuable assets. The manager knows they represent claims and thus potential costs in terms of labor,

ingredients, and fuel involved in pizza production. It would be silly to accumulate them to be counted as assets that would help defray the costs of meeting the future demand of customers for pizzas.

While this example is quite different from the previous one – most importantly, the sovereign issuer is also the producer of the relevant output (pizza) rather than the purchaser (car washing services) – but there are important similarities. Note here again we see that the "sovereign currency pizza coupon" must be issued before it can be redeemed. Further, the sovereign issuer destroys redeemed coupons; rather than viewing them as assets to be saved (or spent), the issuer sees them as a liability from which the restaurant is redeemed when received. And we learn another important lesson that also applies to sovereign currencies: it makes no sense for a sovereign to accumulate its own liabilities on the pretext that these somehow can finance spending later.

For a real world example of such a nonsensical action we only need to look to the Social Security Trust Fund – in which the US government accumulates claims on itself in the illogical belief that this somehow reduces the need for tax revenue in the distant future by providing an alternative source of "finance". Most of MMT's critics want a bigger Trust Fund to "pay for" Social Security to support retirees twenty or fifty years down the road. That's like the pizza joint that foolishly locks away redeemed coupons in the belief they will help in the production of pizzas later.

Economists aren't very good at logic.

To summarize the logic of sovereign currency: the sovereign chooses a money of account, imposes a tax (or other liability) in that unit, issues a currency (denominated in that unit) in payment for goods and services it desires, and collects the currency in payment of taxes. The logic applies to any form of currency the sovereign might choose: coins, paper, or electronic entries such as keystroke credits to private bank deposits or to reserve deposits at the central bank. The sovereign cannot run out and has no need to store keystrokes to use later.

As Keynes said, states have claimed the right to do this for the past 4000 years, at least. With the advent of central banks, some of the logic becomes obscured by the practice. We'll turn to real world practice in the final section to show that the logic still holds up in spite of modern procedures adopted.

The theoretical path to MMT

I have already mentioned Keynes's adoption of the Knapp-Innes state money approach in the *Treatise on Money* that is a major influence on MMT. Another influence is Keynes's theory of effective demand in *The General Theory*. It is theory that puts causation into our accounting logic. Keynes insists that the direction of causation goes from spending to income, from injections to leakages, from investment to saving. These are all flows. The same logic applies to stocks that accumulate from flows. Spending creates income flows that can be used to accumulate financial wealth. Production flows can generate accumulations of real assets. Spending and production must be financed before income is generated, which means that finance must be provided before income can be saved.

As Keynes argued, saving cannot be a source of finance (indeed, he argued that consumption is a better source – since it creates income, while saving is just a leakage that can be accumulated in a liquid form, hence, never returning to the circular flow). We thus need a prior source of finance. While Keynes did not expound upon this in the GT, he did so in both the TOM and in writings after the publication of the GT.

Schumpeter put it clearly: the banker is the Ephor of Capitalism. Following his lead, the Franco-Italian circuit approach provides an alternative to the mainstream circular flow diagram, where production is financed by "thin air" money creation (in the form of a bank deposit) by bank lending. This is the source of finance to pay the wage bill, returned to firms in sales of output, and finally redeemed in repayment of the initial loan. No central bank reserves are required to initiate this process, and we don't need a fantastical deposit multiplier. Central banks are introduced into the circuit to facilitate clearing between banks – not to provide some kind of resource to the deposit-creating process. As the endogenous money approach insists, "loans make deposits and deposits make reserves" in the sense that if banks need reserves for clearing (or to meet legal requirements), the reserves are supplied on demand by the central bank. Banks can never "run out of money" since they create it when they make loans, and central banks can never "run out of reserves" since they lend them into existence.

So far, so good. I think every heterodox economist (except, perhaps, "structuralists" like Tom Palley – who still uses the fixed money supply, ISLM framework) as well as most central bankers are now on board with this.[14] Bank money and central bank money are not scarce resources – we can have as much as we want (and we generally have more than is good for us as Wall Street's banksters run wild).

Paradoxically, most heterodox and orthodox economists believe that the sovereign government, itself, faces a critical money shortage. Bankers cannot run out. The sovereign government's central bank cannot run out. But government faces a strict budget constraint;[15] exceeding it leads to disaster: Attacks by Bond Vigilantes. Insolvency. Bankruptcy. Hyperinflation. The largest and most powerful economic entity the world has ever seen – the US Federal Government – must get its fiscal house in order. Its deficits crowd-out domestic savings, reducing private investment and growth! Its deficits soak up global savings, crowding out investment abroad, and reducing global growth! It relies too much on charitable lending by the Chinese! Any day now the supply of dollars to Uncle Sam will cut be cut off! A run from the Dollar will reduce its international purchasing power to peanuts! Our profligate government is leaving hundreds of trillions of dollars of debt to our grandkids!

And what is the MMT solution? Why, MMT proposes to force the Fed to just print up trillions of dollars to pay for all the crazy spending! MMT would violate the sacrosanct independence of the central bank! Weimar! Zimbabwe!

Nay, MMT follows Keynes. Government spending, like private investment, is an injection that raises income. More specifically, as Kalecki showed, government spending creates profits because it is a source of business revenue but not a cost of production. Taxes are a leakage, reducing household net income and business net revenue. If government spends more than it taxes, this is a net spending surplus – increasing profits dollar-for-dollar. A net spending

[14] See Wray 1990 for one of the first full treatments of the endogenous money approach.
[15] As Stephanie Kelton says, progressives think money grows on rich people, so Uncle Sam must go to them hat-in-hand to get finance.

surplus[16] by government cannot "crowd-out" private investment – it creates profits that are likely to boost the desire to invest. A net spending surplus by the US government cannot absorb global savings – instead it creates net income for the US private domestic sector as well as for the rest of the world. China does not lend dollars to "finance the US government's profligacy", rather, the US government's net spending surplus creates income that supports US imports that create dollar credits for Chinese exporters.

And those are not "taxpayer's dollars" that the US government spends. Like the Colonial American governments, modern sovereign governments "burn" all the revenue they receive. As we'll see in the next section, when taxes are paid, the taxpayer's deposit is debited and the bank's reserves at the Fed are debited. This is the modern equivalent of burning notes received in tax payment. And where did those taxpayer deposits and bank reserves come from? From the government's spending – the injection that created the income that could be taxed.

Now, it is true that government spending is not the only injection. Private investment and exports (or, net exports) also create income that can be leaked. Wynne Godley's sectoral balance approach – long incorporated within MMT – shows that the sum of the balances of the government, domestic private, and foreign sectors is identically zero. The normal position for the private sector is a surplus balance – as households are generally net savers, and sometimes firms are also. But for the private sector to spend less than its income – what is normally called a surplus balance – at least one of the other sectors must run a deficit balance (that is, spend more than its income). If a country runs an external surplus (current account surplus), then its government's spending does not have to exceed taxes. But, obviously, not all countries can run current account surpluses – and the US has run nearly continual current account deficits since the Reagan administration. For the US private sector to net save in financial terms, the US government sector taken as a whole must spend more than it taxes. Given that state and local governments are not sovereign currency issuers, it is up to the Federal government to spend more than tax revenue – what we call here a net spending surplus.[17] That net spending surplus (an injection) by the Federal government is by identity equal to the private sector's net spending deficit (that is, a surplus balance) and the rest of the world's net spending deficit (also a surplus balance) that together make up the leakages.

The Godley approach highlights an identity. Keynes's theory adds the causation: at the aggregate level the causation goes from spending to income, from injections to leakages, from Federal government net spending surpluses to private sectoral balance surpluses. This doesn't necessarily mean that the government's balance is a result of discretionary policy but it does mean that if the government's injection were smaller, the sum of the leakages (surpluses of the domestic private and rest of world sectors) would be smaller.

[16] This is conventionally called "deficit spending" – government spent more than it taxes. The term "deficit" immediately conjures in the mind that government is somehow "deficient". But spending more than taxes is better termed "net spending surplus", which is a positive thing for the private sector. A government budget surplus really ought to be called "deficient spending" or a "net spending deficit". I thank Kelly Gerling for this framing.

[17] To be perfectly consistent, if government spends more than it taxes, that is a net spending surplus; if the private sector spends less than its income, that is a net spending deficit; and if the US as a whole spends more than it receives in payments from abroad that is a net spending surplus. Putting it this way is better framing and more consistent with the Keynesian injections/leakages approach as injections are net spending surpluses and leakages are net spending deficits. Unfortunately economics teaches it the other way around – reinforcing the view that "deficits" (injections) are somehow bad and surpluses (leakages) are good.

The MMT theoretical approach is based on, and entirely consistent with, the Keynes-Kalecki-Godley approach to the theories of effective demand, of profit generation, and of sectoral balances, respectively. The critiques of MMT are based on the fundamentally illogical loanable funds and ISLM approaches. MMT extends the endogenous money approach to private money creation by integrating it with the state money approaches of Knapp, Innes and Keynes (of the TOM). The critiques of MMT are based on a combination of exogenous money theory plus a flawed understanding of the meaning of central bank independence.

MMT does not contrast the credit theory of money (usually applied to private banks) against the state money theory (applied to government money). Instead, following Innes and Minsky (who argued that "anyone can create money, the problem is to get it accepted"), it integrates the two. The state chooses the money of account and issues its currency and other obligations in that unit; private banks (and others) also issue liabilities in the state's money of account. In both cases, the issuer (private bank or state) must take back its own liability in payment – what we earlier (following Colonial America's law) called redemption. Obviously, a "money" must be issued before it can be accepted for redemption. When the issuer receives its own obligation in payment, it simply "burns" it (like the colonial currency as well as the pizza coupon accepted in redemption for a pizza).

The US government spends only dollars, and, more specifically, it spends in the form of dollars of reserves issued by the US Fed and credited to private bank accounts at the Fed. Its tax receipts are almost solely[18] received in the form of US Fed reserves debited from private bank accounts held at the Fed. To the extent that foreign central banks hold US dollars, these came from the US and are held in the form of reserve deposits at the Fed, US Treasuries, or US cash (Fed notes).[19] China cannot be a net source of finance for the US government because the dollars held by the Bank of China are US liabilities that came from US spending on imports. Foreign holders at the aggregate level can shift portfolios around but cannot increase (or reduce) the "supply of dollars" (changing portfolio preferences can affect the "prices" – exchange rate and possibly interest rates – but not the quantity of dollar liabilities created).

The supply of dollars abroad is determined by the flow produced by the US current account balance. That can be affected by the net government spending surplus (as discussed above) – all else equal, the bigger the government injection, the more private sector income generated, and the greater the (net) dollar leakage through the current account. However, it could also be the result of the US private sector increasing its spending relative to its income, or a reduction of the rest of the world's spending on US output. The foreign accumulation of US Treasury bonds is closely related to bi-lateral current account surpluses against the US: the biggest external holders of US Treasuries are China, Japan, other net exporters to the US, and offshore banking centers.[20] Even if the US Federal government spent less than it taxed over the next few years, if the US continued to run current account deficits, it is likely that foreign holdings of US Treasuries would continue to rise in step. In other words, it is the current account deficit of the US (i.e. US surplus spending flowing to the rest of the world) that leads to dollar claims on the US, including claims on the US government – the safest assets

[18] As noted below, an insignificant amount of taxes received by Treasury are in the form of cash – issued by either the Treasury or the Fed.
[19] With the rise of securitization, foreign central banks also hold some securitized private liabilities, such as US MBSs.
[20] See Wray, Does America Need Global Savings to Finance Its Fiscal and Trade Deficits? *American Affairs* Spring 2019 / Volume III, Number 1.

in the world. This is not because the US needs to borrow dollars from abroad but rather because foreigners accumulate dollars as the stock of net wealth produced by net US spending abroad increases.

If you've been worried that Uncle Sam has to get dollars from China to finance his spending, you can breathe a sigh of relief.

The practical path to MMT

In the old days, governments spent and received currency – coins and paper money – directly. The US Constitution gives to Congress the sole right to issue currency (and for many years the Treasury spent its currency into circulation). However, this has been interpreted to mean that Congress can delegate this right to a central bank. Over the years many critics have objected to that provision, and also to private bank issue of notes and now deposits that for all practical purposes are the primary media of exchange (with government insurance standing behind them). Still, our currency today is issued by the Fed in the form of paper notes (cash) and reserves, with the Treasury issuing only coins – together what is called the monetary base. And banks issue deposits used as one of the primary means of payments. This is not likely to change – even as "electronic money" increasingly dominates the payments system.

Cash is essentially a zero coupon consol. Consols are perpetual government liabilities that never mature, and of course some do pay coupons.[21] Government treasuries also issue short and long maturity liabilities that promise interest. Central banks issue notes (that also can be seen as zero coupon consols), reserves (that may or may not pay interest), and sometimes longer maturity debt that pays interest. Central banks notes are issued on demand (the Fed was created to provide an elastic supply of currency); reserves are supplied either in overnight lending (at the discount window), when central banks purchase assets (typically, government bonds or private financial assets; these are often repos – a purchase with a matched sale), or when they make payments on behalf of the Treasury (usually by far the most significant source of reserves – all but ignored except by MMT).

After the creation of the Fed in 1913, its notes gradually replaced Treasury notes (which are no longer issued). Importantly, the Fed spends reserves when it purchases assets or lends reserves; so it either spends or lends reserves into existence. The US Treasury still issues coins on demand (not for spending) – but it counts the seigniorage as revenue.[22] Today, all Treasury spending takes the form of a payment of reserves by the Fed; plus, the Fed will exchange its notes for reserves on demand. There is no case in which the Fed "prints money" (that is, prints notes) to "pay for" Treasury spending – and none of the MMT description or policy conclusions require that the Fed begin to do so, in spite of what our dishonest critics proclaim.

[21] Seth Carpenter introduced this view of cash at the 2019 "Minsky Conference" held at the Levy Economics Institute.
[22] Apparently, it is legal for the Treasury to issue platinum coins of any denomination – for example, in denominations of $1 trillion. This potentially offers an easy route to evade debt limits (since coins are not counted by the Treasury as debt) and was considered (and rejected) by the Obama administration. This is not something MMT advocates, but it is a way to finesse the debt limit. I prefer we tackle the debt limit head-on as it is a stupid self-imposed rule.

From inception, central banks have played a role in government finance – often purchasing treasury bonds (sometimes at concessionary rates, as during WWI and WWII). Today, the modern central bank makes and receives all payments for its treasury. All US government spending takes the form of Fed credits to private bank reserves, with the receiving banks crediting the deposit accounts of recipients of government spending. Virtually all tax payments take the form of Fed debits to private bank reserves, with the private banks debiting deposits of the taxpayers (while it is possible to pay taxes using notes or coins, this is rarely done).

This provides a degree of separation between the modern treasury and the public that confuses economists, who argue that government no longer spends or receives currency. They believe that government must wait for tax receipts before spending. The way they view the process is that the taxpayer's deposit in a private bank is transferred to the treasury's deposit at the central bank, allowing the treasury to write a check that will eventually lead to a deposit in the recipient's private bank. In their view, the critical step is Treasury receipt of taxes in the form of a debit to the taxpayer's account and a credit to the Treasury's account at the Fed. Essentially, their view is that private banks create money for the government to spend. When MMT explains that government actually spends by crediting a private bank's reserves, the critics object that this is true only because we have consolidated the treasury and central bank. They then go on to extol the virtues of central bank independence and warn that such consolidation is the path to Zimbabwe hyperinflation. Central bank independence must be preserved so that it can "just say no" to treasury spending.

For 25 years MMT has been explaining all the internal accounting procedures involved when modern treasuries and central banks cooperate for government spending and taxing to take place. In the US this takes about a half dozen steps. Whenever we turn to a detailed description of those procedures our critics accuse us of confounding matters by going through complex accounting. No one has been able to show any errors in our explication. But the critics continue to assert that somehow these procedures create a constraint on government spending. We show that actually the procedures adopted ensure that, by design, treasury never faces a constraint. All its payments can be and will be made as they come due. No treasury checks ever bounce due to insufficient funds. Whatever Congress has budgeted can be spent.

MMT still awaits proof from the critics that US Treasury checks occasionally bounce because the Fed refuses to clear them when Treasury's balance zeros out. In fact, that never happens – which is proof that the procedures work to ensure payments are made.

We do, of course, recognize the Congressionally-imposed debt limit, which introduces a wrinkle that could someday cause a default on obligations. This, however, has nothing to do with the operating procedures developed by the Fed and Treasury. Nor does it have anything to do with strikes by "bond vigilantes". The limit exists because Congress imposes it. But until Congress forces a default by refusing to raise the debt limit, all Treasury obligations will be met with current procedures.[23]

I'm not going to repeat the detailed exposition.[24] What is important for our purposes is that while the Fed complies with prohibitions against "direct financing" of Treasury spending, its

[23] If and when such a default occurs, it is a voluntary default in the sense that the government has chosen to do it. No bond vigilante will have forced it. The "bond vigilantes" at the dealer banks always stand ready to submit bids for more bonds.
[24] See articles by Bell 2000, Fullwiler 2011, Tymoigne 2014, and Wray and Tymoigne 2014.

laser-like focus on the payments system plus its desire to hit overnight interest rate targets ensures that it cooperates with Treasury's operations. Any "independence" in these matters is illusory. The Fed's independence is limited to its ability to choose the overnight rate target.[25]

To put it as simply as possible, current procedures ensure the Treasury has credits to its account at the Fed that can be debited when the Fed credits reserve accounts of the private banks of the recipients of Treasury spending. This is little more than internal record keeping between the Treasury and the Fed. If it is projected that the Treasury's credits will fall short of debits, Treasury will sell bonds to dealer banks that stand ready to place bids.[26] The Fed, in turn will supply reserves as necessary to ensure bonds sold in the new issue market do not place temporary pressure on overnight rates. As bonds are sold, Treasury's deposit at the Fed is credited. Treasury spending reverses this process as its deposit account is debited and private bank reserves are credited, with the Fed then removing reserves from the banking system as necessary to remove pressure on rates.[27]

Critics of MMT want to claim that this proves that taxes and borrowing "finance" Treasury spending – so the Treasury is subject to a government budget constraint after all. MMT responds that the operations just described would take place whether the government's budget were in balance, in surplus or in deficit (as conventionally defined) over the course of the year. This is because even if government spending is less than taxes paid over the course of the year, there can be large mismatches between the flows of spending and taxing on a daily, weekly, and monthly basis. Since the Fed is not supposed to allow "overdrafts", Treasury will need to sell bonds over the course of the year even if it ends the year with total tax revenues greater than spending.[28] Further, bond sales require that banks have reserves – which can only come from Treasury spending (undertaken on its behalf by the Fed), Fed purchases of assets, or Fed lending. The reserves must be put into the banking system before they can be withdrawn (just as Mosler's business cards must be issued to his kids before they can pay business card taxes). The same is true of tax payments – since the taxpayer's bank will lose reserves when taxes are paid, reserves first must be put into the system by Treasury spending, Fed purchases, or Fed lending. Neither taxes nor bond sales can be a net source of finance for government as the means of paying taxes or buying bonds (reserves at the Fed) must come from the government (Treasury and/or Fed) before taxes are paid or bonds are bought.

The argument is analogous to Keynes's argument that saving cannot be a net source of finance for investment and, indeed, that consumption is a better source of finance. A credit to a bank account must occur before a saver can buy a corporate bond. A household's income can be accumulated in the form of bank deposits, some of which are used for consumption and some of which are used for saving. Only a portion of the saving will go toward purchasing bonds – some will remain in more liquid form and hence is not available to finance

[25] In addition, the Fed is supposed to be insulated against partisan politics – but that is true of other agencies of the Federal government. (And President Trump seems to be dedicating considerable energy to breaking down that barrier.)
[26] To remain in good standing, dealer banks must place bids; the Treasury uses surveys before auctions to determine what maturities markets want.
[27] Procedures have been somewhat simplified in recent years with the change to payment of interest on reserves (so that excess reserves don't result in an undesired "ZIRP" – zero interest rate) and with Quantitative Easing (that put so many excess reserves into the system that there's no danger that bond sales cause insufficient reserve holdings).
[28] As Tymoigne shows, even during the Clinton years when spending fell below tax revenues, government bonds outstanding still grew. "Debunking the Public Debt and Deficit Rhetoric", Eric Tymoigne *Challenge*, 2019 https://doi.org/10.1080/05775132.2019.1639412.

investment. On the other hand, all of the portion of income that is consumed will flow to producers and hence is potentially available to finance business spending (except for consumer purchases of imports – which are then available for investment by foreign producers).

Taxes, like saving, are a leakage created by injections such as investment and government spending that generate income. Neither taxes nor saving can finance spending at the aggregate level. They are leakages that must be created by financed spending. This logic is understood by some heterodox economists as it is applied to the saving leakage, but then they get "dazed and confused" when it comes to the leakage of taxes.

Portfolio preferences can affect interest rates and exchange rates. As Keynes insisted, this comes in the second step of the saving decision – not in the first step as in loanable funds theory. There is great fear that bond vigilantes might go on strike against government debt, causing interest rates to rise and exchange rates to fall. But the central bank of any sovereign currency issuing nation can peg any interest rate it wants, simply by announcing a target. No foolish vigilante is going to go against a central bank whose purse strings are unlimited – certainly not after they saw central banks willing to spend $4 trillion or more in the silly Quantitative Easing experiments.

Many MMTers follow Keynes in advocating a permanent ZIRP policy – what he called "euthanasia of the rentier" (he would eliminate any interest reward on risk-free liabilities, which includes short-term sovereign government debt). This is done by setting the policy rate at zero (overnight fed funds rate in the USA) and then limiting the issue of sovereign government liabilities to short-term bills (whose rate tracks the overnight rate). The simplest method is to allow the Fed to provide automatic overdrafts to the Treasury (foregoing altogether sales of bills). When the Treasury spends, the central bank simply provides an overdraft to the Treasury's deposit account and simultaneously credits the reserves of a private bank. Over the course of the year, net outstanding reserves will rise if there is a net spending surplus (what is called a budget deficit) or fall if there is a net spending deficit (what is called a budget surplus). This would eliminate government interest payments ("euthanize the rentier") – which is usually an inefficient form of spending (mostly a leakage – accumulated as savings domestically and abroad) that increases inequality.

Note that this is a policy proposal – not a description. This policy change is not at all necessary to achieve the distinguishing characteristics of currency sovereignty listed above: absence of a "budget constraint", impossibility of "running out of money", ability to make all payments as they come due, and setting interest rates. Even under current arrangements, sovereign currency issuers operate free from such financial constraints. But the proposal to eliminate treasury bills and bonds simplifies operational procedures, eliminates unnecessary government interest payments, and makes government spending operations much more transparent. It also eliminates an entire sector of the economy that has built up around the government bond market – for better and perhaps for worse. In my view, this is a policy worth considering although it is not at all a necessary precondition to reforming fiscal and monetary policy.

Conclusion

In this piece we have carefully defined what we mean by MMT. Comparison of the fundamental principles of MMT against what the critics claim MMT asserts will make it clear that the critics are either ignorant or dishonest. None of the critiques raised so far presents any challenges to MMT because they are not directed to MMT scholarship.

We have also summarized four alternative paths to MMT: history, logic, theory and practice. The most advanced and coherent study in all these areas leads inexorably to MMT.

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Author contact: wray@levy.org

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Initiating a parallel electronic currency in a eurocrisis country – why it would work

Trond Andresen [Norwegian University of Science and Technology]

A central tenet of MMT – which I agree with – is that a country absolutely needs to issue its own currency to have the necessary tools for macroeconomic control, full use of productive facilities and full employment.

But what can be done when the currency in circulation is issued by an institution above and outside the country? Examples include dollarised countries like Ecuador and El Salvador, and the eurozone countries. One of the hardest hit countries by the by now ten-year-old, debt-induced EU crisis is Greece. In several papers I and some colleagues have, since 2010, argued for the introduction of an electronic parallel (also called "complementary") national currency there. See Andresen 2012 and 2018, and Andresen and Parenteau, 2015.

The Greeks have, however, more or less ignored this idea, even if it briefly gained attention in the summer of 2015 when former minister of finance Yanis Varoufakis resigned after a late and futile exploration of such an option. This proposal could be implemented in any similarly crisis-hit country. Currently, the only people in power that have argued for something in this vein are Lega politicians in Italy headed by Matteo Salvini. They launched the "mini-bot" proposal – a small denomination bond that the treasury issues to pay arrears, which may then be used as a means of exchange and later to pay taxes. But since Salvini and Lega are now out of government due to the new alliance between the PD and the Five-Star Alliance, the probability of this happening in Italy in the near future has fallen.

Introduction: The insolvable debt crisis

An indebted eurozone government has to extract euros out of the non-government economy to service its debt, by taxing more than it spends. The foreign-indebted private sector also extracts euros, sending these to creditors. The only way to (theoretically) counter these two "bloodletting" flows from a domestic economy is to increase net exports to a level that surpasses the sum of these two outgoing flows. This is exceedingly difficult, especially after debt service burdens have increased on the real economy, and because of idle production capacity due to the crisis. The other "way out" is to sell off public property, which is unsustainable and economically destructive.

Debt could be partly written off and/or the debt service levels could be ameliorated, but to the degree the creditors refuse this, the domestic economy will be increasingly starved for euros. Firms and individuals are thus not left enough of the instrument for the conducting of regular economic activity. This again leads to lower government income due to reduced tax payments and larger social outlays. The crisis is also amplified by increasing pessimism among individuals and firms: to the degree they possess euros, they hold back in spending, hiring and investment – and/or they move their money out of the country. All this contributes to further pessimism. We have an unstable downward spiral.

Politically, both the EU elite and the elites in the crisis countries are strong supporters of the euro. There is also – even in the hardest-hit countries – a majority in the general populace in favour of sticking with the euro – mostly based on fear of what will happen if the country reverts to a national currency. The mainstream advice seems to be to just keep going with the euro and hope for an internal devaluation of wages and prices to enhance the crisis country's competitiveness so much that future net exports will enable it to service its debts. This is a painful and slow process for the population (at best lasting many years, if working at all). Furthermore, the outcome is doubtful, especially since many trading partners are trying the same recipe.

The parallel currency proposal

A way out could be to furnish both households and firms with an additional domestic countrywide means of exchange – circulating in parallel with the euro – so that the large amount of unemployed may get jobs, and firms' spare capacity may be utilised. A euro-debt crisis country has a large output gap, and such a gap could be much diminished without giving rise to significant inflation effects. Utilisation (and very fast activation) of this idle capacity (including unemployed workers) may be achieved by nationally issued "electronic (or 'digital') parallel money". We will use the abbreviation "EPM" from now on. A unit of this currency will also be called "EPM".

I will argue below that this will quickly reduce unemployment and enable people and firms to exchange goods and services. It will also increase confidence and reduce pessimism, put a brake on the downward spiral, and probably also enhance the circulation and net national acquisition of euros.

How does it work?

Transactions are done via mobile phone (also, to a lesser degree, via computer and an EPM debit card), and automatically received and accounted for on servers with ample capacity at the country's treasury (not central bank – more on this later). We assume a bank-like facility under the treasury, from now on termed the "Treasury Bank" or "TB". Such a mobile phone-based banking system may be implemented through one of the technically proven schemes already in successful operation in some developing countries (Hughes and Lonie, 2007), (Tagpay, 2018). There is no physical/paper EPM in circulation. The government (including local governments) have EPM accounts at the TB. These accounts are debited whenever the government pays wages or pensions, or buys goods and services. All citizens and domestic firms have cost-free accounts there too, also interested foreign entities (but we will expect EPM's to circulate only domestically in a first phase). The EPM's are created *ex nihilo*, "printed" by the TB.

The government pays employees, pensioners and suppliers both in EPM's and euros. The EPM/euro mix may be adjusted based on how the process develops. Taxes are also collected in a similar mix of the two currencies, *and such that each tax payer (business or individual) has to pay in the same proscribed mix*. The government-issued EPM will have some intrinsic value since it may be used by the public to settle tax obligations (as argued by MMT). One EPM corresponds to one euro when paying tax.

Employees and firms offering goods and services will gradually – as the scheme gets more popular – decide to accept a certain share of EPM's as payment, while the rest must still be in euros (more on the initial dynamics below). While the government pays wages and taxes in a government-decided mix of the two currencies, the mix in private sector transactions is decided freely by the involved parties, and will differ between trades. The government mix will necessarily have to be gradually and carefully adjusted with time and circumstances. Employers and employees may locally negotiate the share of wages being paid in EPM's, based on how things develop.

There is an additional positive effect of introducing EPM's: By enabling activation of idle labour and production capacity, exports increase. Thus, even if this extra activity is mediated (partly) with EPM's, this enhances the ability of the country to service its debt burden in euros. Also, circulating EPM's will enhance output for *domestic* consumption and investment. To some degree this will lead to import substitution, improving the balance of trade which is a good thing concerning the ability to service euro debt.

Another positive effect is political-psychological: general pessimism is reduced and confidence increases. This will decrease the liquidity preference of individuals and firms that possess euros but have been holding back in their spending. For a given amount of euro stock held by agents, the aggregate euro flow will increase, i.e. we get increased euro money velocity – we will get somewhat larger euro flows in addition to the new EPM flows.

The dynamics of the EPM initial phase

A basic albeit small initial confidence should be present because the public are informed that EPM may be used to pay (a share of) taxes. But the initial confidence in EPM will be very low, because of widespread popular distrust in politicians and authorities that over many years haven't been able to ameliorate the effects of the crisis, and because of hostile coverage in the financial press and alarms raised by domestic and foreign "experts", and from EU/ECB circles.

To discuss the probable initial dynamics of an EPM, it might be useful to define two entities, *"trust"* and *"need"* (Andresen, 2018, ch. 7). Even if trust is very low at the outset, need is very high due to mass unemployment and too low incomes for many employees and pensioners. In this situation people have the choice of trying out an EPM for purchases or let it accrue in their accounts. Let us discuss startup developments using some assumed figures: For every 100 euros received by pensioners and public employees, they now receive an additional 10 EPM. Note that at the outset, the *same* amount of euros are paid to recipients. Initially EPM will mostly accumulate in their accounts. But it cannot be used to pay taxes until taxes are due, so the only alternative to letting the EPM account grow, is to spend it.

This gives an increasing incentive for EPM recipients to pressure vendors to accept EPM in payments. And in a depressed economy, a shop which may be economically on the brink may choose to accept – say – 8 euros and 4 EPM instead of the 10 euros originally demanded for an item. This means that the probable initial refusals of EPM in payments will start to wane – some use of EPM should be expected because of the alternative of no sale is considered even worse seen from the vendor's position.

So *need* will ensure some initial EPM circulation, even if *trust* is low. With time, however, a positive feedback process will start working: individuals and firms observe that transactions with EPM's are increasingly occurring, this will increase trust, leading to more use and acceptance of EPM. This will also – as a result of firms accepting EPM in payment – in the next round influence wages in the private sector: firms will ask their employees to accept a share of EPM in their wages. And employees will then often get a choice between accepting this, or unemployment. So they accept such a mix. This again leads to firms becoming more willing to accept a share of EPM in payment.

The government (central, regional, local) has another channel to inject EPM into the economy in addition to payments to public employees and pensioners: it may award contracts and buy from the suppliers that are most willing to accept a reasonable euro/EPM mix. If one doesn't accept – say – a 90/10 euro/EPM mix, the contract or purchase goes to a more willing supplier. And this of course leads to successful suppliers pressuring their employees to accept a similar mix in their wages, again increasing use – and confidence.

With time and increased trust and transaction activity in EPM, the government's spending mix for wages, pensions and purchases may perhaps be adjusted slightly downwards on the euro side, but compensated by a larger increase in the EPM share. This frees up a euro flow that, for instance, may be used towards a reasonable euro share for social spending. Such spending will also decrease as unemployment falls.

Euro/EPM exchange rates

Assume that the government declares at the outset that the exchange rate EPM to euro ought to be unity, and that firms are asked not to set prices in EPM's high, but instead safeguard themselves in the startup phase by setting the initial EPM *share* of an item's price low. What the government recommends will of course not necessarily be followed by firms. But we should expect that firms (and individuals) that offer products or services where the dominant input factors are domestic, will be most willing to try a significant share of EPM's in what they accept as payment.

At the other end we have products that are imported, and the domestic input factors are subordinate: for Italy and Greece smartphones and petrol are examples. Here one can expect that only with time will such sellers start accepting EPM, and the share will never become high. But there will be a mechanism at work in the right direction also there: when EPM use has reached a reasonable and still growing level for other consumer items, for instance food (where domestic input factors are significant), import-based firms can negotiate a wage share being paid in EPM's and the rest in euros, hence allowing also such firms to accept a share of EPM's in the items they sell.

Regardless of possible government declarations about how the parallel currency ought to be valued, one should expect the EPM to never reach parity with the euro (after starting very low due to initial very low confidence). Floating the EPM versus the euro must be accepted; there is no point in trying to uphold an artificially favourable exchange rate and by this creating a black market. But the EPM will end up anchored not too far below the euro because one is allowed to pay a share of taxes with them – one EPM counting as one euro. Note also that EPM – as opposed to credit money issued by banks when lending – resembles high-powered

(central bank) money in one important and good sense: it cannot be lost, since it is issued by the treasury. This adds to confidence. Now to…

Some arguments against the EPM proposal

The first is: "Won't all injected EPM be used immediately to pay taxes?"

Well, for any tax payer (individual or firm) taxes will not be paid before they are due. And as long as the flow injected by government spending arrives earlier than the demanded similar size taxation flow back to the government, a supply of EPM will remain in the economy for some time. This EPM supply will either be used for payments, or holders with sit on them. Holders will then try to get them accepted for payments, as already argued. The time delay between injection and taxation may be made arbitrarily large by the government. And the EPM supply available for circulation is proportional to this time interval. It should probably be extra large at the outset, to "prime the pump" and increase spending incentives.

"Isn't EPM EU illegal?"

1. ***The ECB euro monopoly outlaws the printing of other bills.*** – But the EPM does not exist as physical currency – paper or coins, and will not be illegal for that reason (Pott, 2012).
2. ***Only the euro may be declared "legal tender".*** – But there is no need to declare EPM legal tender; any potential recipient of EPM can refuse to accept them in payment – as opposed to euros. As discussed above, EPM will be accepted sooner or later anyway, in increasing amounts due to economic need and spread of trust through contagion processes (ibid.)
3. ***Issued EPM should be considered debt, and won't issuance therefore count as public debt increase under Maastricht rules?*** – The EU definition of public debt encompasses an obligation of the debtor to pay back the amount owed in the future, in euros. But the government is not obliged to pay back circulating EPM (or *TCCs*, or *mini-bots* – see below). EPMs are simply extinguished when they are used to pay taxes, they are never redeemed in euros. By this, the circulating EPM supply is not debt in the sense of the Maastricht rules (Bossone et al, 2018). See also (Kaminska, 2019).
   One may of course object that EU and ECB circles will *insist* that EPM is illegal anyway, which some has already started doing (Kaminska, 2019). But immediate economic repercussions will not be probable, since the EPM-issuing government in that case will demand a legal process to consider the issue, and the EU/ECB can hardly refuse this. The crucial point is that a parallel electronic currency solution is something a national government can implement fast and unilaterally; there is no need for involvement or support from supranational organs. So, while the EU/ECB objects, the EPM is launched and circulation (and popularity) grows.

One might also argue that introducing an EPM does not solve the euro debt problem. To this I reply that without a parallel medium of exchange an economy is wholly dependent on euros to uphold domestic activity. This puts the country in a very weak position when negotiating forgiveness and/or lower interest rates and longer repayment times on existing debt. The existence of an EPM circuit changes the balance of power strongly in favour of the indebted country.

But what about richer agents moving their euros out of the country to avoid taxes or in fear of losses due to collapse of domestic banks? Yes, the problem of euro capital flight is not solved by introducing EPM, except that increased domestic economic confidence may after a while motivate many agents to repatriate their euros. Anyway, the issue of capital flight is there regardless of whether the EPM proposal is implemented or not, and must be addressed somehow. And it has more serious effects without an EPM system in operation.

Two other parallel currency proposals

In Italy, the *Fiscal Currency Group* has been working for several years to get politicians to understand the need for a parallel currency. They call the instrument *tax credit certificates (TCCs)* or "fiscal money" (Bossone et al., 2018). These are non-debt bonds in the sense that they only commit the government to reduce the future tax burden of their bearers by an amount equivalent to the nominal value of the bonds, two years after they have been issued. The purpose of the TCCs is the same as EPM, and embodies a similar MMT understanding of economics. The two-year duration is to force the bonds to circulate as a means of exchange, which is good. But this has the drawback that TCC units have different times to maturity. As a specific TCC approaches maturity, its value will increase. A need to estimate a market price for each TCC complicates the use of TCC as a means of exchange.

With the EPM the government-controlled delay between spending and taxation solves the forcing-to-circulate problem. EPM units do not mature, are therefore not unique and all have the same value. Furthermore, they may additionally be transacted in arbitrary amounts down to an "EPM cent", just as with euros. This opposed to a less convenient non-divisible bond instrument.

Perhaps the most well-known Italian proposal is Salvini/Lega's "mini-bots". These are also bonds, but with a weaker impact than the TCC and EPM, since they are only supposed to be issued by the government to pay arrears to creditors. But this instrument would also help since it may be used as a means of exchange. It may also be used to pay taxes and fits well with an MMT understanding.

But is this not only a trick to (catastrophically) leave the euro?

As mentioned above, the proposed scheme will give euro-indebted countries a much better position in their bargaining for partial debt relief or less heavy euro debt service burdens. The change in the balance of power resulting from such a system can already be detected in the alarmed reactions from pundits in the financial markets and the financial press against Salvini's recent proposal. Giugliani (2019) and Horowitz (2019) are representative for this, even if Giugliani consoles the readers that the mini-bot won't happen. The claim is that a parallel currency is just a trick for leaving the euro, the writers knowing that in countries like Italy and Greece the majority does not dare this. The bond markets are of course scared to be sidelined (which they will actually be to a large degree with a parallel currency). So they and their supporting pundits contribute to the alarmism.

Yes, a parallel currency enables a gradual and controlled transition (back) to a national currency, if that is wanted. But running a parallel currency circuit gives the national assembly in a crisis country the freedom to deliberate and make a transition back to a national currency

at any future time, and base it on experience with how the parallel currency and the economy have fared. A government can additionally pledge future circulation of euros indefinitely. This, and the gradual way EPM may be injected into an economy while euros will remain in unimpeded circulation, should enable a sober and panic-free public discussion of such a reform beforehand. A date for starting the gradual injection of EPM may be set and publicised in ample time, without creating much speculative or psychological turbulence. As opposed to today's alarmism about scenarios of reverting wholly and abruptly to a national currency – an alarmism which is very much stimulated by pundits and financial interests that wish to avoid such an outcome. A further argument to reassure skeptics is that one may at any time decide to gradually discontinue the EPM circuit and go back to 100% euros, if that is wanted.

Compare the above described careful and gradual process to the much discussed alternative and feared scenario with overnight abandoning of the euro – which will lead to panic and speculation beforehand, and an intense media hunt for the transition date – a date that should be kept secret but which will mercilessly be revealed. Such an abrupt break with the euro is considered – also among most of the EU-critical public – unrealistic and harmful, even if such fear is largely ungrounded.

More on the advantages of electronic (digital) money

There are great possibilities for better control of macroeconomies with electronic money, not only in the parallel application, but in general. The problem is not whether it would work – this has been demonstrated in many countries for years (Hughes and Lonie, 2007). The problem is to get public information and discussion, and – most important – implementations in euro-crisis countries. Doing this – for instance in Italy or Greece – is neither very expensive nor risky. Such a system could be bought off the shelf and be up and running in a few months, at very low cost (Tagpay, 2018).

Some may object that a government in a euro-crisis country doesn't need to issue its own parallel electronic currency. One could instead use one or several of a spectrum of "cryptocurrencies", from bitcoin to the announced Facebook variant, "Libra". But cryptocurrencies have two fundamental flaws:

1. They are not nationally issued, and a government can't create and inject more of them as needed into a national economy. Crypto is comparable to using gold and precious stones as an additional means of exchange and will not make a difference. If cryptocurrencies really could make a difference in a depressed economy, they should by now – after 10 years' crisis – circulate comprehensively. This is not the case.

2. Cryptocurrencies are tailored to avoid government control and taxation. Accounts and transactions are anonymous and therefore taxation is impossible or very difficult.

An appeal to the MMT community

The modern money theory community – which this author considers himself to belong to – is finally making some headway, both politically and in academia. They have achieved increasing acceptance of these main points:

- A country needs to issue its own currency.
- Taxes are not needed for a government's spending. A government also doesn't need to borrow to spend.
- A government issuing its own currency can always ensure employment of the entire population.

But the MMT community has until now not given much attention to what euro countries could do to get out of the crisis, except the advice: "revert to a national currency, overnight". But this is politically impossible. So they should promote the parallel currency proposals.

Additionally, they have hardly shown any interest in electronic (digital) money, and the strong advantages of such currencies. This should be remedied.

Furthermore, there are two positive but unrecognised side effects of issuing electronic money by a "Treasury Bank" ("TB") that the MMT community ought to be aware of:

1. The national central bank – which is bound up in the EU/ECB regulatory framework and mostly populated by personnel and upper management identifying with mainstream financial narratives – is sidelined. But it will still control the euro part of the monetary system – business as usual – thus keeping its much-lauded (and by law imposed) "independence". This ought to somewhat weaken the probable central bank resistance to a parallel currency scheme.

2. By placing the parallel currency directly under the treasury, one also shows the validity of MMT in practice. The government directly issues the money needed for spending, and drains (destroys) the necessary money through taxation. A TB is a thus a *demonstration project* for the principles and advantages of MMT, and a laboratory for gaining experience with MMT-based fiscal regulation.

As a final argument, there is a general worldwide growth in digital currencies, phasing out the use of bills and coins. It is now so strong that even (traditionally careful and conservative) central bankers are expressing interest in introducing direct digital money accounts at their central banks (Nicolaysen, 2017). Technologically-driven processes – a few other examples are the emergence of the Internet, digital audio and photo – are unstoppable. This makes it easier also for parallel digital currencies.

Conclusion

A parallel electronic currency will – with immediate effects (months) – ameliorate the strongly and persistently-lowered living standards for most people in crisis countries, which is the bleak and only future (lasting several additional years) that the EU and euro-crisis country governments have been able to come up with. By the proposed scheme it should be possible to activate the immense underused potential that the hard-hit eurozone countries have – unemployed or underemployed people – to give many a better life and the country a return to social stability.

The challenge for the economics community including MMT proponents – and the politicians that look to them for advice – is to leave behind the all too common unwillingness to think outside the box. As Keynes (1936, ch. 12), said:

> "Worldly wisdom teaches that it is better for reputation to fail conventionally than to succeed unconventionally."

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Author contact: trond.andresen@itk.ntnu.no

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An MMT perspective on macroeconomic policy space

Phil Armstrong [Southampton Solent University, UK]

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).

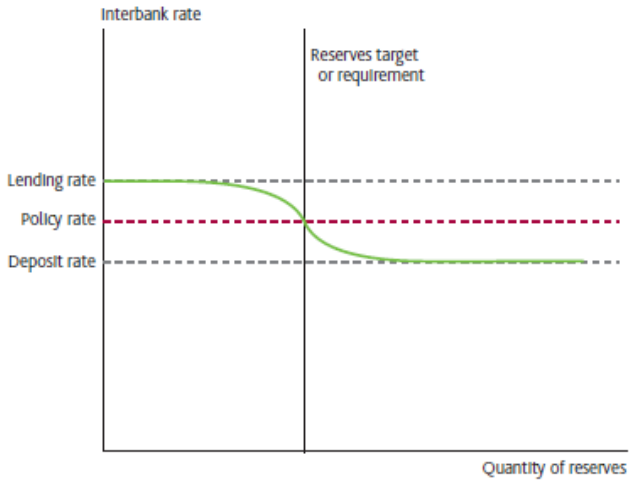
The new operational reality is different. The government spends first, and creates reserves, *ex nihilo*. It is never revenue-constrained as a currency-user might be. The "borrowing" operation which removes the reserves is voluntary in an operational sense. *The state has no need to borrow*. (Mosler, 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



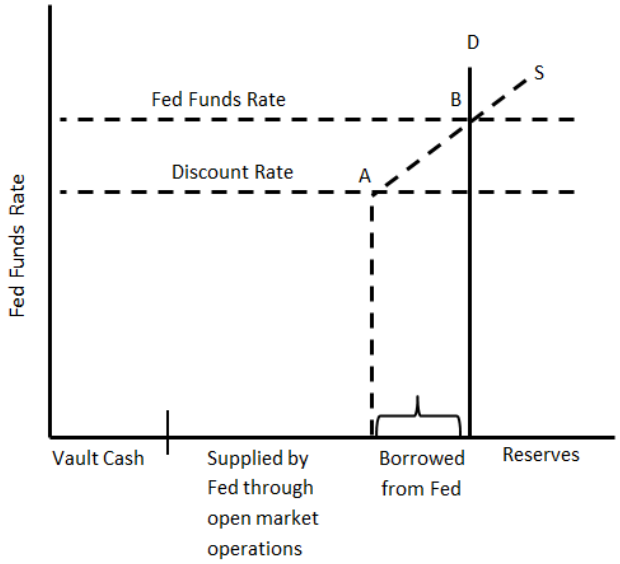
Source: The Bank of England, 2010, *QB* Q4, p. 295.

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.

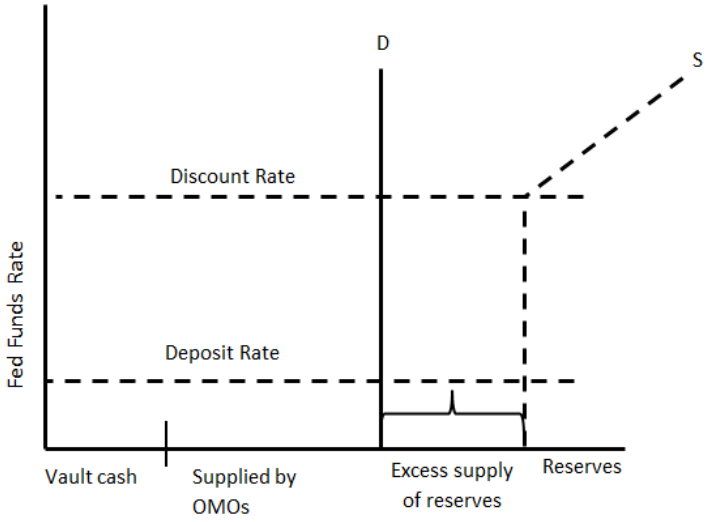
Figure 2 Supply and demand curves for reserves (system-wide shortage)



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.
>
> 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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Author contact: philarmstrong1883@gmail.com

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Monetary sovereignty is a spectrum: modern monetary theory and developing countries[1]

Bruno Bonizzi, Annina Kaltenbrunner and Jo Michell [University of Hertfordshire, UK; University of Leeds, UK; University of the West of England, UK]

Abstract
Critics of modern monetary theory (MMT) have alleged that its conclusions rely on the "exorbitant privilege" enjoyed by the US in issuing the global reserve currency, and thus do not apply to developing and emerging countries (DECs). MMT proponents deny this but have recently moderated earlier claims with the introduction of the idea of a "spectrum of monetary sovereignty" (Tankus, 2018; Tcherneva, 2016). In this paper, we assess claims made by MMT proponents regarding the application of MMT to the problems faced by DECs. We argue that MMT proposals fall short of providing a basis for effective development policy and that a broader conceptualisation of development strategy is required, one that acknowledges that external constraints are likely to bind over any plausible policy horizon and takes into account the constraints a hierarchical international monetary and financial system creates for DECs. We conclude that while neo-chartalism provides useful insights in considering monetary and legal arrangements, MMT adds little to the well-established heterodox and structuralist development economics literature.

JEL Codes E40, F41, F62, O11

Key words modern monetary theory, development, currency hierarchy, balance of payments

1. Introduction

The prominence achieved by modern monetary theory (MMT) is remarkable for a set of ideas originating with heterodox economics scholars. This success is arguably due to a particular confluence: the growing realisation that monetary policy in isolation cannot stabilise the economic system has provided an audience for ideas which have been promoted effectively through the use of blogs and social media.

While discussion has largely focused on the application of these ideas in major developed economies, particularly the US, proponents claim that MMT is a general theoretical framework that applies widely, and is therefore relevant for all contemporary economic systems. In contrast, critics have alleged that both MMT analysis and policy recommendations rely on the "exorbitant privilege" enjoyed by the US in issuing the global reserve currency, and thus do not apply to other nations – developing and emerging countries (DECs) in particular (e.g. Epstein, 2019). MMT proponents deny the allegation of limited applicability, but have recently moderated earlier claims with the introduction of the idea of a "spectrum of monetary sovereignty" (Tankus, 2018; Tcherneva, 2016), thus acknowledging that the position of states within the international trading, financial and monetary system influences the degree of policy autonomy available to governments.

DECs face widely acknowledged policy constraints relating to exchange rates, foreign exchange availability, and external and foreign-denominated debt obligations. MMT has a

[1] The authors would like to thank Frances Coppola, Santiago Gahn and Malcolm Sawyer for helpful comments. All errors are our own.

distinctive take on these issues, focusing in particular on the policy autonomy available to countries that issue their own currency and operate flexible exchange rates and are therefore, in the terminology of MMT, monetarily sovereign. MMT also claims to provide recommendations for countries facing externally imposed constraints on policy, which is framed as achieving or increasing monetary sovereignty. These include fostering domestic food and energy sufficiency through Employer of Last Resort (ELR) policies, ensuring low domestic interest rates, and fostering development banks.

In this paper, we consider the MMT approach to open economy macroeconomics, and the focus on monetary sovereignty in particular. We assess claims made by MMT proponents regarding the application of MMT to the problems faced by DECs, and discuss whether the MMT emphasis on achieving monetary sovereignty provides a sound basis for policy in those countries. We argue that, as defined by MMT, monetary sovereignty does not overcome the policy constraints faced by DECs, and that proposals for achieving monetary sovereignty fall short of providing a basis for effective development policy. A broader conceptualisation of development strategy is required, that acknowledges that external constraints are likely to bind over any plausible policy horizon and takes into account the constraints a hierarchical international monetary and financial system creates for DECs. We conclude that while neo-chartalism provides useful insights in considering monetary and legal arrangements, MMT adds little to the well-established heterodox and structuralist development economics literature.

2. MMT and the balance of payments

It is not straightforward to summarise "what MMT says" on any given topic. MMT itself is hard to characterise; it could reasonably be described as a school of economic thought, a group of scholars, or a political campaign. Much of what comprises MMT is also to be found in other heterodox traditions, Post-Keynesian economics in particular. The distinctive element of MMT is neo-chartalism: MMT places particular emphasis on the role of the government in issuing and enforcing the money of account, and the power this bestows. In the following summary of MMT views on open economy issues, we rely on writings and statements from core MMT authors and spokespersons, and draw on the recently published MMT textbook (Mitchell et al., 2019).

MMT analysis of open economy issues, particularly those faced by DECs, is relatively scant. In the recently published MMT textbook, a single chapter is devoted to the open economy, alongside short case studies on balance of payments constraints, currency crises and exchange rate regimes. The discussion of exchange rate determination is conventional: the "real price of a hamburger" purchasing power parity theory is contrasted with interest parity (the authors note that neither provides a sufficient account of how exchange rates are determined). A simple Keynesian open economy income-expenditure model is presented, in which net exports are a function of the real exchange rate. In the case studies, the authors argue that there is no evidence linking budget deficits to serious currency crises.

None of the above distinguishes MMT from conventional analysis. There is divergence, however, in MMT's characterisation of the balance of trade: "Imports ... represent a real benefit to residents. Exports represent a real cost ... It is obvious that the only motivation for a

nation to export, is to gain foreign currencies" (Mitchell et al. 2019, pp. 374–375).[2] The implicit assumption is that, in the case of a trade deficit, it is sufficient to consider only the immediate benefits of increased current consumption or accumulation of physical capital, while ignoring the implications of the accumulation of cross-border financial positions; Mitchell goes so far as to argue that cross-border liabilities do not need to be "paid back": "A current account deficit reflects the fact that a country is building up liabilities to the rest of the world. ... While it is commonly believed that these must eventually be paid back, this is obviously false." (Mitchell 2018a) This is a corollary of the assumption that current account deficits are always financed in the currency of the deficit country or that foreign currency can always be purchased, without adverse consequences, for the domestic currency:

> "A [current account deficit] can only occur if the foreign sector desires to accumulate financial (or other) assets denominated in the currency of issue of the country with the [current account deficit]. This desire leads the foreign country (whichever it is) to deprive their own citizens of the use of their own resources (goods and services) and net ship them to the country that has the [current account deficit], which, in turn, enjoys a net benefit (imports greater than exports). A [current account deficit] means that real benefits (imports) exceed real costs (exports) for the nation in question" (Mitchell, 2018a).

For MMT, current account deficits are therefore not the result of domestic consumption and investment exceeding productive capacity or capability, but a reflection of foreign demand for financial assets: "If the other guy has a desire to net save in your currency, he has to earn that currency by giving you goods and services" (Mosler, 2018). But the assumption that exports are priced in foreign currency, while the liabilities associated with current account deficits – resulting from payments for imports for example – are denominated in the currency of the deficit nation does not match the reality of the majority of the international trading and financial system. Even if countries can pay for their imports in domestic currency, this does not necessarily imply explicit demand for the currency, but simply the acceptance of that currency as means of settlement for a "real" transaction.

The MMT approach to the trade balance also downplays the aggregate demand, employment and distributional consequences of export demand. Demand for exports may generate jobs and income; the reason that MMT treats this as unimportant is that MMT claims that the employment rate is a pure policy variable: "the government *chooses* the unemployment rate. An elevated unemployment rate is *always* a political decision" (Mitchell, 2018a, emphasis in original). Export demand is thus regarded as unnecessary to maintain aggregate demand.

The MMT corollary is that action to reduce current account deficits is misplaced: "the mainstream view is that policy should be focused on eliminating [current account deficits]. This would be an unwise strategy" (Mitchell, 2010). Aside from the arguments above, the point seems to rest on the fact that action to reduce current account deficits is assumed to mean austerity: a loanable funds version of the twin deficits hypothesis regards a government deficit as causing insufficient national saving, as recently suggested by former president of Federal Reserve Bank of New York, Bill Dudley:

[2] "MMT emphasizes that in 'real' terms, imports are a benefit and exports are a cost. Floating the currency and relaxing capital controls allows a nation to enjoy more 'benefits' (imports) and fewer 'costs' (exports)" (Wray, 2014).

> "The U.S. trade balance depends primarily on how much the country as a whole spends, earns, saves and invests. Americans collectively spend more than their income, which means that the country's savings do not cover its investment needs. To make up the difference, the country must borrow from abroad … Together with higher caps on federal discretionary spending, the [Trump tax cuts] sharply increased the government budget deficit. This widened the gap between domestic saving and investment, requiring even greater foreign capital inflows – and a bigger trade deficit – to maintain balance" (Dudley, 2019).

While we concur on the incoherence of this loanable funds analysis, and that fiscal contraction is likely to be undesirable in many cases, this does not mean that current account deficits are never a problem and action should never be taken to address them, or that this action necessarily entails fiscal contraction. Further, current account positions do not tell us much about patterns of financing, and are not indicative of financing problems per se (Borio and Disyatat, 2011), but they may indicate problems with the structure of domestic aggregate demand, and, in many countries, potential exposures to foreign currency shortages.

3. Monetary sovereignty and the open economy

The views outlined above on the balance of payments are derived from the main distinctive contribution of MMT: the neo-Chartalist theory of money (Tcherneva, 2006). In this view there are, at worst, only limited monetary and financial constraints on current accounts and trade, because of the power of government over the domestic monetary system. Indeed, "monetary sovereignty" is the central framing concept of MMT: Tymoigne (2019) defines MMT as "a theoretical framework that aims at understanding how a monetarily sovereign government operates".

While there is some variance among definitions of monetary sovereignty provided by MMT authors, there are three main elements: 1) the government issues the national currency and imposes tax liabilities in that currency 2) the currency is fully floating and non-convertible,[3] and 3) the nation has no debt denominated in foreign currency.[4]

On the first, MMT contends that in stipulating the instrument in which taxes, fines and other obligations are to be discharged, a government can ensure the adoption of its chosen money of account. This neo-chartalist view, summarised as "money is a creature of the state" or "taxes drive money" is controversial, but space doesn't permit extensive discussion here (see e.g. Parguez and Seccareccia, 2000; Mehrling, 2000; Fields and Vernengo, 2013). The recently published MMT textbook claims that currency issuance and taxation are sufficient to ensure widespread domestic use and acceptance of that currency:

[3] Non-convertible in this context means that the government does not stand ready to convert their currency to any other, as is the case in fixed exchange rate regimes. The term is, confusingly, perhaps more commonly used to refer to the opposite case: currencies that are not freely traded and are thus confined to domestic transactions. See Mitchell (2009b) for discussion.

[4] "MMT describes and analyses the way in which 'fiat monetary systems' operate and the capacities that a government has within that system. It explains how monetarily sovereign states–that is, states that issue their own currency, float it on international markets and only issue liabilities in that currency–can never run out of money or become insolvent." (Fazi and Mitchell, 2019).

> "We can conclude that taxes drive money. The government first creates a money of account (such as the dollar), and then imposes tax obligations in that national money of account. *In all modern nations* this is sufficient to ensure that most debts, assets and prices, will be denominated in the national money of account" (Mitchell et. al, 2019, p. 137, emphasis added).

Specific examples are provided: "Currency-issuing nations... such as Turkey, and Argentina after it abandoned the currency board, ... created a currency for domestic use" (ibid. p. 325).

Elsewhere, however, Wray (2011) acknowledges that this will only hold for what he calls "the normal case – let us say, in the US or the UK or Japan":

> "These sovereign governments never find that they cannot buy something by issuing their own currency... the situation can be different in developing nations in which foreign currencies might be preferred for "private" transactions… To be sure, the population will want sufficient domestic currency to meet its tax liability, but the tax liability can be limited by tax avoidance and evasion. This will limit the government's ability to purchase output by making payments in its own currency" (Wray, 2011).

Wray gives the example of a country that collects one twelfth of output in tax revenue, and explains that this will enable the government, at a minimum, to "move one-twelfth of national output to the public sector through its spending of the domestic currency" (i.e. to run a balanced budget), but in practice the government is likely to be able to spend more (i.e. run a deficit). Little elaboration is provided on what determines how far beyond its tax base a government can spend, and where increases in the tax base reach a tipping point at which currency demand becomes effectively unlimited and thus full monetary sovereignty is achieved.

The second precondition for monetary sovereignty in MMT is a fully floating exchange rate regime. Tcherneva (2016) presents a six-level ranking of "modern monetary regimes"[5], in which "nonconvertible freely floating sovereign currency regimes (US, Japan, UK, Canada, most nations in the world)" (p. 19) are ranked at the top, with pegged floats, fixed exchange rates, currency boards, dollarisation and monetary unions offering consecutively lower degrees of monetary sovereignty.[6] Tcherneva argues that,

> "In fully sovereign monetary regimes... the economic possibilities before a nation with a freely floating nonconvertible national currency are constrained largely by political considerations and the availability of *real* resources to achieve those priorities, not by the availability of money" (Tcherneva, 2016, p. 20).

While the Mitchell et al. definition appears to claim that by imposing tax obligations in national currency, governments are able to determine the denomination of debts directly, it is more common to include, as a precondition for monetary sovereignty, an explicit stipulation against

[5] The "modern" in "modern monetary theory" modifies "monetary", not "theory": MMT is a theory of "modern monetary regimes", not a modern theory of money.
[6] Tcherneva's claim that "most nations in the world" operate a floating exchange rate echoes Wray's description of this as "the normal case"; in reality a minority of countries operate systems classified by the IMF as "floating" or "free floating" (IMF, 2018).

foreign-denominated debt: "a monetary sovereign government does not need foreigners for its finances… no sovereign government should be allowed (by its citizenry) to issue IOUs denominated in a foreign currency" (Tymoigne and Wray, 2013, pp. 39-40).[7]

MMT proponents argue that, for monetarily sovereign regimes, the government can, by issuing currency, directly purchase anything that is for sale in that currency, including all idle labour.[8] This is the reason that, as previously noted, the level of employment is treated as a policy variable:

> "…a nation that adopts its own floating currency can always afford to put unemployed domestic resources to work. Its government will issue liabilities denominated in its own currency and will service its debt in its own currency. Whether its debt is held internally or externally, it faces no insolvency risk" (Mitchell et al., 2019, p. 517)

When discussing the implementation of MMT policy proposals, MMT proponents often proceed on the assumption of full sovereignty, even for DECs: it is assumed that domestic currency will be accepted without limit by both the domestic population and by the foreign sector, either in direct exchange for goods and services or in foreign exchange transactions. In a similar vein, foreign currency borrowing is presented as a domestic policy choice, rather than an international structural constraint. As a result, both budget deficits and trade deficits are argued to be essentially riskless for "most nations in the world":

> "For a sovereign nation with a floating currency, a budget deficit is indefinitely sustainable. Such a government, logically, does not and cannot spend tax revenue. Even Turkey, with a budget deficit equal to 20 per cent or more of GDP, logically does not and cannot 'borrow' from the private sector or foreign sector. And, for such a country (even Turkey), both a budget deficit and a current account deficit are indefinitely sustainable" (Wray, 2006, pp. 117–118).

Much of the MMT literature therefore proceeds as if external constraints on policy and development are self-imposed (Vergnhanini and De Conti, 2017): currency pegs should simply be abandoned while foreign currency debt should be disallowed. Where the existence of binding constraints is acknowledged, it is presented in semantic terms: dependence on food imports is not a balance of payments constraint, it is the result of arbitrary lines drawn across space:

> "It is true that a currency depreciation can be damaging for a nation that is wholly dependent on imported food. Note that this is not a balance of payments constraint as it is normally considered. It is a real resource constraint: insufficient domestic production of food. This can arise from domestic policy choices that are biased against the production of food crops, or from the unequal distribution of resources across geographic space and

[7] Kaboub (2019a), gives a four-point definition of monetary sovereignty: (1) a country issues its own sovereign currency (2) taxes, fines and fees are imposed in that currency (3) the country only issues debt denominated in their own currency (4) the country operates flexible exchange rates.
[8] Strictly speaking, governments don't issue currency directly, treasury spending is financed by selling bonds to the central bank. MMT tends to ignore this by – controversially – consolidating the two institutions into a single entity when discussing government finance (see e.g. Lavoie, 2013).

> the somewhat arbitrary lines that have been drawn across space to delineate sovereign states" (Mitchell et al., 2019, p. 508).

The refusal, by some MMT authors, to acknowledge the existence of balance of payments constraints effectively dismisses the entire heterodox "balance of payments constrained growth" literature. This literature originates with Thirlwall's (1979) model, which demonstrates that the relative income elasticities of demand for imports and exports can impose limits to the rate of growth for a country,[9] because beyond a certain growth rate import demand will rise faster than export demand:[10]

> "There is nothing to distinguish so-called progressives who make this argument from the neo-liberals at the IMF who also make it. Perhaps a nuance is that progressives tend to focus on import-substitution policies to reduce the balance of payments constraint while the likes of the IMF focus on expanding export potential" (Mitchell, 2016).[11]

Although it is certainly the case that the breakdown of the Bretton Woods system and the shift to flexible exchange rates and open capital accounts for many countries alters, and in some cases loosens, balance of payments constraints, in a world dominated by dollar-denominated invoicing and funding, for many these remain very real.

Some MMT proponents have recently taken a more nuanced position on monetary sovereignty. While MMT has traditionally referred to a "hierarchy of money" (Bell, 2001; Tchverneva 2016), this refers to the relationship between state money, private bank money and "near moneys"; the significance of an international currency hierarchy has received less attention. It is therefore significant that Tankus (2018) introduces the terminology of a "spectrum of monetary sovereignty" in which "monetary sovereigns" coexist with "monetary subjects". He argues that monetary sovereignty is mainly determined by the size of a country's foreign currency debt. A similar position is found in Tymoigne and Wray (2013), who effectively describe an international currency hierarchy:

> "In the worst case, some countries have limited real and external financial resources… and their government currency might not be accepted externally… In the most favourable case, a country provides the international currency and the rest of the world desires to save the international reserve currency" (pp. 42-43).

Kaboub (2018; 2019a; 2019b) also concedes that DECs face limited monetary sovereignty, as a result of domestic resource constraints. He argues for domestic policy measures to reduce DECs dependency on food and energy imports, and transform their economies into

[9] This dismissal is not universal: Kaboub (2018) effectively gives an exposition of the balance of payments constrained growth model, but treats it as evidence that exports should be reduced.
[10] Given that Thirlwall (2012) credits Prebisch (1950; 1959) as the "true forerunner" (p. 319) of his balance of payments constrained model, this also amounts to a dismissal of the structuralist literature developed by Prebisch and his associates.
[11] Mitchell not only takes offence at the theory, but also at the habits of one of its key developers: "Nicholas Kaldor was one of those bourgeois socialist economists that Cambridge University seemed to nurture in the Post War period. He became a member of the House of Lords (Baron Kaldor of Newnham) in 1974, a curious position for a 'socialist' to accept. The joke that was around when I was a graduate student at Manchester University in the early 1980s was that he was so unfit and large that he had had a chair on the landing between floors of the Economics building between the tea room and his office so he could rest on the way back to his office after a nice English cup of tea" (Mitchell, 2016).

producers of high-value added industrial exports (these are discussed in more detail in the next section).

In contrast, Fazi and Mitchell appear to deny the Tankus / Kaboub "spectrum" view:

> "…the core MMT developers do not... consider a 'hierarchy of currencies' with the US dollar at the top, nor do they assume that non-dollar currencies have only limited currency sovereignty. All currency-issuing governments enjoy monetary sovereignty… A nation with limited access to real resources will remain materially poor. Sovereignty, though, means that it can use its currency capacity to ensure that all available resources are always fully employed" (Fazi and Mitchell, 2019).

MMT policy advice to developing countries likewise often downplays the binding external constraints faced by so-called monetarily sovereign countries. Kaboub's (2007) proposal for a job guarantee programme for Tunisia provides an example.[12] In discussing the open economy constraints, he argues that,

> "The mainstream argument claims that there is no international demand for 'soft currencies' like the TND or TND-denominated assets such as TND-denominated bonds issued by the Tunisian Government… According to Wray's analysis (2006), the real meaning of a trade deficit is that the rest of the world (ROW) wishes to net save TND-denominated assets, and that 'the real national cost of enjoying imports consists of the exports that must be delivered' (Wray 2006) ... If the Tunisian government adopts a flexible exchange rate regime and allows free convertibility of the TND in international exchange markets, then Tunisia can practically import anything it wants by simply offering to exchange TNDs for whatever other currency is required for that purchase. There will always be a demand for TNDs, albeit at a devalued exchange rate" (Kaboub, 2007, pp. 21-22, 24).

The underlying assumption here is that the government should be able and prepared to exchange domestic currency in FX markets at any exchange rate. However, as we discuss in the next section, FX markets in DECs are often thin and one-sided, resulting in large exchange rate movements. These can have severe consequences for inflation and external debt servicing, both of which are recognised by MMT proponents as policy constraints. The government could therefore find itself in the position of choosing whether to continue issuing domestic currency to buy necessary imports, or preventing the exchange rate from collapsing. Indeed, Wray and Tymoigne (2013) again provide more nuanced policy advice:

> "open economies are more sensitive to fluctuations in exchange rates and may desire to curb exchange-rate fluctuations by pegging a currency… MMT does recognize that some small open economies may benefit from dollarization given that almost none of their economic activity is driven by the domestic private sector and government spending" (p. 43).

[12] A job guarantee (or more specifically an "employer of last resort") proposal is the flagship policy of MMT. See Mosler (1997–98); Wray (1998); and Tcherneva (2012)

There is therefore some variation amongst MMT authors on questions such as whether resource-constrained countries should be considered to be monetarily sovereign, and even on the existence of an international currency hierarchy. Even those who acknowledge DECs' lower position in the monetary hierarchy, fail to acknowledge the severe structural constraints these countries' subordinate position in the international productive and financial system imposes on domestic policy making – in particular those aimed at productive structural transformation.

4. MMT, foreign exchange and finance for development

While some MMT authors deny the possibility of limited policy autonomy in the presence of a floating fiat currency (Caldentey and Vernengo, 2019), and therefore regard problems of development as resulting entirely from resource constraints, more nuanced contributions do acknowledge these limits. These are framed, in MMT terminology, as resulting from a lack of monetary sovereignty. In this section, we consider whether proposals to "increase monetary sovereignty" are sufficient to provide policy autonomy to DEC governments and overcome externally imposed constraints.

Kaboub (2018; 2019a; 2019b) argues that limited monetary sovereignty in DECs originates in their lower economic development, because external borrowing in foreign currency and fixed exchange rates are imposed by the need to pay for food, energy, and industrial goods imports. In this view, reclaiming full monetary sovereignty therefore depends on developing energy and food self-sufficiency, as well as focusing the economy away from intermediate good assembly manufacturing and commodity exports, which will in turn remove foreign currency borrowing and need for managed exchange rates. Kaboub argues that MMT policies can be used to achieve self-sufficiency in food and energy: a job-guarantee programme can be used to direct labour resources towards agriculture and energy production.

With the possible exception of the job guarantee, these proposals largely parallel the tradition of old development economics, and industrial policy, which Structuralist and Post-Keynesian economists have been advocating since the 1960s (e.g. Prebisch, 1949; Rodríguez 1981, Sunkel and Paz, 1970), yet largely stop short of discussing a central issue in that literature: how is industrialisation to be financed? In this literature, the limited policy autonomy of DECs (at least partly, as we argue below) stems not only from their lower productive capacity but also from their subordination in the global monetary and financial system. As Kaboub also notes, industrial transformations take time. During the transformation process, there is an ongoing need for foreign currency, to pay for those imports of technology and capital goods that are necessary to develop food, energy and manufacturing production. The crux of the matter is: how to solve the inescapable need for foreign currency to achieve this structural change, if one is to avoid foreign currency borrowing? Some countries may be able to achieve foreign currency financing at favourable terms, for example because of their geopolitical importance (see e.g. Yeung, 2017; Fischer, 2018). However, for the majority of countries this is unlikely to be an option. Developing countries have therefore broadly three other possibilities open to them.

The first is to pursue a neo-mercantilist export-led strategy, and generate the necessary foreign exchange through exports. However, this solution is potentially highly problematic. By definition, many developing countries are poorly developed, shallow economies which are largely import dependent, very often for basic foodstuffs, let alone more complex inputs for

domestic production. At the same time, and for the same reason, their export capacity is low and often dependent on volatile commodities and low-value added intermediate goods. Thus, aiming to reduce their imports in line with their export capacity will seriously undermine any development effort and domestic living standards. Moreover, the real exchange rate devaluation required to generate such a boost to domestic exports might be technically infeasible (due to a low price elasticity of exports), or politically impossible if it requires subdued wage growth and generates inflationary cost-push pressures. Finally, there is the global argument: not all countries can run current account surpluses. If, however, we have a situation - which characterises the current international configuration to a substantial extent - where countries with developed economic structures and strong currencies (see our argument later on) can run current account deficits and "live beyond their means", whereas DECs with weak currencies cannot and are thus bound to "live within their means", this raises obvious questions about equity.

A second set of solutions is to obtain foreign currency though the financial account, i.e. through "capital flows", which do not create foreign currency debt liabilities. This could be done either through long-term equity-like flows in the form of FDI or foreign investments in liquid domestic currency-denominated assets such as stocks and bonds. As argued by Kaltenbrunner and Painceira (2015), such investments continue to bear considerable risks and are therefore not a way of increasing monetary sovereignty. The resulting currency mismatch of these operations makes foreign investors very sensitive to expected exchange rate changes which can result in large and volatile asset price and exchange rate movements. This means that even in the case of domestic currency liabilities held by foreign investors, governments cannot neglect the exchange rate which limits their policy autonomy. Attracting FDI, as opposed to loans or portfolio flows, might have stabilising short-term implications, but, as Kaboub also notes, might encourage a race to the bottom as countries compete for foreign investments, as well as locking their productive structure firmly into a subordinate position. Moreover, FDI potentially creates future pressures on the balance of payments in the form of dividends and remittances.

Finally, DECs could rely on domestic financing to promote the structural change necessary to reduce the foreign exchange constraint and reliance on foreign (currency) borrowing. Tankus (2018) recommends the promotion of domestic credit through low interest rates and national development banks (he mentions the Brazilian National Development Bank, BNDES, as an example; a similar proposal is put forward by Rezende, 2015, for Brazil, although not explicitly in the context of achieving monetary sovereignty). This domestic financing would then be exchanged into foreign currency on the foreign exchange market to buy the necessary imports. To cover temporary import needs (e.g. for trade credit and short-term dollar financing), Tankus recommends the development of regional payment systems. While we are sympathetic to these suggestions, serious constraints remain which are largely related to DECs' subordinate position in an asymmetrically structured international monetary and financial system (e.g. Andrade and Prates, 2013; Kaltenbrunner, 2015; Bonizzi, 2017; Allami, 2018). Indeed, it is this hierarchic and asymmetric structure of the international monetary and financial system, we argue, which (in addition to the productive subordination highlighted by e.g. Kaboub, 2018 and Wray and Tymoigne, 2013) constrains attempts to achieve monetary sovereignty in DECs.

First, in addition to their foreign exchange constraint, many DECs face considerable domestic financing constraints: the private financial system is not prepared to provide low-cost, domestic currency financing. In a global economy, where private actors can decide between

holding different currencies, an inherent hierarchy emerges among them. Financial institutions will prefer currencies which best perform international money functions, currently led by the dollar. Other currencies, or assets denominated in those currencies (such as domestic bank loans), will have to compensate their inability to perform international monetary functions with higher returns (e.g. interest rates). Additionally, the domestic financial system simply might not be sufficiently institutionally capable of providing long-term "patient" financing for developmental, structural change in DECs. Conversely, as discussed in more detail below, private actors might be unwilling to borrow or hold domestic currency assets such as deposits, whose value is perceived to be excessively volatile. For all these reasons, long-term credit for development is simply not available in many DECs. MMT authors partly acknowledge this restriction and suggest the use of development banks and direct monetary financing by the central bank. We are sympathetic to these proposals, which could in some cases reduce the domestic financial infrastructural gap, increase the circulation of domestic currency and promote the development of credit markets in domestic currency. However, at least in the medium term, the need to pay for capital goods and technology in foreign currencies remains. Therefore the success of such solutions remains contingent on the ability of the local currency to be exchanged internationally to buy foreign currency.

This brings us to a second constraint to domestic financing of development in DECs, briefly mentioned in the previous section. In large developed economies deep and liquid foreign exchange markets and powerful banks allow agents to exchange domestic currency into foreign currency routinely. This is not as simple in DECs characterised by thinner foreign exchange markets and currencies lower down the international hierarchy. Foreign agents are less willing to exchange foreign into DEC currencies to finance foreign exchange shortfalls. Flexible exchange rate regimes are no cure for this problem. The "virtue" of flexible exchange rates seems to be predicated on the notion that the foreign exchange market will quickly find a new lower clearing price as demand for a currency falls, but in many DECs quantity constraints might prove tremendous: if foreigners and domestic agents want to exchange domestic currency for US dollars, it will take a mighty fall in the price of domestic currency to stimulate any actor to buy it. As Coppola (2018) notes,

> "the world is littered with examples of countries that have had to run down public sector FX reserves to provide dollar liquidity to local banks and corporations after they are effectively shut out of global markets by local currency depreciation… in an FX crisis, private sector debts become public sector external debt."

This is particularly the case if foreign currency is needed to finance risky, structural transformations in a global order predefined by developed countries as early movers. However, it might even be problematic in the case of temporary current account deficits due to changing international food and energy prices. Indeed, no country in this world is entirely energy and food sufficient, which means except the US (which can buy for most of its imports in its domestic currency) every country in the world is at least temporarily foreign exchange constrained. This is not a problem for developed countries with deep and liquid foreign exchange markets, whose currencies sit on the top of the international currency hierarchy. It is, however, a problem for DECs characterised by monetary and financial subordination.

Finally, in the extreme case, DECs' monetary subordination might not only mean that foreign nationals refuse to accept the domestic currency, but even domestic actors might substitute the domestic currency for a foreign currency, at least for some functions. Historically this has

been observed particularly in the case where domestic agents hold their wealth in a foreign currency (Argentina is a good example). This, in turn, seriously undermines the ability of the domestic banking system to provide domestic currency financing because domestic currency loans are frequently transformed into foreign currency deposits, which creates destabilising currency mismatches in the banks' balance sheets. Thus, any domestic currency financing - at least in the presence of low levels of monetary sovereignty – would have to be complemented by domestic foreign exchange regulations which forbid the use of a foreign currency in the domestic economy (which have indeed existed in Brazil for a long time) and capital controls to avoid flight into a foreign currency.

5. Conclusion

In the terminology of MMT, a monetarily sovereign government is one for which there is no risk of technical default on its debt; "monetary sovereignty" is thus a synonym for "macroeconomic policy autonomy". Historically, MMT has largely focused on how to implement policy in a situation of full policy autonomy. The limits to that assumption for many DECs are acknowledged by recent contributions noting that "monetary sovereignty is a spectrum". But this is just another way of saying that the policy space available to governments varies, and that DECs face binding external constraints on policy; this is hardly a novel observation.

What matters, instead, for DECs is how to implement policy under conditions of limited autonomy, and the measures that can be taken to increase the degree of policy autonomy available. On these, the MMT literature does not make a substantial contribution. Moreover, the contributions that do exist do not, in our view, sufficiently acknowledge the structural constraints imposed by a hierarchical international monetary and financial system on successful structural transformation.

Firstly, the threefold criteria identified by MMT – the currency issuer imposes means of settlement of tax obligations, operates flexible exchange rates, and has no foreign currency debt – are insufficient to achieve policy autonomy (see also Caldentey and Vernengo (2019) for a similar argument). Even if these criteria are met, nations may still face foreign exchange shortages. In particular, we showed that the MMT assumptions about the willingness of the foreign sector to hold domestic currency, or of currency devaluation to act as an equilibrating mechanism are highly problematic in the case of DECs. DECs face a hierarchical world economy; they remain structurally subordinated in global production chains, reliant on volatile commodity exports, and import dependent for food and energy. Foreign exchange markets are not sufficiently developed to ensure liquidity and are also embedded in a hierarchical international system where the dollar continues to dominate invoicing and funding. In this context, currency devaluations can be prohibitively costly. An argument could be made that the causality between monetary sovereignty and exchange rate flexibility is the reverse: developed countries, with deep financial markets and well developed monetary and financial markets and institutions, whose currency is widely used and traded, can safely implement floating exchange rate regimes; others have no choice but to operate some form of managed exchange rate.[13]

[13] This has also been acknowledged in a large literature known as "fear of floating" (e.g. Calvo & Reinhart, 2000; McKinnon and Schnabl, 2004).

Secondly, while many of the proposals made by MMT proponents aimed at increasing the policy autonomy of DEC governments, such as increasing self-sufficiency in food and energy and increasing capacity for domestic credit expansion, are sensible, they are already well-established, and more thoroughly explored, in the structuralist heterodox development economics literature. Where MMT diverges from this literature is in advocating monetisation of deficits and implementation of job guarantee schemes.

The efficacy of direct monetary financing is ultimately dependent on the willingness of both the domestic private sector and the foreign sector to hold domestic currency; as already noted, the sanguine assumptions made by MMT proponents about such demand are questionable in the case of DECs. Direct monetary financing is unlikely to be appropriate for funding long-term capital investment, while domestic financial institutions might not have the capacity to implement such a policy. Advocating deficit monetisation under conditions of sustained current account deficits, exchange rate volatility and potential capital flight is at best misguided and at worst irresponsible. The recent experience of Argentina – despite being identified by Mitchell et al. as a "currency issuing nation" – is a case in point (see Bortz and Zeolla, 2018).

Successful development requires a combination of strategies. Greater reliance on domestic financing as part of industrial policy is likely to play a role, although this will require careful consideration of the appropriate institutional forms. Recent MMT contributions advocate the promotion of domestic credit through low interest rates and national development banks (Tankus, 2018; Liang, forthcoming). Such strategies will however need to be combined with some degree of controlled foreign borrowing, alongside strategic trade openness – and a more sophisticated understanding of the role of trade in development than "exports are a cost, imports are a benefit".[14] Domestic regulations on the use of foreign currencies and a managed financial account are likely to be necessary in order to avoid excessive foreign currency debt and instability arising from volatile capital flows and domestic currency substitution, which could derail any development strategy.

This remains, however, nothing more than a starting point for a successful development strategy, where foreign exchange remains a constraint. This is so, because DECs face a world economy connected by an asymmetric and hierarchical international monetary and financial system. As long as one, or indeed a few, core currencies continue to dominate the international monetary system for invoicing and funding, for many DECs the problem of achieving full policy autonomy will remain extremely challenging. While it is possible for some DECs to improve their relative position and reduce the extent of their current subordination, it is likely that monetary hierarchies will remain for the foreseeable future. To overcome this global power structure and achieve true policy autonomy for all nations will require major reform of international systems of governance and cooperation as well as global and regional financial and monetary systems. It is not yet clear whether MMT acknowledges this.

[14] "If we are to advance the economic interests of the bulk of the citizenry in a decent and humane fashion, we must promote a full employment policy domestically, and couple this with a flexible exchange rate regime internationally. With these institutions in place (on a global scale), exports become a cost and imports a benefit, and the conditions under which free trade is beneficial will have been established" (Bell and Henry, 2003, p. 24).

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Author contact: Jo.Michell@uwe.ac.uk, A.Kaltenbrunner@leeds.ac.uk, b.bonizzi@herts.ac.uk

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Are modern monetary theory's lies "plausible lies"?

David Colander [Middlebury College, Vermont, USA]

> "It's the art of statesmanship to tell lies but they must be 'plausible lies'" – J.M. Keynes.

Key words functional finance, MMT, trust, monetary policy, fiscal policy, credit theory of money

MMT has done what few heterodox economic theories have done; it has become part of the mainstream conversation. It is talked about by pundits and politicians, which means that standard macro economists have felt compelled to respond to its arguments. That's an enormous accomplishment that will, I hope, lead to improvements in macroeconomic theory and policy. Its creators deserve to be congratulated. But I am not too hopeful. MMT is more of a marketing success than an intellectual success that has caused standard economists to rethink their theory or policy views, and I suspect that, once MMT's political usefulness to progressive politicians diminishes, standard economists will push MMT back into the heterodox wilderness, and settle back into their unwarranted complacency.

Since MMT is not a precisely spelled out formal theory, but more a narrative about the nature and development of money and government finance, let me start by summarizing how my interpretation of it used in this article. What I mean by MMT are the set of shared ideas about monetary and fiscal policy attributed to economists such as Randall Wray (2014) and Stephanie Kelton (2001). The ideas that I will focus my discussion on can be summarized in three distinct and separable propositions.

- Idea 1: The way to understand the role of money in the economy is to think of money first as credit – money is an abstract accounting system of interpersonal obligations. Physical money plays only a secondary role in that accounting system. MMT holds that in the historical development of money, abstract money credit preceded the development of physical money rather than physical money preceding credit, as it does in most standard histories of money.
- Idea 2: Government spending, taxing, and monetary policy should be thought of in Abba Lerner's functional finance framework, in which the policies are judged by their effects on the economy, rather than in a sound finance framework in which government faces a budget constraint, and taxes (either current or future with bond finance) are thought of as paying for government spending.
- Idea 3: The above two ideas are a useful guide to real world U. S. policy thinking. They emphasize that economist's focus on the need for balanced budgets is misguided and that the supposed financing constraints that require government to pay for new programs with taxes or debt are largely illusory.[1]

I largely agree with the first two but largely disagree with the third.

[1] In their more theoretical discussions, they do a reasonable job of explaining the assumptions on which these conclusions are based, but when they allow politicians to use MMT as justification for arguments without the caveats, they allow MMT to be associated with those policy ideas.

MMT's story of money

As a descriptive narrative theory of money, MMT does a much better job than the standard textbook economic narrative in conveying a sense of the development of money and the role that money and credit play in our economy. Its ideas, in my view, are not especially heterodox, and are consistent with the broad-based historical macroeconomic monetary cannon as captured in the work of monetary economists such as Thornton, Bagehot, Keynes, Yeager, and Goodhart.[2] That said, I agree that standard modern economists, because of their formal modeling obsession, have lost sight of the broader narratives that necessarily accompany a model, and determine how the model is interpreted.

A central MMT complaint about standard monetary theory is that standard economics doesn't tell a good story about the introduction of money into the economy. In the standard story, money is central to exchange; physical money makes markets possible. In the MMT story, physical money is simply part of a broader accounting system in which credit plays a central role in making markets possible. Thus, according to MMT advocates, money is inherently involved with credit, and in much of their writing, following Georg Knapp (1924) and Abba Lerner (1947), they treat money as inherently involved with state credit.

I find credit theories of money satisfying and insightful. They offer a conception of money that better fits my sense of money as a complex social convention that is more deeply entangled with the real economy than the standard conceptions of money allow. In my view the most likely reason it hasn't been adopted by the profession is because recognizing this aspect of money undermines standard economist's belief in the usefulness of formal mathematical models of a monetary economy as a direct policy guide. It is precisely that entanglement that makes money not fit into formal theories – money's very essence is connected to the social contract that holds society together. Technical models only provide general background guidance, not direct policy guidance. In a monetary economy real world policy guidance does not follow from technical economic models, but rather from models which have social relationships embedded in them, or which are somehow modified to take social contract issues into account.

Money as a creature of the society

While I agree with the credit theory of monies, I interpret the underlying theory slightly differently than do most MMT advocates. Whereas they emphasize Georg Knapp's view that portrays money as a creature of the state, I emphasize the views of Henry Macleod (1889), which sees money as a creature of society, rather than just as a creature of the state.[3] Money involves credit, but it need not be state credit. The analysis of money is, in principle, separable from the analysis of government finance, and connecting the two can lead to misleading policy implications.

[2] As its advocates make clear, MMT is not a new theory; they are reviving earlier credit theories of money by economics such as Georg Knapp. MMT is grounded in earlier economic ideas that have, to varying degrees, been accepted by broad-based mainstream economists, such as Charles Goodhart. So, while MMT provides a much richer monetary theory than can be found in economists' formal standard models, I don't see MMT so much as a paradigm shift, but rather as a welcome refocusing within the broad-based mainstream of a narrative that has been almost forgotten by technically focused IS/LM and DSGE macroeconomists.

[3] Neil Skaggs (1998) has emphasized the importance Macleod's work and has expanded on Macleod's credit theory of money. Randy Wray's theoretical discussions of MMT foundations of money are often nuanced, and, in some of his work he specifically references Geoffrey Ingham and David Graeber who go beyond the state theory of money.

The essence of credit theories of money involves seeing relations and trust among people as central to any theory of money. Money is best understood as part of an accounting system under which individuals keep track of their socially determined obligations to others. Goods can be traded for other goods without physical money as long as the individuals share an accounting system. The accounting system provides the foundation for the stability of society, and can be thought of as important part of its underlying operating system.

In pre-capitalist traditional societies, most obligations were not monetized, but were built into the fabric of society so little monetary exchange was needed. For example, serfs were allowed to use the land of the noble but in turn had to provide the noble with a portion of the harvest. These obligations were known and did not need any exchange of a physical money. Similarly, if someone wanted to borrow a cup of sugar with the expectation that the favor would be returned, the agents could simply keep the background accounting in their mind. Taxes were monetized and are the part of this system of obligations that MMT advocates focus on in their story of the development of money. According to MMT advocates by allowing debt of the state to be used in the payment of taxes the government created accounting money. It follows that money is a creature of the state.

My alternative spin on this history is that while that may be historically what happened, the state is not necessarily involved with the essence of money. Any large agent with outstanding debt, for example the church, who was willing to accept payment of that debt in fulfillment of an obligation to it, could have created an alternative credit money. Money is a creature of society, not of the state. Accounting systems involve much more than just government, and, in my view, evolved from the bottom up along the lines proposed by Martin Shubik (Shubik and Smith, 2016), not from the state down. So, within this broader "money as a creature of society" narrative, one thinks of a society as a set of obligations that is held together by explicit and implicit accounting systems that keep track of, and balance, the obligations of the agents to one another and to collective organizations that comprise society.

As Marx pointed out, capitalist market economies changed the nature of social relationships and they did so by changing the accounting system, and making it less focused on a set of in-kind obligations and more focused on obligations measured in monetary values. This was accomplished by formalizing the accounting system with technical advances such as double entry bookkeeping. These advances allowed the trading and complexification of these obligations.[4] Again, these trades could be done without the exchange of physical money – within an accounting system, when you receive something from somebody, or take on an obligation, you can pay for it by debiting your account. No physical money need change hands for the trade to take place – the accounting system takes care of it all. MMT argues that the important aspects of money developed from the accounting systems and that physical money, such as gold, was simply the physical representation of an abstract accounting credit. It follows that it is the trust in the accounting system, not the inherent properties of the physical money, that gives money its value.

[4] Money makes material relations central. Other accounting systems are possible. For example, in the Middle Ages, the church had an accounting system – and people earned credits toward entrance to heaven by following church doctrines. Since the value of eternal salvation overwhelmed material goods what might be called spiritual accounting dominated material accounting. Once the church started selling indulgencies, the accounting system changed, allowing material relationships to expand in importance since one could buy entrance to heaven.

The development and role of physical money

An informal accounting system had severe limitations for both large and small items. For large items it needed to be formalized, which it was with various advances in bookkeeping and accounting. It was such developments that allowed capitalism to develop. For small items, tracking transactions in ledgers was cumbersome, and thus a simplification was developed. Societies created a physical representation of abstract credits or debits. What most people think of as money – cash – can be understood as an accounting simplification. Rather than keeping the credits and debits in a ledger, the accounting system was modified so that is had an analog computational system that eliminated the need to keep precise accounting records in the ledgers. To do that, it created a physical manifestation of a credit – say a dollar bill, a cigarette, or an ounce of gold. These could be transferred or held as stores of value. When that physical manifestation was transferred from one to another in payment for a good or fulfillment of an obligations, it was the equivalent to a debit and credit entry on the books of the buyer and seller. When paying with cash, the accounting ledgers are automatically adjusted through the holding of cash, not through any entries on the ledgers. Thus, the development of a physical money allowed a reduction of accounting costs.[5] So what we think of as cash is best thought as "analog accounting money".

I went through this historical discussion to emphasize that thinking of money as credit and part of the accounting system is not just a minor change to economists' narrative. It means that the standard formal macro models that assume an exogenous demand for money, or that treat money as a commodity, aren't capturing the central role of money in the economy. In the credit theory of money the monetary accounting system is seen as part of the underlying superstructure of the economy, and thus, it requires trusting that whomever oversees that monetary accounting system will not take advantage of their control of that accounting system to benefit themselves or their friends. If people lose faith in the fairness of that monetary system, they lose faith in the economy, and the economy will break down.

Separating monetary policy from government spending policy

MMT's emphasis of the connection between money and state credit allows it to draw policy implications about government finance. I see the connection as misleading. In creating a system in which people have trust in the monetary system, they may well design the system to keep these state financing issues and monetary system issues separate, not because the issues have to be separate, but because in order to get the social contract agreed to, they were chosen to be kept separate. This separation is part of the operating system providing trust in the monetary system. The monetary authority is restricted from paying for government goods by direct bank financing because the temptation to do so is seen as too enticing for a government to resist, and its use as a direct financing method would decrease the needed trust in the monetary system.

Not making a connection between money and state credit, but rather making the connection to general societal credit not limited to the state, also allows MMT's insights to be better used in guiding our thinking about private monies of the future. Such monies are on the horizon because of computational advances in information processing and backroom accounting. Digital monies are exponentially increasing in importance, and it is likely that accounting for

[5] My interpretation of the MMT argument against other histories of money is that they get the focus wrong. They give far too much focus to this "analog accounting money" and too little to the accounting system of which it was a part.

purchases can be automated at close to zero marginal cost. This means that the real-world monetary system is becoming more like the theoretical accounting system underlying the credit theory of money. Specifically, with the developments of digital monies, private cryptocurrencies, and blockchain ledger accounting, private firms, such as Facebook's Libra, will likely challenge state control of aspects of money in the future.[6] Since there are large rents to be made in the seignorage associated with issuance of money, governments need economist's guidance on how these new private monies should be dealt with, and MMT offers important insights into these issues.

Our current monetary system will be further challenged by the ongoing globalization of the world economy in which multiple currencies are used. As international clearing systems become automated, we can expect disruptions in multi-currency transactions technology. In a globalized economy, with advanced computational and information processing tools, we can expect competition among state and private monies and units of account in ways that we have not seen before. MMT's narrative about money as credit can help us better understand these developments and can help guide the design of policy to prevent private capture of the rents and seignorage that will accompany those changes. Unfortunately, currently MMT is not being used to analyze such problems. Instead, by connecting money only to the state, MMT suggests that it has no insight into these private money developments.

MMT and functional finance

A second MMT idea is that the functional finance ideas of Abba Lerner should be given more focus in thinking about policy. I fully agree that, if one is talking about stabilization theory, functional finance provides important theoretical insights into the technical theory of how government finance affects aggregate spending. But, as is the case with the credit theory of money, they are insights that the best of standard macroeconomists have already incorporated into their economic thinking about policy. While economists (Keynes included) found functional finance strange when Lerner first presented it in the 1940s they quickly came around to accept its logic in guiding thinking about the theoretical usefulness of countercyclical policy. As they did so the important insights of functional finance become part of the standard broad-based economic cannon.

Where I have problems with MMT's focus on functional finance is when it is extended to real-world government monetary and fiscal policy. One reason this is problematic is because there is nothing in Lerner's insights about the need for government stabilization policy that require the stabilization to take place by deficit financing. To see this let us consider Lerner's implicit model, which is a highly simplified optimal control theory model of an economy with spending coordination failures. Specifically, in the model agent's individual decisions about spending affect aggregate spending, but agents don't take that effect on aggregate spending into account in their individual decision to spend. Optimally, they would take it into account. This means that in Lerner's model aggregate spending can be too high or too low, and a policy requiring all agents to take it into account is needed.

[6] The US is unlikely to see these changes soon, but most countries having fewer financing options than does the US government, will.

An alternative to fiscal policy stabilization

By connecting Lerner's policy for dampening spending fluctuations to government spending policy, and suggesting it had relevance for the real-world policy, Lerner reduced some of functional finance's theoretical usefulness. The best way to see this is to recognize that fiscal and monetary policies are not the only policies that could achieve stabilization. In theory, the same aggregate results could have been achieved without using fiscal policy at all. Moreover, within Lerner's implicit model fiscal policy would not even be the optimal way to deal with these fluctuations if one accepted standard economic cost benefit analysis. The problem is that functional finance places the entire onus of adjusting spending on the government, when in Lerner's model it would be more efficient if the spending adjustment were distributed widely among all agents so that those with the lowest cost of adjusting their spending were incentivized to do the adjustment.

Such a general policy solution could be achieved with what might be called a "functional spending policy" rather than a functional finance policy. A functional spending policy would involve government passing a law requiring all agents in the economy to coordinate their spending decisions in a way that led to the desirable level of aggregate spending. Specifically, say the government determined that aggregate spending was too low. Each agent would be required to increase their spending levels by his share of the needed adjustment, or alternatively to pay someone else to increase their spending by the shortfall. For example, if actual output was 5% below desired output, an individual whose spending base was $4,000 last period might be required to spend $4,200 this period. If that agent continued to spend $4,000 he would be required to buy $200 of spending certificates from someone who spent $200 more than his spending base.

The price of those spending certificates could be positive or negative, depending on the supply and demand for spending above or below the desired spending level. If desired spending equaled actual spending in the absence of the program, then, with the program, the price of these spending certificates would be zero. If aggregate spending were "too high" the price of spending certificates would be positive, and agents would be discouraged from spending. For example, an agent with $200 more in spending than his base might buy a $200 spending certificate for $4 from an agent who was $200 below his base. If aggregate spending was "too low" then the price of spending certificates would be negative, and people would be encouraged to spend. Assuming all the usual wild assumptions about markets working, this "functional spending solution" would keep spending at its ideal level by spreading the adjustment to all actors in the economy, rather than have government do all the adjustment through its fiscal policies.

I am not arguing that such a "solution" makes real-world policy sense. But the reasons it may not make sense are practical and social, not theoretical. The implicit models underlying it are mechanical, real world markets and policy are organic and evolving. Mechanical solutions do not easily translate to organic realities. They might be relevant but, to make that decision requires detailed institutional knowledge of the organic reality, that goes far beyond theoretical understanding. At best, technical economic theory provides some background insights that actual policy makers should take into account. It does not provide direct policy guidance.

It follows that one can hold the position that functional finance provides important theoretical insights (a position I hold), but as an actual real-world policy is highly limited in its usefulness (a position I also hold) The reason is that functional finance, like the above described functional spending policy, has serious practical problems of implementation.

I am also not arguing that the distributional effects of this spending certificate market policy are preferable to the distributional effects of an increase in government spending. Functional finance abstracts from such distributional issues. My point is that the real-world policy makers debate about fiscal policy is generally less concerned with aggregate spending, which is the focus of functional finance, and more about the distribution of spending, which is not the focus of functional finance. For example, functional finance is neutral on whether an expansion in aggregate spending is generated by increased government spending or by decreased taxes. If aggregate spending is considered too low, there is no functional finance reason why it can't be increased by cutting taxes. If MMT's theoretical insights had been presented as a justification for cutting taxes, rather than as a method for paying for new programs, I suspect that progressives would have been far less supportive of it, while supply siders would sign on.

Good fiscal policy should be both sound and functional

The above discussions of MMT's credit theory of money and functional finance ideas, while critical, are generally supportive of MMT. It is when one moves to MMT's implications for real-world policy where I have my strongest disagreements with MMT advocates. In my view MMT's usefulness, like almost all of economic theory's usefulness, is in providing abstract theoretical insights into policy design and theoretical modeling of the economy, not in providing useful advice directly applicable for policy.[7] The reason why is that the technical models cannot be easily translated into the real world. The theoretical insights are overwhelmed by political and institutional forces. Economist's formal models are mechanistic; real-world events are organic.

Consider functional finance; it assumes a well-functioning government exists whose goal is to maximize a known and shared social welfare function. It assumes that government can easily change its spending and taxing policies, and that the only negative consequence of government deficits, or of expansionary monetary policy, is inflation as measured by the CPI. That's not the real world I know. The real world I know has a government that is dysfunctional in many ways. Control of this government fluctuates among competing groups, who have different visions of the goals of economic policy. The decisions of whomever is currently in control are often governed by political considerations and involve significant private rent seeking that has little to do with the common good. Policies designed to be implemented by a beneficent well-functioning government are unlikely to work in the real world where politics, not economic theory, drive policy.

[7] Let me be clear. MMT is not alone in this unacceptable blending of theory and policy. It is a central characteristic of modern standard economics which has lost its methodological bearings (Colander and Freedman, 2019). My position is that as a practical matter the two can't be blended, and as Nassau Senior, the first Classical economist to discuss economic methodology, argued long ago a theoretical economists' "conclusions, whatever be their generality and their truth, do not authorize him in adding a single syllable of advice. That privilege belongs to the writer or the statesman who has considered all the causes which may promote or impede the general welfare of those whom he addresses, not to the theorist who has considered only one." (Senior, 1836)

Functional finance tells us that technically, in a model in which government can easily enact policy, and can easily change spending and taxes, assuming we do not have inflation, that there is no need to worry about government deficits; we should print money to finance new socially beneficial government programs. But is it realistic in the real world?

On the basis of such a model, does one really want to advise our real-world government that it doesn't have to worry about paying for its new programs? If progressives do not need to worry about paying for spending, then a similar argument exists for Tea Party advocates who want to lower taxes. So, if MMT insights on credit money and functional finance are easily translated into real world policy, why not just lower taxes to zero and have government spend on whatever the party in power wants?

The other MMT insight--the credit theory of money--suggests that policy advice should come from a much more nuanced model. Its insight is that money is part of the foundation of the economy, and that money is based on trust. In our politically divisive times, trust in government is hard to come by. An important goal of any policy should be to encourage people to trust the government and believe that it will make reasonable decisions on spending and taxes. What effect various policies will have on trust is not something that economists have any expertise in. I interpret the Classical prescription for sound finance as reflecting judgements about these trust issues, not about technical economic models. Sound finance policy and restrictions on financing spending by monetary expansion force groups with competing visions of appropriate policy to compromise and find a middle way.

Thus, I interpret sound finance and sound money policies not as theoretically determined policies, but rather as politically determined compromise policies that provide checks and balances on the way government power is used. Balancing the budget, limiting government debt and restricting monetary expansion, can be understood as guidelines that would have been integrated into a social contract that implicitly developed among various competing groups. MMT tells us that institutional trust is important, and it seems reasonable that some such restrictions are integrated into the monetary accounting system that MMT's credit theories of money highlight. They are not rules that follow from economic theory; rather, they are rules that evolved to govern the competition of competing political interests. Those rules seem limiting to those in power. But, by accepting limits on their spending when they are in power, the tradeoff is that they get limits on the other side when they are out of power.

Judgements about "sound finance" can, and should, change over time as problems and institutions change. That's what makes policy so complex. When "sound finance" was interpreted as meaning fixed precepts that could never to be broken, it provided lousy policy guidance. But when it was interpreted as providing flexible precepts capturing important real-world political and psychological realities that are useful to be kept in the back of policy maker's minds, sound finance provides useful guidance. Good fiscal policy is both sound and functional.

Conclusion

The clash between considering the theoretical model results and the real-world results can be seen in the interaction between Lerner and Keynes. While a graduate student at LSE Lerner travelled to Cambridge to convince Keynes that his general theory was wrong. But while there, Lerner was converted and became an early interpreter of what Keynesian economics

meant. He wrote important interpretive articles as well as a book, *Economics of Control,* (1944) that spelled out the theoretical outlines of what we now consider Keynesian stabilization policy. It is Lerner's conception of Keynesian economics that most influenced the textbook model. But Lerner's model did not capture Keynesian subtlety. Whereas Keynes was circumspect and nuanced about the policy implications of his model, Lerner was not – he pushed the model to the limit, and if the model said it, then it was the policy to follow. That's great for teaching models, but it does not provide good policy guidance. Keynes was both a statesman and a theorist; he recognized the difference between policy following from a model and policy following from a full consideration of all issues. So, my suggestion is that in their policy advocacy, MMT advocates should become more like Keynes, and less like Lerner.

An encounter between Lerner and Keynes captures the difference between theoretical understanding of an issue and the policy understanding of that same issue, and provides insight into my disagreement with MMT advocates about policy. At a Fed Seminar that Keynes gave, Lerner made an impassioned argument for functional finance policy, arguing that deficits and debt don't matter. Much to the surprise of Keynesians who were there, Keynes lambasted Lerner for failing to understand the policy implications of his theory. The incident is likely the one that some have cited as the time when Keynes stated that he was not a Keynesian (Colander, 1984).

Later that evening, according to Alvin Hansen, they were at dinner and Abba Lerner came up to Keynes and asked him "Mr. Keynes, why don't we forget all this business of fiscal policy, public debt and all those things, and have some printing presses." Keynes, after he looked around the room to see that no newspaper reporters could hear, replied "It's the art of statesmanship to tell lies but they must be "plausible lies." (Colander and Landreth 1996). Once you enter the realm of plausible lies, you are in the realm of real-world policy. MMT's argument that economic theory tells us that progressive politicians don't have to worry about how to finance new spending doesn't meet that 'plausible lies" criteria.

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Author contact: colander@middlebury.edu

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What is modern about MMT? A concise note

Paul Davidson [Founding Editor, *Journal of Post Keynesian Economics*; University of Tennessee]

This paper explains why modern monetary theory (MMT) fails to be a relevant modern theory of money because MMT completely neglects (1) the need to hold money for contractual liquidity purposes, and also neglects (2) the need for orderly price movements in financial markets.

Medievalism or Chartalism?

In my view, the "modern" thing about the modern monetary theory approach is its attempt to put a medieval *political* spin on the monetary theory developed by John Maynard Keynes in his *Treatise on Money* and *The General Theory of Employment Interest and Money*. The MMT problem is that this "modern" view of Keynes' theory of money results in significant errors in its implications of Keynes's theoretical approach to money and liquidity and its implication for deficit fiscal policy.

In Keynes's monetary theory the thing we call money is based on the concept of Chartalism where the State decrees, under the civil law of contracts, that the thing that is money is what discharges all legal contractual obligations. In his *Treatise on Money* (1930, 1, p. 4) Keynes noted "Today all civilized money is beyond the possibility of dispute Chartalist".

Yet, MMT disputes Keynes claim that all money in civilized, modern market-oriented economies is Chartalist. Instead MMT insists that money be defined, in medieval terms, as that thing which the sovereign (government) requires the private sector to use for the payment of taxes.

Nevertheless, implicit in MMT's support regarding the need for deficit spending to reduce unemployment is that private sector entrepreneurs and households will *accept any additional money government creates and spends* to employ resources owned by the private sector, even if no additional taxes are levied.

MMT argues that the government can create jobs merely by spending more money, which government creates without increasing taxes, i.e., by deficit spending. We should then ask of MMT advocates why should the private sector be willing to work to obtain possession of additional government money if this additional sum of money will not be needed, since no additional taxes will be imposed on the private sector?

I would suggest that what is missing from MMT's attempt to provide a modern version of Keynes's argument is the concept of liquidity as the motive for holding money.[1]

[1] For context regarding the work of Keynes, see Davidson (2017; 2009).

Money, money contracts and liquidity

Keynes's revolutionary theory requires that the analyst recognize that a monetary economy operates quite differently from the classical theory's operation of a non-monetary ("real") system. Accordingly, in Keynes's theory of a modern, money-using, market-oriented economic system, in the short as well as the long run, money is *never* neutral.

Time is a device which prevents everything from happening at once. Spot and forward money contracts and the civil law of contracts are human institutions created to organize all market-oriented production and exchange transactions that will be operative over an uncertain (not statistically predictable) future time period. A spot contract is one that specifies that delivery and payment is to be made "on the spot", i.e., delivery and payment is required the moment after the spot contract is agreed upon by the contracting parties. A forward contract, on the other hand, is one that specifies specific future date(s) for delivery of goods and/or services by the seller and money payment by the buyer. Accordingly, in all real-world market-oriented economies, all market transactions involve contracts specifying a calendar dated time when the buyer must meet his/her contractual payment obligation (liability) with the delivery of money to the seller who must deliver the "goods" at a specified date. An economy that utilizes spot and forward money contracts to organize production and exchange activities is an entrepreneurial economy.

In our world of experience, that thing that the State declares will legally discharge any contractual obligation under the civil law of contracts is money. In an entrepreneurial economic system, this concept of money requires a necessary property. The necessary characteristic of money in an entrepreneurial economy was spelled out by Keynes as early as the very beginning of his *Treatise on Money*: "Money [is] that by delivery of which debt-contracts and price-contracts are discharged, and in the shape of which a store of General Purchasing Power is held" (1930, p. 3). In other words, that thing that we call money has two specific functions:

1. Money is the *means of contractual settlement*;
2. Money is *a store of value*, i.e., a vehicle for moving purchasing power over time – "a time machine".

This "time machine" function indicates that money possesses the property of *liquidity*. The possession of liquidity means that the holder has sufficient money (or other liquid assets that can be readily resold for money in an orderly, organized financial market) to meet his/her contractual obligations as they come due. In a world of uncertainty, a decision maker cannot know what spot and forward contracts, either already entered into, or to be entered into in the future, will either (1) be defaulted by the buyer when the decision maker is the seller, or (2) will come due for which there will be a need for money to discharge these contractual obligations when the decision maker is the buyer. Accordingly, the more uncertainty the decision maker feels about future economic events, the more liquidity he/she will desire to hold to meet such unforeseen contingencies.

This characteristic of liquidity can be possessed in various degrees by some, but not all, durables. Since any durable besides money cannot, *by definition*, settle a contractual obligation, then for durables other than money to possess in some degree the characteristic of a liquidity time machine they must be resalable in well-organized, orderly markets for that thing (money) that the civil law of contracts declares can discharge a contractual liability.

Money, therefore, is the liquid asset *par excellence*, for it can always settle any contractual obligation as long as the residents of the economy are law abiding and recognize the ability of the State to enforce the civil law of contracts.

The degree of liquidity of any durable asset other than money depends on its prompt and easy re-salability in well organized *and orderly* financial markets. By orderly we mean that if the market price changes over time, these changes move in an orderly process by small amounts from the previous market price. For any financial market to be assured orderliness over time, there must be a "market maker", i.e., an institution that stands ready to:

1. Sell the durable whenever those who want to buy (the bulls) are overwhelming those who want to sell (the bears), or:
2. To buy when the bears are overpowering the bulls.

By making the market, the market maker assures all market participants that no matter what happens the market price of the asset in terms of money will move in orderly small amounts.
In sum, my point is that MMT fails as a theory to explain the need for contractual liquidity and the need for orderly financial markets.

Conclusion

In sum, MMT cannot be a theory of money operating in modern-market oriented economies for it fails to provide money with the property of contractual liquidity or the explanation of why other financial assets have some degree of liquidity because of the existence of orderly financial markets.

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Author contact: pdavidso@utk.edu

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Modern monetary theory: a European perspective

Dirk H. Ehnts and Maurice Höfgen [Berlin, Germany; Maastricht, Netherlands]

Abstract
This paper explains the basics of MMT and analyzes the current design of the Eurozone from an MMT perspective. It becomes obvious that individual member states of the Eurozone lack monetary sovereignty, which is not compensated by a fiscal authority on EMU-level. This results in the current permanent lack of aggregated demand culminating in high rates of unemployment and output gaps. Although the current QE policy of the ECB enlarges individual countries' policy space to cope with the problems at hand, the fundamental flaws in the design of the monetary union desperately need to be fixed. This is even more urgent with regards to the urgently needed socio-ecological transition that is required to tackle climate change adequately. In this light, the *Green New Deal* with the incorporation of a Job Guarantee program and the *Euro Treasury* as possible policy solutions for the Eurozone are briefly discussed.

Keywords modern monetary theory, macroeconomics, Eurozone, Green New Deal, job-guarantee

1. Introduction

Arguably, money is the most important institution in today's capitalist economies. Money essentially drives the economy as it is the central means to acquire and move resources. Consequently, the study of how the monetary system functions is of crucial relevance. modern monetary theory (MMT) puts the modern monetary arrangements at the center of its analysis. As such, MMT provides a different angle - grounded in the operational realities of the modern institutional framework - from which economic issues can be analyzed and, even more importantly, from which policy options that were not previously considered viable can be derived – most prominently, the *Green New Deal* and an incorporation of a Job Guarantee program. While those policies have been proposed recently in the US (US Congress, 2019), this paper argues – under consideration of the monetary arrangements – that those proposals are also viable options for the Eurozone.

Currently, the Eurozone is in no good shape. With an average unemployment rate of 7.5% and three of the four biggest economies of the Eurozone – France, Italy and Spain – even suffering from unemployment rates significantly higher than that, political pressure and euro-sceptic sentiments are arising (Eurostat, 2019). Clearly, unemployment numbers that high are not only an abstract indicator of economic performance but come with output gaps and harsh socio-economic consequences for those affected. Analyzing the existence of unemployment in the Eurozone through the MMT lens, it becomes obvious that due to a lack of aggregated demand member states are leaving material and non-material wealth on the table, which disproportionally affects the poorest citizens. As this paper shows, this can be attributed to major flaws in the design of the currency union. Moreover, the paper argues that a better understanding of how the government in the modern fiat currency system spends is the starting point for policy solutions that foster economic development and tackle the most prevalent issues of today: unemployment, its social consequences and climate change.

This paper is organized as follows. Section 2 introduces the theoretical foundations of MMT and sheds light on how a government in the modern fiat currency system. The focus will be

on expenditures, taxes and Treasury bonds. Section 3 applies the insights inferred from the theoretical body of MMT to the framework of the Eurozone and discusses the policy space for individual member countries operating under the rules of the monetary union. Section 4 presents the case for a European *Green New Deal* and how the Job Guarantee program as full employment policy tool fits into this context. Section 5 concludes.

2. A brief introduction to MMT

MMT acknowledges that the fiat currency is a monopoly of the federal government. The State is the only supplier of that which it demands in payment of taxes. Only the European Central Bank with the national central banks joined in the European System of Central Banks (ESCB) can create euros in the form of electronic entries in the payment system of the Eurozone (TARGET2). Consequently, the government has to spend or lend its currency into existence first, before non-government actors can use it to pay taxes or purchase bonds. It follows further – as a point of logic – that neither taxes nor bond sales finance government spending. The central bank credits the account of those banks or state institutions that receive money, as we have seen with quantitative easing. The money does not come from anywhere. The central bank marks up the account of the receiver. Only for legal and ultimately political reasons the central banks mark down the government's account, which has to be positive in order to allow the central bank to credit an account when the government makes payments. Therefore, the national central banks in the Eurozone execute the payments of the national governments.

It is then not the government that needs to collect taxes or sell bonds for its ability to make payments, but it is the taxpayer that needs to get the currency in order to be able to pay its tax liabilities and/or purchase government bonds. For the currency-issuing government, the primary means of levying tax liabilities on its citizens is not to fund government spending, but to create demand for the currency. As secondary means, taxes serve as a financial drain for the private sector thereby lowering inflationary pressure and freeing up real resources to be commanded by the government to pursue its socio-economic agenda. Additionally, taxes are a means to address inequality or (dis)incentivize certain behaviors. (Bell, 2000; Ehnts, 2016; Mitchell, Wray, & Watts, 2019; Mosler, 2012; Wray, 2014).

As Wray (2015, p. 2) puts it: "[…] all of this was obvious 200 years ago when kings literally stamped coins in order to spend and then received their own coins in tax payment." In today's world, in which the central bank makes and receives payments for the Treasury, the complexity of the operational processes has increased, however, the underlying logic of how the government spends remains the same. Instead of printing or stamping coins, the government spends (taxes) by instructing its central bank to credit (debit) the reserve account of the recipient's (paying) bank, which in turn credits (debits) its customers bank account accordingly. If the central bank aims for a certain interest rate target, it usually uses debt instruments, such as government bonds, to drain the excess reserves resulting from government spending of the interbank market – otherwise the excess reserves would put downward pressure on the interest rate. This demonstrates clearly that bond sales for currency-issuing governments are only a monetary policy tool and no means to raise funds. While across countries there are different operational and institutional procedures in place for the horizontal relationship between the treasury and its central bank – which are beyond the scope of this paper – in most cases these are largely irrelevant for the vertical relationship between the consolidated government (government plus its central bank) and the private

sector. Any voluntary, self-imposed procedural regulations that constrain the government in its ability to spend are to be considered as economically unnecessary in the context of currency-issuing governments and can only be grounded in political reasons (Ehnts, 2016; Fullwiler, 2008; Mitchell et al., 2019). Modern central banks have over the years switched to the corridor model, flooding banks with reserves and thus pushing the interbank market rate down to the deposit rate.

As currency issuer, the federal government operates under a completely different logic than currency users such as local governments, corporations and households, which have to fund their spending by either income, asset sales or borrowing (limited by their creditworthiness), do. As monopoly issuer of the currency, the government can make all payments denominated in its own currency as they come due and has no solvency risk on debt denominated in the currency it issues. It cannot finance its spending if financing is defined as securing income in order to later spend it. The numbers in the central bank accounts are marked up and down in computer software. The central bank cannot and does not use income to mark up one of its accounts. Hence, the Treasury is able to purchase everything that is for sale in its own currency – including all idle labor offered by its citizens. Essentially, the currency issuing government faces no purely financial constraints. The only constraints a monetarily sovereign government faces are the availability and quality of its real resources as well as the risk of inducing inflation if total spending exceeds the productive capacity of the economy in some significant sector. Nevertheless, even currency issuers can tie their own hands. For example, this occurs when the government promises to exchange its currency into a foreign currency at a certain rate or even offer precious metal at a fixed rate. While such a government cannot run out of its own money, it surely can run out of foreign reserves or precious metal forcing it into default on its promises. Essentially, the degree of monetary sovereignty depends on four conditions: firstly, the government of a nation issues its own fiat currency, secondly, it is able to enforce its tax liabilities denominated in its own currency, thirdly, it does not issue any (significant amount of) debt instruments not denominated in its own currency and, lastly, it does not promise to exchange its own currency into anything else at a fixed rate (Bell, 2001; S. Kelton, 2011; Mitchell et al., 2019).

The bottom line is that financial affordability is not a valid argument for a monetarily sovereign government to not pursue its socio-economic mandate. Moreover, such a government never needs to pursue any specific fiscal balance but rather should let the fiscal balance adjust to whatever magnitude is required to achieve its socio-economic mandate, e.g. full employment. A currency issuing government can impossibly “save” money in its own currency in order to spend later. Functionally, the central bank credits the banks’ account when government spends. A fiscal surplus does not provide the government with any greater financial capacity to realize future spending plans. The constraints are not in financial but in real terms (Ehnts, 2016; Mitchell et al., 2019).

3. Applying MMT to the Eurozone

While the landscape of currency arrangements is dominated by the *one country, one currency* rule, the Eurozone and the African CFA franc zone are the biggest exceptions. All Eurozone member states share the Euro as common currency, which is only issued by the European Central Bank (ECB). Essentially, this means that the member states are using a foreign currency, which they are unable to issue themselves and face a solvency risk for debt denominated in Euro. The same applies to the issuance of debt instruments as all member

states issue government bonds denominated in Euro. Referring to the conditions for monetary sovereignty outlined in section 2, individual member states, consequently, are not to be considered as monetarily sovereign. Monetary sovereignty only exists on the level of the Eurozone as a whole as the ECB cannot run out of Euros and the Euro is floating against other currencies. Before considering the nuances of the Euro framework, it can be concluded that the design of the Eurozone makes individual countries operating as currency users facing financial constraints – similar to individual US states. In comparison with the monetary arrangements of the US, there is one major difference though. The US government represents the fiscal authority that is able to utilize the policy space it derives from being monetarily sovereign, while the current design of the Eurozone is lacking such fiscal authority. Moreover, while the sovereign US government is in control of the interest rate they offer in bond sales, the Eurozone members have to pay rates determined by the demand of primary dealers in the bond market, which is a function of the default risk and the yield offered (Ehnts, 2016; S. A. Kelton & Wray, 2009; Wray, 2015).

This leads to the question of how national governments in the Eurozone make expenditures. Taking Germany as an example, the German Treasury has an account at the Bundesbank, which, as agent of the ECB, is responsible for Germany's fiscal operations. If the Treasury spends, it instructs the Bundesbank to credit the reserve account of the recipient's bank. Simultaneously, the Bundesbank debits the Treasury's reserve account, which is not allowed to be in deficit. Next to tax revenues, the German Treasury has the option to replenish its reserve account by issuing and selling bonds via the German Finance Agency at Frankfurt, which is owned by the Treasury. Since the ECB and its agents are prohibited to purchase those bonds on the primary market, the bonds can only be purchased by primary dealers, mostly commercial banks. Normally, those commercial banks borrow reserves (against collateral) from the ECB and use the borrowed reserves to purchase the newly issued bonds. Once the Treasury then spends, the reserves are subtracted from the Treasury's account and are added to the reserve account of the recipient's bank, which in turn uses those reserves to pay off its loans from the ECB. Two inferences can be made: firstly, the primary dealer's demand determines the interest rate of the bonds, and, secondly, it might happen that there is no demand at all as the bonds carry a default risk. However, the current expansionary policy of the ECB decreases the risk that bond issuances bounce since the ECB is – as part of their quantitative easing program – actively purchasing government bonds on the secondary market, which effectively erases the solvency risk for primary dealers in the primary market, with the notable exception of Greece (Ehnts, 2016).[1]

Conclusively, the individual member states of the Eurozone are a hybrid between monetarily sovereign federal government, like the US government, and currency-using local government, like the individual US states. While they Eurozone countries are lacking the policy space that they could potentially derive from issuing their own fiat currency, the fact that the ECB is actively buying their national bonds as part of the announced "whatever it takes" approach is providing them with more financial space than local governments typically have. Clearly, if the ECB would announce to unconditionally buy up all government bonds in the secondary market, or the prohibition of direct financing would be abandoned, national government would always have access to the funds required to make the payments as they come due – much like a monetarily sovereign government.

[1] On a side note: just recently all German bond yields have turned negative, i.e. the treasury is in nominal terms getting more reserves than they promise to pay once the bond expires (Reuters, 2019).

Ultimately, however, it is the lack of fiscal authority on the Eurozone level combined with the financial constraints individual member states face that is the major cause for the permanent lack in aggregated demand in the Eurozone resulting in high rates of unemployment of up to double digit numbers – with all its social consequences (Eurostat, 2019). Combining the inference from section 2 – the currency issuer faces no purely financial constraints and no solvency risk while the currency user, on the contrary, does face financial constraints and is subject to default risk – with the logic of sectoral balances offers an insightful perspective on the fiscal deficit rules applied in the Eurozone. Since income equals expenditure, any surplus of income over expenditure by one sector of the economy – private, public or external – must be balanced by deficits (expenditure > income) elsewhere (see also equation 3.1. below).

$$(S_p - I) = (G - T) + CAB \qquad (3.1)$$

S_p = private saving; I = private investment; G = government spending; T = taxes; CAB = current account balance

Figure 1 graphically expresses the framework of sectoral balances. All points above (below) the horizontal axis represent a fiscal surplus (deficit). All points to the left (right) of the vertical axis indicate external deficits (surpluses). Similarly, all points to the left (right) of the diagonal axis represent a private sector deficit (surplus). As a matter of logic, the sum of all sectoral balances is zero. Given that the private sector cannot sustain deficits permanently (it might absorb only short-time shocks) as it is has to fund its flows of spending and is subject to financial constraints and default risk, the blue shaded area marks the sectoral balance outcome that is to be considered as financially sustainable (see figure 1 and 2). Dependent on the private sector's spending and saving decisions as well as the outcome of the external balance arising mainly from trade, the monetarily sovereign government can adjust its fiscal outcome to whatever is required to maintain full employment. Applying this logic to the Eurozone and the prevalent fiscal deficit rules (see figure 2) it becomes apparent, firstly, that the sustainable policy space is reduced for governments being constrained in their fiscal outcome and, secondly, that countries running external deficits operate under a much smaller sustainable policy space than export surplus countries do as the red shaded area in figure 2 indicates. As such, import surplus countries in the Eurozone are by design heavily constrained in their policy space and hence are more prone to shocks, as the examples of Greece and Italy have shown (Mitchell, Wray, & Watts, 2016; Mitchell et al., 2019). This perspective sheds also new light on Germany's internal devaluation strategy, which drives its huge export surplus and, consequently, forces other Eurozone members into external deficit positions, in which they are – given the current design of the Eurozone - heavily constrained in their ability to achieve their socio-economic mandate, e.g. full employment (Flassbeck, 2007; Flassbeck & Spiecker, 2011).

Figure 1 Policy space for sovereign governments (Mitchell et al., 2016)

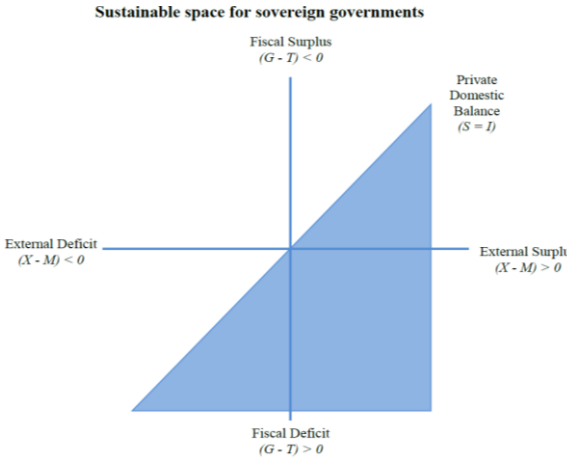
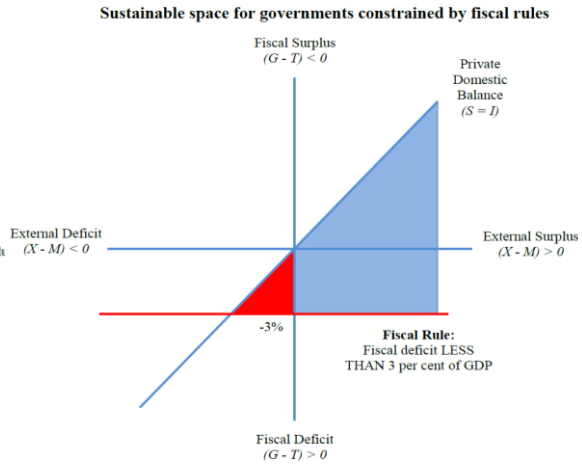


Figure 2 Policy space for constrained governments (Mitchell et al., 2016)



To summarize, the individual member states of the Eurozone are by design constrained in their financial capacity as they theoretically can run out of money and need to pay market-determined interest on their bonds. To some extent, this design flaw was overcome by Mario Draghi's announcement of doing "whatever it takes", which was interpreted to mean that the ECB would buy up government bonds so that default risk was basically zero. Moreover, the design is biased to the disadvantage of external deficit countries as the fiscal deficit rules heavily constrain their sustainable policy space. Although the currently expansionary policy of the ECB eases the financial constraints for the member states, the monetary union as is now lacking a fiscal authority to compensate for the member states' constraints. Currently, this leads to a lack in aggregated demand resulting in unreasonably high rates of unemployment and output gaps. The design of the Eurozone needs to be reformed either by installing a fiscal authority, e.g. by implementing a Eurozone Treasury, or by expanding the policy space of individual nations by easing the fiscal deficit rules. As it stands, the Eurozone as such has a current account surplus, which is the result of the policy decisions of the past. The Eurozone contributes to the global lack of demand and is hence partly responsible for any trade wars, like that between the US and China. While there are many options of how to reform the Eurozone, ultimately, a political decision needs to be made in order to cope with the present economic pressure as well as to find adequate policy measures to foster a socio-ecological transformation, which is desperately needed with regards to climate change.

4. The *Green New Deal* and the *Euro Treasury*

The Green New Deal is a name for a policy program that would green the economy. The "New Deal" hints at the Great Depression policies of using government to fix a broken economy. Representative Alexandria Ocasio-Cortez (2019) published her Green New Deal in February 2019. A European version was brought forward by Sozialistische Jugend Österreich (2019) in the context of the European elections in May 2019. A key component of both is taken from MMT when it comes to the macroeconomic issues of unemployment, price stability, and business cycles. The Job Guarantee program (JG) (or Employer of Last Resort)

> "involves the government making an unconditional job offer to anyone who is willing to work at a socially acceptable minimum wage and who cannot find work elsewhere, It is based on the assumption that if the private sector is unable to create sufficient job opportunities then the public sector has to stand ready to provide the necessary employment. This creates a buffer stock of paid jobs that expands (declines) when private sector activity declines (expands)" (Mitchell & Fazi, 2017, pp. 230-231).

Next to the societal benefits, the JG works as an automatic stabilizer, price and wage anchor as well as a macroeconomic tool for aggregated demand management thereby stabilizing the economy at a state of full employment (Mitchell & Muysken, 2008; Mitchell et al., 2019). Clearly, the JG increases economic stability as it acts as an automatic (countercyclical) stabilizer and essentially is considered as a superior buffer stock approach to increase price stability. Additionally, the JG program is an effective and sustainable tool for aggregated demand management. While a demand expansion led by the private sector increases private indebtedness and thereby financial fragility, a government led expansion actually enhances financial stability by providing safe assets and income to the private sector (Hail, 2018; Mitchell & Muysken, 2008; Murray & Forstater, 2013a, 2013b). While the pace and size of the implementation might depend on the country's specifics (e.g. administrative capacity), the principle is that the JG is federally funded, i.e. by the monopoly issuer of the currency, but locally administered. The JG scheme basically includes all types of jobs that tend to be underproduced by the private sector, e.g. community or environmental care. However, competition with the private sector is not intended (Mitchell et al., 2019; Tcherneva, 2018; Wray, 2015). Essentially, the bottom line of the JG approach is: there is no reason for a monetarily sovereign nation to have involuntary unemployment thus suffering from its macroeconomic and societal costs, no matter how unproductive or poor the non-human resources in that country are (Mitchell & Fazi, 2017). The wage paid for jobs under the JG scheme essentially becomes the effective national minimum wage. Similarly, the working conditions and job benefits become the lower bound of national working conditions (Mitchell & Fazi, 2017; Wray, 2015). The JG scheme effectively attacks the societal costs of unemployment, such as: poverty, social isolation, crime, regional deterioration, health issues, family breakdowns, school dropouts, loss of human capital and social, political and economic instability. Simultaneously, the JG program fosters the societal benefits of full employment: poverty alleviation, community building, social networking, and intergenerational stability amongst others. Next to that, the JG increases output in terms of goods and services, offers on-the-job training as well as skill development and addresses inequality since it hires off the bottom of the income distribution by offering a fixed wage and benefits package to anyone willing and able to work (Kaboub, 2007; Tcherneva & Wray, 2005; Wray, 2015).

The Green New Deal also includes new spending proposals to mitigate climate change and construct new infrastructure as well as add public jobs. The details will have to be provided by scientist from other disciplines, but economists can and will provide policy mechanisms to ensure that the Green New Deal is pursued with a view towards full employment and price stability. As such, it will drive up aggregate demand and shift the power balance towards workers and unions, helping to balance the distribution of power that has become unsettled in the last decades and that led to the historic increases in income inequality and wealth distribution. Other social effect might be the empowerment of women ("Pink New Deal") and of minorities, whose communities suffer relatively strongly from high rates of unemployment. Nersisyan and Wray (2019) argue that financial affordability cannot be an issue for the US

government since it is the monopoly supplier of US dollars. Monetary problems can result from rising rates of inflation, signaling a conflict over access to resources. In case of inflation the authors argue in favor of deferred consumption, but also mention well-targeted taxes, wage and price controls, rationing, and voluntary saving.

The Euro Treasury has been outlined by Bibow (2014) and Ehnts (2016). Bibow (2014, 39) wants the Euro Treasury "to pool eurozone public investment spending and have it funded by proper eurozone treasury securities". The idea is to have the Euro Treasury on top of everything else and make it into a political mechanism that takes over responsibility with respect to unemployment. It would have the instrument of additional spending create employment and the political process would ensure that governments that do not spend wisely – that is, use resources wisely – are losing power. Ehnts (2016) goes a bit further in making the Euro Treasury into a tool that would at least theoretically allow for government spending in all areas. This means that the Euro Treasury could also enable to create a new European welfare state at the European level, paid for by the Euro Treasury and using resources from all over the Eurozone.

Since the European Commission is not a national government, the ECB could theoretically buy up all Eurobonds. This would turn Eurobonds into a riskless asset and help the ECB in their conduct of monetary policy. It would also help those investors that wished to hold risk-free assets but could not. The Euro Treasury would give the European Commission financial firepower that is extremely powerful. Over time, it can be expected that power would shift from the nation states to Brussels, if current rules and procedures are followed. The European nation states would run budget surpluses and try to reduce their respective levels of household and corporate debt. This will continue to lead to a deflationary impulse in the Eurozone economy only that now we have a "spender of last resort". National public debt will be replaced by Eurobonds over time, leading to a reduction of risk in European public bonds. The European institutions, following Juncker et al. (2015), have embraced the Euro Treasury. It remains to be seen whether this political project will be implemented.

5. Conclusion

The idea that the economy can be stabilized by the central bank's interest rate and nothing else is both theoretically and empirically dead. What is needed is a new understanding of macroeconomic policy in which the central bank's set of interest rates will not have a large and persistent effect on the level of private investment. MMT suggest that fiscal policy should be used, with a focus on government spending. In the Eurozone, this new economic policy setup is made complicated by all sorts of European and national rules concerning public deficits and public debts. From an MMT perspective, public deficits are nothing else than an increase in the nominal amount of tax credits held by the private sector, while the public debt is the total number of outstanding tax credits in the private sector. Since the government does not "pay back its debt" as private borrowers do but only promises to take back its own money in the form of tax payments, there is nothing wrong with public deficits and debts.

Currently, it seems that Germany will enter a recession in the second half of 2019. With the current rules in place, the Eurozone faces a grim future. On top of this, the repetition of austerity policies is a possible political option, which would increase the depth and length of the recessions, possible transmitting to the whole of the Eurozone. The political consequences for both the Eurozone and European Union would be grave. Probably the

financial markets would be able to force out of the Euro first one country, then others until the Euro is chaotically dissolving. The impact would be felt most by Germany, which would see mass unemployment arise in its external sector. Using MMT, a reform of Eurozone and European Union can be implemented that would stop the deadly political dynamic that the Euro imposed on its member countries. Beyond Europe, more European demand for goods and services can help to reduce the tension in the trade wards of the global economy and facilitate global peace.

The two options for reform are a Green New Deal that tackles climate change and the Euro Treasury that tackles unemployment directly. The Green New Deal recognizes that in order to create a Green economy for all we need to employ more workers and not less. The proposal assumes that the division between labor and leisure time is not shifted. Within the context of the Euro Treasury we could imagine a European Green New Deal (see also Adler, Prakash and Wargan 2019) which also includes a shift towards working less hours. A reduction of working hours in the Eurozone would free up non-labor resources that the Euro Treasury can then use. Obviously, the net effect depends on the public goods that are to be provided and the interpretation of the public purpose when it comes to the level of additional government spending that is brought forward. Technically, the same reduction of working hours is possible with a Green New Deal.

Introducing a European Green New Deal or a Euro Treasury would shift the focus from profit-maximizing debt-fueled private institutions towards organizations that focus on public purpose and public interest, while taking into account environmental concerns and providing high-quality jobs. Other institutions of our democracy would also need to refocus. The European media will stop discussing what is financially possible and instead focus on what is possible using the available resources. Politicians will stop posing as supposedly fiscal conservatives and instead explain to their voters what their policies are doing for them, how they want to use scarce resources and why they think it will work. The socio-ecological transformation will probably also have many indirect effects which we cannot yet imagine. While some of them will surely be bad, let us hope that most of them are not.

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Author contact: dirk@ehnts.de

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MMT: the wrong answer to the wrong question[1]

Jan Kregel [Levy Economics Institute, Bard College, NY, USA]

Where's the money?

In speaking notes from 1994 Hy Minsky (Minsky, 1994, p. 1) argued "Keynesian theory is not just a theory that validates 'demand management' by fiscal policy." His view was based on the observation that "Keynesian" economics had been reduced to justification of the role of government fiscal policy to manage aggregate demand. Paradoxically, Minsky noted that

> "Keynes's novelty and relatively quick acceptance as a guide to policy were not due to his advocacy of debt financed public expenditures and easy money as apt policies… during a depression. … In the United States, economists such as Professor Paul Douglas, Henry Simon, and even Jacob Viner, all of whom were at the University of Chicago, advocated what would now be called expansionary fiscal policies well before the *General Theory* appeared" (Minsky, in Barrere, 1989, p. 97).

This popular emphasis on "Keynesian" fine-tuning demand management has led to the eclipse of the analytical foundations of Keynes's monetary theory that Minsky, Davidson and other post Keynesian economists have sought to resurrect. Against this background the greatest challenge facing what has come to be called "modern monetary theory" is the tendency to present it, even amongst its own practitioners, as a more sound analytical foundation for government deficit spending. Indeed, MMT has been presented as a "Magic Money Tree" (BBC Business Daily, 2019), the equivalent to Laffer curve "voodoo" economics suggesting that tax cuts will pay for themselves. Instead of tax and spend, it has come to be known as a profligate populist policy of "print and spend", that would inevitably lead to excessive deficits and rampant inflation.

Keynes had already attempted to counter this view in a 1942 BBC radio broadcast. Critics of ambitious plans for the post-war reconstruction of London had challenged "how is it to be paid for?… Where's the money to come from?" To which Keynes replied "we build houses with bricks and mortar, not with money. … As a technician in these matters I can only affirm that the technical problem of where the money for reconstruction is to come from can be solved" (Keynes, CW, XXVII, pp. 264-6). He summarized this position by noting that if

> "after meeting our daily needs by production and export, we shall find ourselves with a certain surplus of resources and of labour available for capital works of improvement. If there is insufficient outlet for this surplus, we have unemployment. If, on the other hand, there is an excess of demand, we have inflation" (ibid., p. 267).

The problem was one of the mobilization of resources, not the mobilization of finance.

[1] Mario Tonveronachi and Andrea Terzi have offered useful comments at short notice without adhering to the position exposited here.

Keynes could make these statements confident in the belief that his analysis in the *General Theory* had provided the answer to the "technical" problem of financing the required expenditure. In this context the response that MMT is the appropriate answer to the currently fashionable question of how to pay for government expenditures to combat environmental risks or more expansive availability of health care is the wrong answer to the wrong question. The real question is still the availability of appropriate resources, and if there are none, the policy process of shifting resources to these uses. As many have noted, in times of war the "technical" problem of finance is easily solved, the real difficulties are in the mobilization and shifting of resources.[2]

Banks produce it!

In point of fact, the *General Theory* was not even needed to resolve the "technical" problem of finance; it had already been dealt with in the works of Schumpeter, Bendixen, L. Albert Hahn, Hawtrey as well as von Mises and Hayek, all of whom recognized that the banking system was capable of providing an unlimited amount of finance for expenditure, public or private, by creating liabilities that serve as means of payment. In Schumpeter's words, the banker plays the role of the "ephor of capitalism. … the creation of new purchasing power out of nothing – out of nothing" (Schumpeter, 1912, pp. 72-3). Keynes had already made the point in his *Treatise on Money*: "In a closed banking system… it is evident that there is no limit to the amount of bank money which the banks can safely create…" because

> "all deposits are 'created' by the bank holding them. It is certainly not the case that the banks are limited to that kind of deposit, for the creation of which it is necessary that depositors should come on their own initiative, bringing cash or cheques." (Keynes, CW: V, 23, 26)

The implication of this for the "technical" financing argument is that voluntary saving cannot constrain expenditure, whether public or private. In the *General Theory* Keynes used the multiplier to further support this conclusion demonstrating that increased expenditures, public or private, would provide increased incomes that would produce the savings required to balance it. The "technical" problem was to insure that the increased savings out of income would be held in liabilities issued to undertake expenditure on productive investments.

If there is to be a meaningful discussion of the contribution of MMT, following Minsky, it has to provide more than another validation of Keynesian demand management. MMT should be considered on the merits of its contribution to monetary theory capable of providing an alternative approach to monetary policy. This would be particularly relevant considering the recent calls by Central Bankers in the aftermath of the response to the Great Financial Crisis for a new policy approach. For as Bernanke (Bernanke: 2002) has pointed out, central bank policy was, and still is, based on Friedman's reconsideration of the quantity theory.

[2] Here Keynes's pamphlet "How to Pay for the War" is apropos. In line with this approach see the recent Levy Economics Institute Working Paper no. 931 by Wray and Nersisyan "How to Pay for the Green New Deal" May 2019).

It's the quantity theory, stupid!

In this regard it is important to note that all the authors cited above were writing in opposition to the then predominant ideas of the quantity theory of money; Keynes made clear that his theory was based on his "long struggle to escape … from the confusions of the Quantity Theory, which once entangled me" (Keynes, VII, p. xxxiv). Indeed, the common element that links Keynes to the Schumpeterian tradition in money and finance is the rejection of the validity of the quantity theory of money. Minsky amplified this connection by noting that

> "bankers (using the term generically for all intermediaries in finance), whether they be brokers or dealers, are merchants of debt who strive to innovate in the assets they acquire and the liabilities they market. This innovative characteristic of banking and finance invalidates the fundamental presupposition of the orthodox Quantity Theory of money to the effect that there is an unchanging 'money' item whose velocity of circulation is sufficiently close to being constant: hence, changes in this money's supply have a linear proportional relation to a well-defined price level" (Minsky, 1992, p. 6).

In his *Treatise* Keynes suggests alternative approaches to the classical conception of "money" defined by its physical characteristics, as in the "metallism' of the quantity theory or its functions. Keynes notes that the primary concept of monetary theory should be the money of account in which debts and prices are expressed. The suggested alternative, "chartalism", he defined as a system of spot-forward debt contract denominated in money of account in which the State determines what is acceptable to extinguish the debt contract. Keynes provides a panoply of possible candidates that he calls "money proper". While there is a single unit of account, the "moneys proper" which the State may determine to extinguish debt may be multiple. Einaudi (1936) provides an example of such a system, exhibiting the rates at which a wide range of metal coins circulating in Milan in 1762 could effectuate a payment denominated in the unit of account. Note that while the rates could be changed periodically by the Sovereign, this did not involve debasing the coinage, nor provide the possibility of financing expenditure. This is thus a chartalist system in which government deficit financing is absent.[3]

The role of the State is limited to validating the unit of account, and selecting the moneys proper, which need not be produced by the State. Although Keynes does refer to the role of the State in changing the unit of account, he spends little time discussing the far more debated question of the historical origin of the unit, and only in passing refers to the necessity that the selection of the moneys proper implies imposing an equivalence between the units of account and units of the money proper in either tale or weight, of certain quality. He also notes that in addition to money proper

> "for many purposes the acknowledgements of debt are themselves a serviceable substitute for money proper in the settlement of transactions … we may call them bank money … simply an acknowledgement of a private debt, expressed in money of account, which is used by passing from one hand to another, … to settle a transaction" (Keynes, CW, V, p. 5).

[3] I have used Einaudi's table, which derives from Beccaria, in Kregel, 2019a, 2019b.

They are not money proper, and although in origin they precede the appearance of State money as defined below, they may become subject to State control, as in the imposition of bank reserve requirements in State money.[4]

Chartalism is not state money?

Keynes goes on to recognize a third role for the State under chartalism represented by the "further evolution of State money itself" noting that the State may "use its chartalist prerogative to declare that the debt (owing by the State) itself is an acceptable discharge of a liability"(ibid., p. 5) Now State debt becomes money proper. However, he warns that when this occurs the debt owing by the state "should no longer be reckoned as a debt, since it is of the essence of a debt to be enforceable in terms of something other than itself"[5] (ibid., p. 6).

For Keynes and Schumpeter there is an important distinction between these two roles of the State, and Keynes notes that conflating the two may lead to "false analogies" (ibid., p. 6). It is the first role: the "right claimed by all modern states" "to write the dictionary" that "has been so claimed for some four thousand years at least" (ibid., p. 4) while historically the examples in which the issue of State debt should answer to the description of money and discharge debt "are descended from some kind of bank money, which by being adopted by the State has subsequently passed over from one category to another." (ibid., p. 6) It would thus appear that Keynes considered the possibility of a chartal or State money system as independent of the direct issue of State representative money. While Keynes does not elaborate on the "false analogies," it would appear that Knapp's (Knapp, 1924) representation of the importance of the imposition of tax liabilities payable in State money in determining the acceptance of the State's own debts as means of payment would qualify. Indeed, as Keynes notes the use of the State's own liabilities to discharge debt was "adapted and taken over by the State from the far more ancient contrivance of private finance – namely bank money"[6] (op. cit., p. 13). It would seem clear that the MMT version of chartalism is limited to what Keynes would call Representative State money, that is the designation of State debt as money proper.

It is here that the use of the descriptor "chartalism" as the alternative to "metallism" is unhelpful for it still implies a comparison between a physical definition of money with an intrinsic or market value (commodity, gold) with chartalism based on a notional money of

[4] Here Keynes is referring to the innovations in banking operations that had created problems for quantity theorists from the beginning of the 19th century. See Ricardo's observation (Ricardo (1816 [1951], p. 75) that instead of gold being used in exchange "money is merely written off one account and added to another" (Ibid., p. 58) and payments "effected without the intervention of either bank notes or money."(Ibid., p. 76)

[5] Rather than the issue by the State of its own liabilities Keynes here seems to be indicating a debt of the State to a private bank for he speaks of "a debt owing by the State" as "A particular kind of bank money is then transformed into money proper – a species of money proper which we may call representative money." He thus considers fiat money and managed money as Representative money when the State determines them as capable of discharge of a debt denominated in terms of money of account.

[6] He goes on to note that "The earliest beginnings of bank money, like those of chartalist money, are lost in antiquity." Which would suggest that Keynes excluded the issue of State liabilities as money proper from his definition of chartalism. He even notes that "it is by no means essential to chartalism, that is to say the designation of the standard by the State, that the State should mint the standard; the essential characteristics of chartalism are already present, even when money passes by weight and not by tale, provided that it is the State which designates the commodity and the standard of weight" (op. cit., p. 10). As examples he notes that silver in China was not coined and served to discharge contracts by units of weight (tael).

account[7] with no value except that imposed by the State. This leads directly to the false equivalence to the problem created by valueless paper money or bank transfers (which Keynes notes are not money proper) as representations of "real" (commodity, metal) money and the obvious, but irrelevant, question of why agents would hold State money without intrinsic, market value. Clearly, the money of account has no physical value, while the Representative State money proper need not, it may be simply a balance sheet credit entry.

It is the response to this false equivalence between the pair "unit of account and money proper" and "fiat or bank money and metal or commodity money" which leads to the necessity to explain the source of the "value" of State money, or of why people will hold State money when it has no market value. While this makes sense within the framework of the quantity theory (or the Classic bullionist and banking v. currency school monetary debates of the 19th century) it has no meaning within the alternative approach starting from the money of account. As Keynes notes,

> "Money itself, namely that by delivery of which debt contracts and price contracts are discharged, and in the shape of which a store of general purchasing power is held, derives its character from its relationship to the money of account, since the debts and prices must first have been expressed in terms of the latter" (ibid., p. 3).

The unit of account clearly has value, but only in respect to the purchasing power of the prices and contracts that it represents. The money proper has value that is derivative of the value of the unit, and its designation by the State in discharge of purchase and debt repayment – it thus needs no further explanation of its "value".

But the perceived need to explain the determinant of the "value" of Representation State money provides the link between chartalism and fiscal policy by conflating the role of the State in imposing taxes to provide value to State liabilities with the issue of State liabilities to finance government expenditure. On Keynes's definition

> "The age of chartalist or State money was reached when the State claimed the right to declare what thing should answer as money to the current money of account – when it claimed the right not only to enforce the dictionary, but also to write the dictionary" (ibid., p. 4).

However, this did not necessarily mean inclusion of debts owing by the State! The entire discussion of why people will hold chartal money with no physical value belongs to the discussion of why agents will hold worthless pieces of paper as substitute for commodity money and has no place in the discussion of State money. By producing taxation to answer this false question, leads directly to the conflation of monetary theory with fiscal policy. And the wrong answer to the wrong question noted above.

[7] While neither the word "chartal" nor chartalism appear in my Dictionary, chart is rendered as papyrus, or a written document – which is perhaps the source of Keynes's use of Dictionary?

While MMT seeks to build its representation of the financial system on monetary sovereignty in the issue of its own liability Keynes (as well as Schumpeter amongst others) suggested that this may not be the best representation of the required "technical" foundation: [8]

> "Thus, in Great Britain and the United States – and also increasingly elsewhere – the use of bank money is now so dominant that much less confusion will be caused by treating this as typical and the use of other kinds of currency as secondary, than by treating State money as typical and bringing in bank money as a subsequent complication. The latter practice, which has outstayed the facts, leads to insufficient emphasis being placed on some of the most typical features of modern money, and to its essential characteristics being treated as anomalous or exceptional" (Keynes, CW, V, p. 29).

Schumpeter held a similar position:

> "But logically, it is by no means clear that the most useful method is to start from the coin – even if, making a concession to realism, we add inconvertible government paper – in order to proceed to the credit transactions of reality. It may be more useful to start from them in the first place, to look upon capitalist finance as a clearing system that cancels claims and debt and carries forward the differences – so that 'money' payments come in only as a special case without any particularly fundamental importance. In other words: practically and analytically, a credit theory of money is possibly preferable to a monetary theory of credit" (Schumpeter, 1954, p. 717).

In the discussions in his *Treatise*, Keynes indicates that he assumes managed money, and notes that at the time he is writing there was "representative money managed so as to conform to an objective standard" (op. cit., p. 18).[9] He calls this a middle ground between "automatic" (or commodity) money such as the gold standard and "managed" money via the operation of bank rate. He notes that State and bank money co-exist under such a system, but they are managed to correspond to the behavior of a pure commodity standard. This is nearly the same as operating under the principles of the quantity theory, but without gold responding to the dictionary definition of the unit of account.

MMT vs. quantity theory – where is liquidity preference?

Thus, rather than placing emphasis on a State money to finance government expenditure, more relevant would be a discussion of how MMT might contribute to the arguments necessary to "invalidate the fundamental presupposition" of an "unchanging money item" noted by Minsky. This is the path that Keynes followed in his *General Theory* where while "it is found that money enters into the economic scheme in an essential and peculiar manner, technical monetary detail falls into the background" (Keynes, CW,VII, p.xxii) This means that

[8] Robert Hemphill in "Foreword by a Banker" to Fisher (1936): "Currency and coin issued by the government, play a minor port in the transaction of our business." (xxi) "If all bank loans were paid, no one would have a bank deposit, and there would not be a dollar of currency or coin in circulation." (xxii)
[9] Note that State money may be Commodity or Representative money, while Commodity money may be managed, and that Bank money may be Representative money managed or Fiat as well as pure bank money.

there is no "linear, proportional relation" between some physical definition of money in direct determination of prices. Rather its role is in reflecting the importance of the "changing ideas of the future" as determinants of prices and the scale of activity. Keynes alternative explanation shifts price determination from static supply and demand functions to the relation between present, or spot prices and future prices. The ideas of the future are reflected in anticipated rates of return represented by the difference between spot and forward prices per cent. Since expected rates of return, which determine investment decisions are influenced by spot relative to expected forward prices, rates of return, will be reflected in prices, indeed they are one and the same thing.[10] Keynes then goes on to argue that if liquidity preference determines the rate of interest on money, and all other investment returns have to compete with the return on money then, it also determines the relation between spot and forward prices.[11]

As Townshend recognized in relation to Keynes's theory (1937, p.161)

> "it would seem that it is essential to take liquidity into account in order to discuss any money prices. For even if certain assets have so little liquidity-premium that changes in it do not affect their money-prices, variations in the (large) liquidity-premium of money will do so-operating of course on the conditions of new production of the assets."

Or as Minsky would eventually propose,

> "the *General Theory* should have been titled the *General Theory of Employment, Asset Prices and Money*. … the liquidity preference theory of interest is really a theory of the determination of asset prices in a capitalist economy. Money is not neutral because money affects absolute and relative asset prices and the pace of investment, whereas wages and profits (which are determined by investment) yield absolute and relative output prices" (Minsky in Barrere, 1989, p. 51).

Now, as Keynes notes, in the *General Theory* the technical details of the classification of money of the *Treatise* is left behind and he builds on his 1933 conception of a Monetary Production Economy. Instead of focusing on money of account and money proper, the focus is on the impact of money on the behaviour of the economy. Keynes gives the formal definition of a monetary economy as one in which expectations of the future determine present decisions, such that there is an asset whose rate of return declines more slowly than all others in the presence of an increase in demand (and thus the definition of a nonmonetary economy as one in which there is no asset whose liquidity premium is greater than its carrying costs). In this formulation, rather than the money rate of interest setting

> "a limit to the rate of output, … it is that asset's rate of interest which declines most slowly as the stock of assets in general increases… As output

[10] See Townshend, (193, pp. 158, 161) "it would seem that it is essential to take liquidity into account in order to discuss any money prices. For even if certain assets have so little liquidity-premium that changes in it do not affect their money-prices, variations in the (large) liquidity-premium of money will do so-operating of course on the conditions of new production of the assets. Strictly, liquidity-premiums, like exchange-value itself, is a purely relative conception. What varies absolutely is the net balance in the minds of wealth-owners between the conflicting desires to retain purchasing-power (in any form) and to exercise it."

[11] It is unnecessary to spell out this entire argument as I have written extensively on it elsewhere. For example, Kregel, 1988; 2013.

> increases, own-rates of interest decline to levels at which one asset after another falls below the standard of profitable production; — until, finally, one or more own-rates of interest remain at a level which is above that of the marginal efficiency of any asset whatever" (Keynes, CW, VII, p. 229).

Although Keynes posits that the slowly declining rate of return asset may be "money" it could be any non-reproducible asset. Here instead of State money providing unlimited finance for government expenditure, money is defined by its ability to constrain the expansion of the economy because of its impact on prices. Thus, it is not what is classified as money that is important, it is the liquidity characteristics of asset whose rate of interest "rules the roost" that is relevant. There is no need to specify any additional factor to give "value" to money other than its liquidity premium.[12] Simply recall the definition of the return to an asset in Chapter 17 as {a + (q-c) + l} as an alternative specification of the difference between the spot and forward prices relative to the spot price where q is the own rate of own return of the asset, c the carrying costs and l the liquidity premium. Money is defined as that asset with l > c, negligible or no q, and its return, l, falling less rapidly than the q-c on other assets which will have negligible l. Keynes notes that it is not necessary for this to be Representative State money or bank money, although he suggests that both will have similar behaviour. Indeed, in the entire book fiscal policy is rarely mentioned.

It is however, interesting to note that when Keynes makes his argument in support of the behaviour of liquidity, he notes that to compare these diversely dimensioned rates of return requires reducing them to a common factor– a purely notional "unit of account" – and that it could have been any asset to serve this role without impacting the relative rankings of returns. In addition, Keynes notes that the comparison of the behavior of rates as demand increases also requires that one set of prices (or one rate of return) has to be given exogenously.[13]

This point had already been made by Fisher and Townshend stresses the same point when he notes

> "the need for one set of spot forward prices to be given or at least stable. Indeed, it is obvious that, since the quantity of money does not determine 'the' – or rather, any – price-level, no prices would be determinate at all, unless at least one money-value the price of something-were determined by habit or convention. But it is also obvious that there is nothing of which the price is absolutely determined by convention, even in the shortest period. … And, on the other hand, since (so long as wage-earners are not owned as slaves by their employers) labour carries no liquidity-premium at all, its money value is not liable to be directly disturbed by psychological changes in liquidity premiums. This is what determines the acceptability of the unit of account and its inherent liquidity" (Townshend, op. cit. pp. 162, 166).

[12] It is paradoxical that after the "horizontalist" endogenous money approach attempted to argue that it made liquidity preference redundant, MMT should provide a similar argument.
[13] This is represented in the formula for the rates of return of the various assets by setting the "a"= 0 for money, and variations in a for the other assets the responses to changes in the other elements of their returns.

Taxation or government job guarantee?

Although Keynes gives a series of reasons for the existence of the liquidity premium, imposing taxes is not one of them. Rather he cites the link to the money of account as the standard for money contracts, and the stability of wages in terms of unit of account as an integral part of the liquidity that attaches to money. In Keynes's terminology this factor is important to ensure the expectation that money will always have a liquidity premium greater than its carrying costs.

> "Such an expectation requires, not only that the costs of the commodity in question are expected to be relatively constant in terms of the wage-unit for a greater or smaller scale of output both in the short and in the long period, but also that any surplus over the current demand at cost-price can be taken into stock without cost, i.e. that its liquidity-premium exceeds its carrying-costs (for, otherwise, since there is no hope of profit from a higher price, the carrying of a stock must necessarily involve a loss)" (Keynes, CW,VII, pp. 237-238).

He goes on to conjecture that

> "If a commodity can be found to satisfy these conditions, then, assuredly, it might be set up as a rival to money. Thus, it is not logically impossible that there should be a commodity in terms of which the value of output is expected to be more stable than in terms of money. But it does not seem probable that any such commodity exists" (ibid. p. 238).

Again, we note two points, the possibility of the multiplicity of moneys proper, and the clear departure from the direct relation between money and prices.

Thus rather than imposing a tax liability to ensure the demand for its liabilities, the role of the State as a major employer could act to provide the equivalent of the convention required in order for its liabilities to be the most liquid. One might then understand the role that a decision by government to set the reserve price of labour, through an employment guarantee scheme of the sort that Minsky proposed, as providing the support for the role of State money as the system unit of account. But, this specification of the operation of a monetary economy leaves open the definition of money — and Keynes points out that it could be any nonreproducible durable good, but in modern economies it comes closest to what he defined as "representative" money in the *Treatise* (Keynes, op. cit., pp. 9-11).

What are the policy questions?

Central banks have largely given up the targeting of money aggregates for the reason given by Minsky – the difficulty in identifying what money aggregate causes inflation in the presence of rampant financial innovation in the creation of liquidity. Chartalism provides an alternative explanation and definition of money. The resulting shift to Taylor-rule inflation targeting interest rate management by central banks in the Great Moderation preserved the belief that changes in the quantity of money induced by interest rates adjustments has an impact on prices. In the aftermath of the recent financial crisis central banks adopted both interest rate management (ZIRP) and supply targeting (QE) with little success in generating the expected

impact on prices or rapid recovery in activity. The response to this minimal impact was negative interest rates in the Euro zone, with little effect, and perhaps the experiment will soon be repeated in the US. What should replace these policies?

For Keynes

> "given that the rate of interest is never negative, why should anyone prefer to hold his wealth in a form which yields little or no interest to holding it in a form which yields interest (assuming, of course, at this stage, that the risk of default is the same in respect of a bank balance as of a bond)? …There is, however, a necessary condition failing which the existence of a liquidity-preference for money as a means of holding wealth could not exist. This necessary condition is the existence of uncertainty as to the future of the rate of interest, i.e. as to the complex of rates of interest for varying maturities which will rule at future dates. For if the rates of interest ruling at all future times could be foreseen with certainty, all future rates of interest could be inferred from the present rates of interest for debts of different maturities, which would be adjusted to the knowledge of the future rates" (CW, VII, p. 168).

MMT has a clear position on interest rates, but again couched in the framework of deficit spending. It points out correctly that if there is no savings or financing constraint the government need not borrow to fund its expenditures, which breaks any monetarist linkages between the deficit and interest rates. But, the argument is based on the impact of government spending on the interest rate on federal funds, deficit spending driving them to zero creating the need to issue government debt to drive rates to the desired policy level. The argument is used to reinforce the idea that government expenditure does not have to be financed by the prior sale of bonds. In addition it is argued that the normal rate for government debt should be zero only applies to State money credits in the central bank, and only has indirect impact on the system through and impact on private bank money creation. Indeed, this result depends on the institutional structure linking bank money to State money through the holding by the private financial system of reserve balances in State money. It is not clear that this would no longer hold in a pure State money system since there would be no fed funds market and interest rates could be set at any level dictated by policy.[14] The extreme form of such policy would be to propose the elimination of bank money and the nationalization of the payments system. [15]

It is interesting that there is already a monetarist MMT like analysis which deals with the interface of fiscal and monetary issues. See Cochrane (2018).

[14] "Perhaps a complex offer by the central bank to buy and sell at stated prices gilt-edged bonds of all maturities, in place of the single bank rate for short-term bills, is the most important practical improvement which can be made in the technique of monetary management" (CW, VII, p. 206).
[15] Kregel 2019b makes some suggestions along these lines, building on the role of the clearing house in discussions of the development of private banking. Unfortunately most of the discussion of chartalism overlooks the essential nature of the clearing house in the development of bank money and which Keynes believed provided the pattern for the introduction of State money.
Another alternative which has been little discussed is cooperative banking which became a major source of financing at the beginning of the 20th century – the same time that Schumpeter and others were developing their theories of development. See Wolff, 1910.

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Author contact: kregel@levy.org

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Modern monetary theory and post-Keynesian economics

Marc Lavoie [University of Ottawa and University of Paris 13 (CEPN)]

1. Introduction

I have already provided a detailed analysis of modern monetary theory (MMT) in a previous article, titled "The monetary and fiscal nexus of neo-chartalism: a friendly critique" (Lavoie 2013). Readers who wish to know more about my views on MMT (or neo-chartalism as it was first called) are invited to give a look at this earlier article. Its title still reflects my opinion: I don't think that I would change much of it if I were to revise it today. So I will limit myself to a small number of observations in this paper, many of which are inspired by very recent writings by MMT authors.

In what follows, I shall deal with three themes. First, what is the relationship between MMT and post-Keynesian theory? This is a question which I often get asked when the topic of MMT arises. Second, what is new with MMT? This is a crucial question since MMT is often considered as being a new and revolutionary school of thought. Third, I will discuss the fact that MMT is made up of two different frameworks, depending on whether the central bank and the government are consolidated into a single entity. These three questions are interrelated, so the sections that follow are to some extent arbitrary.

2. MMT as part of Institutionalist post-Keynesianism

Let us start with the first issue. MMT, to me, is just part of post-Keynesian economics. I would classify MMT advocates as Institutionalist post-Keynesians, because they are very much concerned with monetary and financial institutions, and in particular the institutional links between the government and the central bank.[1] Indeed, MMT authors have themselves made this clear, as Fullwiler, Kelton and Wray (2012, p. 25) have asserted: "We have never tried to separate our "MMT" approach from the heterodox tradition we share with Post Keynesians, Institutionalists and others. We have tried to extend that tradition to study the "nature" of "modern" money". Besides financial instability, MMT authors have also paid quite a lot of attention to the payment system, that is, the clearing and settlement process in a monetary economy. This is, in my opinion, their main contribution, both to monetary theory at large and to post-Keynesian economics in particular: to show and analyze the links between the central bank and the government within the context of the payment system. Other post-Keynesians known for their analysis of endogenous money, for instance Basil Moore (1988), had instead focused on the links between the central bank and the private sector or on those between banks and other agents.

[1] The main MMT authors – Randall Wray, Matt Forstater, Stephanie Bell-Kelton, Pavlina Tcherneva, Andrew Watts, Eric Tymoigne – were all tied to post-Keynesian economics from the very start. The only exceptions would be Scott Fullwiler, who came from the Institutionalist tradition, and William Mitchell, who was closer to the Marxian tradition. After all, Randall Wray, as well as Jan Kregel, the latter having also in the past given his support to MMT, are both the editors of the *Post Keynesian Journal of Economics*! Ironically, it is MMT's most ardent critic – Tom Palley, when using the term structural Keynesianism – who has avoided the post-Keynesian label.

MMT authors have thus clarified a part of the monetary analysis that had been mostly left aside by post-Keynesians. MMT advocates have also made new policy proposals, such as the job guarantee program or buffer stock employment, where the State acts as an employer of last resort and hence where expansionary fiscal policy is concentrated in the geographic areas where unemployed rates are high, instead of spreading money in all areas, even those where unemployment rates are relatively low, thus leading to what some have called Spatial Keynesianism. As an aside, MMT authors, like most post-Keynesians, are not favourable to proposals tied to a Universal Guaranteed Income.

While MMT authors have recognized on a number of occasions that the MMT approach is part of Institutionalist post-Keynesianism, references to post-Keynesian economics over the last few years have been rather scarce. Still, despite MMT authors apparently operating *en vase clos*, there has been positive spin offs for post-Keynesian economics as a number of students have told me that they became aware of post-Keynesian economics through their exposure to the MMT literature. The apparent present reluctance of MMT authors to refer to antecedent post-Keynesian works in macroeconomics or monetary theory, with a few exceptions such as the works of Hyman Minsky and Wynne Godley, can perhaps be explained by the fact that most critiques of MMT claims or policy proposals initially arose from insiders, that is, from the post-Keynesian camp. This is to be expected since early MMT authors, at least until 2008 but even until very recently, presented their views mostly to post-Keynesian audiences at conferences, and also because these authors dealt with monetary and fiscal issues that were close to the heart of other post-Keynesian scholars.

MMT authors have sometimes expressed surprise when subjected to these critiques: they could not understand why fellow post-Keynesians would not fully endorse the MMT approach, while at the same time feeling that the critics did not fully grasp the significance of MMT writings.[2] To understand this tension and many of the debates around MMT, it is important to realize that MMT is essentially situated at two levels. This is what I discuss next.

3. Two MMT frameworks

First, there is the story for the sophisticated reader or the scholarly researcher, what Fullwiler, Kelton and Wray (2012) – three key contributors to MMT – call the specific case. This is the story which is exactly right and with which I am in full agreement. Different countries have different institutions with different specificities, and small differences or small changes may lead to substantial consequences with regards to the monetary and fiscal nexus. Then there is a second story, which MMT writers call the "general" case, which is designated for a more popular consumption, for instance blog readers. This is the story with which I am not at ease, and which justifies the title of my 2013 article.

This second story differs from the first one because it assumes the consolidation of the central bank and the government into a single unit. This story is assumed to apply to all countries that have a "sovereign currency". Being a sovereign currency is not a bimodal issue. There are degrees of sovereignty, the highest being a country where: the domestic currency is the unit of account; taxes and government expenditures are paid in this domestic currency;

[2] "Interestingly, the economists seeking to discredit MMT have not been confined to those working within the mainstream tradition (New Keynesian or otherwise). Indeed, considerable hostility has emerged from those who identify as working within the so-called Post Keynesian tradition, even if that cohort is difficult to define clearly" (Mitchell, 22 August 2016).

the central bank is unhindered by self-imposed regulations and can buy whatever it wishes; there are no constitutional limits or rules on public debt or public deficits; the public debt as well as private debts of the domestic economy are labelled in the domestic currency; there is a floating exchange rate regime.

Some post-Keynesians, notably Tom Palley from what I recall from conversations with him, initially feared that the MMT claims based on the general story might hurt the reputation of post-Keynesianism and heterodox economists, as they felt that those claims were overly controversial. A number of post-Keynesians, while recognizing the contribution of neo-chartalists to monetary and macroeconomic theory, thought that it would be best for MMT to abandon the story based on the general case, or else to present the consolidation of the central bank and the government into a single entity as an objective to be achieved through institutional change, which also seems to be the interpretation given by a few MMT authors such as Tymoigne and Wray (2015), instead of an actual feature of economies upon which policy advice could be offered.

However, it must be granted that the story based on the so-called general case, combined to the assumption of the highest degree of sovereignty, works well in the sense that it arrives at striking conclusions, which attract the attention of and are easy to understand for non-economists. In my opinion, this is not the only reason for the success of MMT, on the blogosphere and elsewhere. Its proponents have been incredibly active on all social media to spread their views, and they have benefitted from a breakthrough when Stephanie Kelton became an economic adviser of Bernie Sanders during his electoral campaign in 2016. Changing the name from neo-chartalism to modern money theory or modern monetary theory was also an astute marketing move: who could object to something which is modern?

Still, however attractive and persuasive the story based on the general case can be to non-economists, it sounds like an over-simplification, or even a counterfactual description, to mainstream economists and a number of heterodox economists who only access this story. As MMT has got ever more into the limelight, especially since the beginning of 2019, critiques have arisen from new corners: Besides post-Keynesians, other heterodox economists – mainly Marxist economists, for instance Gerald Epstein (2019) – have started to pay attention to MMT policy proposals, focusing on their political feasibility, while journalists have solicited the opinion of mainstream economists with regards to the validity of MMT. Not surprisingly, with a few exceptions such as Brad DeLong, they have been highly dismissive, usually without reason.

Famous mainstream authors have argued that MMT-based policies would be a recipe for disaster or would pose a great danger to the economy, their opinion being based either on a misunderstanding of MMT or on the oversimplified version that can be quickly accessed on the web, as well as illustrating their usual bias against anything looking like non-mainstream economics. According to Mitchell (2019, March 7), these mainstream critics “all essentially followed the same pattern – little citation, false constructions, idiotic inferences”. Bankers and financial advisors sometimes provide a more nuanced opinion, a few of them even a highly positive one as they felt the MMT story allowed them to understand what otherwise seemed like puzzling evolutions of the financial sector. Central bankers, to keep their respectability, tended to take the line of mainstream economists. The latter often commented that MMT did not provide a full-blown macroeconomic theory. All of this should induce MMT authors, now that they have attracted the attention of politicians and the general public, to renew with their

post-Keynesian roots, realizing that other heterodox economists are their best allies, and not their foes, if they wish to convince power makers of the completeness of their approach.

4. Common MMT and post-Keynesian beliefs

MMT is without a doubt part of the post-Keynesian tradition. Besides the link between the government and the central bank, as well as a few claimed novelties, such as the MMT view of the Phillips curve, the implicit MMT macroeconomic theory relies on post-Keynesian macroeconomics and its belief that the market cannot be left on its own and thus must be tamed; MMT relies on a credit-creation view of banking – the endogenous money view of post-Keynesians, more specifically I would say the horizontalist view – where banks are special financial institutions which are something more than financial intermediaries and where central banks essentially pursue defensive operations; there are obvious similarities between the circuit of State money as described by MMT authors and the circuit of private money as described in the Franco-Italian post-Keynesian monetary circuit approach; MMT authors, just like (almost ?) all post-Keynesians reject 100 percent reserve-related schemes that have regained popularity since 2008; both MMT and post-Keynesian economists believe that fiscal policy, not monetary policy, should be the main tool to stabilize the economy, and hence that quantitative easing is unlikely to jump-start the economy.[3] They also favour functional finance *à la* Abba Lerner, or at least some version of it.

MMT authors and post-Keynesians alike reject the following statements, often heard from politicians, pundits and several mainstream authors: the government will run out of money; the government will go broke; the government should run its finances like a household; government deficits bring higher interest rates; government deficits take savings away from the private sector and lead to crowding out, and hence a reduction in private consumption and private investment. As Mitchell (22 August 2016) puts it, “While Post Keynesians rejected the so-called mainstream ‘crowding out’ theories (where fiscal deficits are alleged to push up interest rates and stifle private investment), MMT provides new ways of understanding why crowding out cannot occur in a modern (fiat) monetary system”. Thus there is a lot, both on the positive and negative sides, that MMT advocates and post-Keynesian authors agree upon.

When asked at the June 2019 Bilbao conference on Economic Developments in Theory and Policy about the relationship between MMT and post-Keynesian economics, Éric Tymoigne, an advocate of MMT and a former student of Randall Wray, responded that MMT and post-Keynesian theory were the same, with MMT adding the analysis of the links between the Treasury, the central bank and the payment system. This to me sounds like a fair assessment, even though some post-Keynesians may disagree with a number of key MMT propositions. A scholar cannot expect that another scholar with a similar background will necessarily agree with every one of his or her propositions being put forward. For instance, it seems to me that there is quite a bit of room for discussing the unforeseen consequences or the difficulties that are likely to be met when implementing the job guarantee program, its likely effect on wages and prices, the proper version of the Phillips curve, and finally whether flexible exchange rates truly provide more room for fiscal and monetary policies in countries

[3] As an example of how close the monetary theories of MMT and (at least some versions) of post-Keynesian economics are, readers are encouraged to compare the analysis of Lavoie (2010) and that of Fullwiler (2013), and see for themselves that they are quite similar when discussing the implications of quantitative easing and of the move towards a monetary framework based on the floor system.

whose currency is not high in the hierarchy of monies and where, besides the issue of the exchange rate, the degree of currency sovereignty is not high.

5. Gone is the reference to post-Keynesianism!

Still, in the new textbook designed for introductory or intermediate macroeconomics that has just been published by Mitchell, Wray and Watts (2019), MWW from now on, post-Keynesian economics is nearly absent. I lacked time to give the book a really good look, but I noted the following. MWW (2019, p. 17) start by pointing out that "Modern Money Theory, falls within the heterodox camp. Indeed it rests upon the foundations of many of the heterodox traditions". It is then said that "the three most important of these schools of thought are the Marxist…, the Institutionalist, and the Keynesian (followers of John Maynard Keynes)" (ibid, p. 6). MWW feel obliged to add a caveat in a footnote, saying that "Many of those who call themselves 'Keynesian', as well as the approach that is often presented in economic textbooks as 'Keynesian theory', are not heterodox" (ibid, p. 17).

At this stage one wonders why MWW did not explicitly clarify that the Keynesian authors they had in mind belong (mostly or entirely) to the post-Keynesian school of thought. The more so since, according to MWW,

> "MMT is … based on what is known as a stock-flow consistent approach to macroeconomics by which all flows and resulting stocks are accounted for in an exhaustive fashion. The failure to adhere to a stock-flow consistent approach can lead to erroneous analytical conclusions and poor policy design" (ibid, p. 15).

The stock-flow consistent approach is at the heart of post-Keynesian economics since the mid-1990s, and it was a critical contribution of Godley and Cripps (1983).

To add insult to injury, in the index (ibid, p. 570), under "post-Keynesian school", we are told to look at "schools of economic thought". However, the entry (ibid, p. 571) has long sub-entries devoted to New Keynesian economics, the New monetary consensus and the Real business cycle theory, but post-Keynesian economics is nowhere to be found. MWW do mention the works of a few post-Keynesians (mine included) in the short list of references that they offer at the end of each chapter.[4] However, when it comes to identify the "best-known early Post-Keynesians", among the half-dozen names being offered, one finds Thomas Rymes (ibid, p. 437). Now Rymes is the teacher who first introduced me to post-Keynesian economics, and I became his colleague and a tennis partner; he produced two excellent books on the consequences of the Cambridge capital controversies for the measure of technical change and he edited a synthesis of the lecture notes taken by various students when Keynes was writing the *General Theory*. In addition he was among the few economists with an understanding of the clearing and settlement system, about which we had several discussions. So I feel grateful that he was included among the best-known early post-Keynesians. But from experience when mentioning his name to colleagues or doctoral students, I can attest that, unfortunately, he is not well-known!

[4] To be fair, I must add that a few pages are also devoted to Keynesian and post-Keynesian theories of the business cycle, but as I said previously, I lacked time to read them carefully.

Post-Keynesians, as well as MMT authors, often complain that mainstream authors take hold of their ideas without proper acknowledgment. It would be unfortunate that the same occurs within heterodoxy.

6. Credit to be given where credit is due

While MMT scholars often get irritated by the critiques being put forth by their fellow post-Keynesians, sometimes rightly so when these critiques seem to rely more on neoclassical theory than on established post-Keynesian lines – post-Keynesians themselves feel irritated by assertions occasionally made by some key MMT contributors.

Bill Mitchell writes thousands of words nearly every day on his blog, so he can certainly be excused for putting forth exaggerated claims now and then. While one can certainly agree with Mitchell's (23 July 2019) statement that "MMT is a superior paradigm for understanding how the monetary system actually operates in comparison to the mainstream logic", or even perhaps that "The MMT economists are delivering the alternative paradigm in macroeconomics. No other challenge to the mainstream has succeeded and the heterodox tradition just became lost in peripheral issues. MMT is front and central macroeconomics and the mainstream cannot deal with it", it is rather hard to swallow statements to the effect that "MMT economists were the first in the modern era to point out that loans create deposits not the other way around" (16 July 2019). Reverse causality, linking credits to deposits and then to reserves, were the mainstay of post-Keynesianism ever since Le Bourva in 1959, Kaldor in 1970 or Moore in 1979, way before any MMT writing.

Mitchell next adds that "You will never find that proposition in the standard macroeconomics textbooks", meaning the reversed causality between loans and deposits. The proposition can however be found in the introductory macroeconomic textbooks of Baumol, Blinder, Lavoie and Seccareccia (2010) as well as that of Dullien et al. (2018).[5] Similarly, when Mitchell (15 July 2019) writes that some central bankers finally acknowledge "what Modern Monetary Theory (MMT) economists have been pointing out for more than two decades – that the accumulation of household debt ultimately becomes a brake on spending growth", he seems to forget that this proposition has been put forward by a long list of post-Keynesian economists, including Godley and Lavoie (2007) and even Palley (1996)!

Mitchell often complains that MMT advocates have been misunderstood by their critics. When an objection is made by some serious observer of MMT, Mitchell or his fellow MMT advocates usually claim that the critic fails to understand the intricacies of MMT, the true intent of its scholars, or that the entire MMT literature has not been properly ascertained. The complaint could be reversed however. Mitchell asserts that post-Keynesians are deficit doves, who are in favour of deficit rules and who have "become trapped into thinking that deficits in downturns must be offset by surpluses in upturns to stabilise public debt" (Mitchell, 25 August 2016). This allows Mitchell to claim that the "body of MMT work is clearly novel and improves on the extant Post Keynesian literature in the subject which was either silent or lame on these

[5] Indeed, Godley's three balances, dear to MMT authors and many other post-Keynesians, can also be found in the Baumol et al. (2009) textbook under the name of the fundamental identity, and it was already to be found in the previous American editions by Baumol and Blinder. This may be because Blinder did have contacts with Godley.

topics".[6] Mitchell (12 August 2019) argues later that "This tells me that we are entering a period of fiscal dominance, which will represent a categorical rejection of the mainstream macroeconomics consensus that has dominated policy making since the 1980s – the neoliberal era. More and more people will start to achieve an understanding of the main precepts of Modern Monetary Theory (MMT) as a result because our framework is the only macroeconomics that has been advocating this shift".

I may be wrong, but it seems to me that post-Keynesian authors, such as Sawyer (2011), or Fazzari (1993-94) and James Galbraith (1993-94) in the mid-1990s, were far from being deficit doves and were advocating the abandonment of monetary dominance in favour of fiscal policy, as well as presenting views on fiscal policy that were very close to those of MMT and functional finance. Besides, most of the post-Keynesian colleagues to whom I talk object to fiscal rules.

On a related topic, while Mitchell recognizes that post-Keynesians also object to the crowding-out argument, he believes that they do so for the wrong reasons, based either on a reinterpretation of the IS/LM framework, where the government has the capacity to monetize the deficit or through access to international financial markets. The true reason for rejecting crowding out, Mitchell (25 August 2019) says, is to be found in an explicit analysis of the payment system that includes the relationship between the government, the central bank and the banks. In the following statement Mitchell seems to imply that the extant post-Keynesian literature has learned nothing on this issue over the last 20 years:

> "Where MMT departs from this literature is to explicitly integrate bank reserves into the analysis in a way that no previous Post Keynesian author has attempted. The MMT framework shows that far from placing upward pressure on interest rates, fiscal deficits in fact, set in place dynamics that place pressure on interest rates in the opposite direction. You will not find that result in the extant Post Keynesian or mainstream literature… Even the Post Keynesian economists consider crowding out to be overcome by the government's capacity to print money" (Lavoie, 2014).

It is nice of Mitchell to make a reference in his blog to my 2014 book on post-Keynesian economics. However credit must be given where credit is due. While MMT advocates Warren Mosler and Randall Wray (1998) were the first to claim that, all else equal, a government deficit would put downward pressure on the overnight rate, this analysis was quickly picked up by myself (Lavoie 2003) and other fellow post-Keynesians. In contrast to what Mitchell asserts, my 2014 book explains in detail why the government deficit leads to downward pressures on the overnight rate. In addition, in the introductory macro textbook that Mario Seccareccia and I adapted to the Canadian market, the same analysis is provided in very explicit terms (Baumol et al., 2009). This thus came ten years before MWW.

Furthermore, the story being told by Mitchell is incomplete. While it is true that government deficits put downward pressures on the overnight interest rate, things are more complicated when it comes to other rates, for instance longer-term rates. With the help of a relatively simple stock-flow consistent model that incorporates several endogenous interest rates,

[6] It can be pointed out that Mitchell uses the spelling advocated by Paul Davidson, that is, Post Keynesian economics, a spelling which is normally associated with the fundamentalist branch of post-Keynesianism, whose authors often did not accept that central banks were essentially pursuing defensive tasks (as argued by MMT and "horizontalist" authors such as Basil Moore and Alfred Eichner).

Lavoie and Reissl (2018) show that a government deficit may or may not lead to an increase in these other rates, depending on the value of various parameters as well as those tied to portfolio decisions. Of course this result depend on the chosen model and its assumptions, but I believe that a wide variety of models would come to the same conclusion. Thus, as argued earlier, MMT needs to go beyond the institutional analysis of the payment system which is its *forte*, and incorporate the findings and tools of post-Keynesian economics if it wishes to provide a fully consistent macroeconomic theory. The example being provided here is directly related to monetary economics, but a lot also needs to be said about other aspects of macroeconomics such as growth theory or technical progress, not forgetting microeconomics and pricing theory.

7. The consolidation issue

I will close this paper by going back to the consolidation issue. This has been a subject of contention between MMT authors and their post-Keynesian critics from the very beginning, as can be ascertained by reading the earlier comments on MMT by Mehrling (2000) and Rochon and Gnos (2002) as well as my 2013 paper. In a blog where Mitchell (22 August 2016) outlines the new features of MMT relative to mainstream theory and post-Keynesian theory, he writes that some post-Keynesians, meaning Lavoie (2013) and Fiebiger (2012), "have claimed MMT presents a fictional account of the world that we live in and in that sense fails to advance our understanding of how the modern monetary system operates …. Marc Lavoie (2014) seems to think this criticism is important enough to devote a whole section in his book to repeating it". In fact I devote less than 15 lines to the issue of whether consolidation is appropriate in a book of nearly 600 pages.

In my friendly critique of neo-chartalism, after having noted that under most circumstances it did not really matter whether the central bank was purchasing government securities on the primary or the secondary markets, I asked the following question: "But then, if it makes no difference, why do neochartalists insist on presenting their counter-intuitive stories, based on an abstract consolidation and an abstract sequential logic, deprived of operational and legal realism?" (Lavoie, 2013, p. 17). Bell and Wray (2002-2003) had previously provided an answer that was mildly satisfying. Their argument was that the whole rigmarole around the Treasury being prohibited to have direct access to central bank money – a self-imposed constraint -- was to avoid large shifts in bank reserves when the Treasury was actually deficit spending. The constraints helped to coordinate the activities of the Treasury with those of the central bank. Consolidation helped to understand that the government faced no financial constraint and hence could never run out of money, at least in the case of a sovereign currency. Mitchell (1 May 2019) in his response to the critiques of Gerald Epstein based on the apparent independence of central banks, first uses a similar argument, claiming that "the central bank and the treasury departments work closely together on a daily basis". Of course, a counter-argument would be that collaboration and information exchanges between two parties do not mean that they act as a single consolidated institution.

Mitchell (22 August, 2016) provides a much better and interesting answer to my question, an answer which is repeated in an identical form in Mitchell (1 May, 2019). He argues that critics "have failed to understand the intent of the MMT consolidation of the central bank and treasury functions into a whole government sector". The intent, according to Mitchell, is that governments have

> "erected elaborate voluntary constraints on their operational freedom to obscure the intrinsic capacities that the monopoly issuer of the fiat currency possessed…. These accounting frameworks and fiscal rules are designed to give the (false) impression that the government is financially constrained like a household."

Mitchell then proceeds to an interesting analogy with Marx, arguing that "In the same way that Marx considered the exchange relations to be an ideological veil obscuring the intrinsic value relations in capitalist production and the creation of surplus value, MMT identifies two levels of reality". Those two levels of reality are the two levels that I identified earlier under the names of the general and specific cases. The general case is there, Mitchell says, "to strip away the veil of neo-liberal ideology that mainstream economists use to restrict government spending" and for the reader "to understand that such a government can never run out of the currency it issues and has to *first* spend that currency into existence before it can ever raise taxes or sell bonds to the users of the currency – the non-government sector". Once this is understood, the existing framework, with all its self-imposed constraints, can be looked at from an entirely different viewpoint.

I am somewhat seduced by this justification for the preliminary use of the consolidation hypothesis, and one that indeed I had not considered before. Still, once this is done, the specific reality comes into being and must be tackled, and has often been tackled by MMT authors. The two cases, the general and the specific, must be clearly differentiated, and in my opinion, the most outrageous statements – such as the government does not need to borrow to spend or the government must run a deficit for the supply of base money to increase, must be left aside when discussing real policy issues.[7] As mentioned earlier, the consolidation of the central bank and the government into a single entity should enter the policy debate as an objective to be achieved through institutional change, and not as an actual feature of the economy upon which policy advice could be offered.

8. Conclusion

There is no doubt that MMT provides a key contribution to monetary and macroeconomic theory. Its contribution resides essentially in the analysis and understanding of the relationship between the government, the central bank and banks within the payment system, at least as understood within what MMT authors call the specific case. This analysis goes beyond the standard approach in terms of budget constraints. This cannot be disputed. One can certainly fully agree with this contribution of MMT, without however endorsing the so-called general case, which needs to be associated with a substantial degree of currency sovereignty. Similarly, it is possible to fully subscribe to the analysis based on the specific cases while doubting that a job guarantee program as advocated by MMT economists will

[7] Similarly, I sometimes feel that the fundamental identity underlined by Godley is being misrepresented. The private domestic part of the three balances reflects the *financial* saving of the private domestic sector. In a closed economy, because the identity says that the *financial* saving of the private domestic sector (the domestic net private lending, $S - I$) is equal to the deficit of the government, one is occasionally given the impression that the wealth of that sector cannot grow unless the government sector runs a deficit. However, even if the government budget is balanced, the wealth of the private sector will also increase whenever that sector is investing into real assets. Wealth is composed of real and financial assets. Indeed, when the economy is doing well with high real investment, the domestic wealth net of debt (even leaving capital gains aside) is likely to increase strongly, even though under such circumstances the government sector may be running a surplus.

simultaneously generate full employment and price stability, especially if this is accompanied by a depreciating currency and a target overnight interest rate set at zero.

I hesitate to say that MMT views are post-Keynesian views pushed to the extreme, because the *horizontalist* version of the endogenous money theory to which I have always subscribed was considered to be extreme by a majority of fellow post-Keynesians in the 1980s and 1990s, until central banks started to explicitly target interest rates and until central bankers themselves adhered to it (Bindseil and König, 2013). Who knows how close to reality the so-called general case will be in the future? My answer to the question evoked in the introduction, about whether there is anything new with MMT, is thus in opposition to Palley's (2015, p. 46) response, who surmises that what is correct with MMT was already understood, while what is new is wrong. The debate between Palley and MMT authors over the validity of their respective theoretical views is not one which is easy to disentangle. In my opinion, its best and most balanced assessment can be found in the review made by Fiebiger (2016), which is a must read.

Through hard work and perseverant interventions, a small number of MMT authors have managed to attract the attention of social media, mainstream media, as well as that of politicians. Through the media, they have managed to force mainstream macroeconomists and central bankers to respond to their heterodox views. In so doing, they have been persistent in arguing that the main constraint on government expenditure is not a financial one, and that, at least under certain conditions, there can be no default by a central government, thus providing additional legitimacy for expansionary fiscal policies, more precisely additional government expenditure, which, had been put on the backburner soon after the 2008 financial crisis. They must be congratulated for this. Let us just hope that all channels of discussion between MMT authors and their other post-Keynesian colleagues remain open: disagreements on theories and policies are to be expected, even thus scholars may share lots of common ground. This was also the conclusion of Nesiba (2013) in his study of the links between MMT, post-Keynesianism and Institutionalism.

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Author contact: Marc.Lavoie@uottawa.ca

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Money's relation to debt: some problems with MMT's conception of money[1]

Tony Lawson [University of Cambridge, UK]

According to modern monetary theory (MMT), money, when the term signifies something used in making payments, is always debt, and currency is a specifically government or state debt. The latter debt is redeemable through its use in meeting tax obligations. It is just because it is so that taxes get paid and indeed there exists a general demand for the currency.[2]

I argue that not only is this latter reasoning not quite right, but currency, indeed money more widely, is never debt in the sense that proponents of MMT suggest, and that the debt/credit theory of money that underpins this reasoning should be abandoned. I advance instead a rather different *positioning* theory of money that interprets the monetary process, including the meeting of tax obligations, somewhat differently, and I think more realistically.

I am not sure that the arguments that follow in themselves necessarily undermine any MMT policy stance, at least under current conditions. But, if correct, they should help dispel some confusion regarding, or stemming from, the presuppositions upon which various MMT more substantive and policy claims rest and allow an appropriate orientation to be determined whatever the prevailing conditions.

In briefly outlining my case, I draw primarily on the core MMT text and deservedly influential book by Randall Wray (2012) titled *Modern Money Theory.*

Money interpreted as debt/credit

Although the specific focus will be on the MMT notion that currency is a form of government debt, I start with the more general claim that money is always debt, this being a central premise of MMT. Or at least this is so when the focus is on the kind of thing that is everywhere used for buying goods. Unfortunately, the term "money" is also often used by proponents of MMT to mean a "unit of value" or a "unit of account" or (especially unhelpfully) a "money of account". I will seek to make meanings clear in context. But I will be avoiding the latter usages of the term "money"; the expressions "unit of value" etc., meaning a common measure in terms of which the exchange values of all commodities and debts, etc., are expressed, do not require supplementing with additional labels, least of all by one that is more commonly and usefully employed to mean a connected but entirely different kind of thing.

As I say, money, for proponents of MMT, when the term is used for items used in making payments, is said to be debt. Thus, in a chapter of Wray's book focussed specifically on the

[1] For helpful comments on earlier drafts of this paper I am grateful to Philip Armstrong, Jamie Morgan, Stephen Pratten and Roy Rotheim.

[2] A category that does not include "deposits" created by commercial banks. The term currency is not always consistently employed by proponents of MMT, but according to Randall Wray in the MMT text I draw upon: "The word currency is used to indicate coins, notes and reserves issued by the government (both by the treasury and by the central bank)" (Wray, 2012, p. xv).

nature of money, two subsections in which money is interpreted in this way are given the heading "money is debt". Wray also identifies three "fundamental propositions regarding money", one of which emphasises that "money [not a particular good] buys goods", and another of which runs as follows:

> "Money is always debt; it cannot be a commodity […] because if it were that would mean a particular good is buying goods" (Wray, 2012, p. 264).

I take it that the term *debt* is here understood in its traditional and legal sense as an obligation held by a debtor to satisfy a creditor. It is internally related to a *credit*, where the latter means a specific right to payment or satisfaction. Credit and debt, in other words, are two aspects of the same social relation – a credit/debt (or debt/credit) relation – connecting a creditor and a debtor; you cannot have one aspect without the other. Credit is simply this relation viewed from the perspective of the creditor; it is debt from the point of view of the debtor.

In the following discussion I employ only the noted understanding of the terms *debt* and *credit*, and so avoid various derivative uses, including that of credit as "means of payment". All money (as I am interpreting the term) functions as a means of payment and so is "credit" in this sense. Any use of the term credit in this latter fashion, in the context of a discussion or defence of the *credit theory of money*, risks this theory being interpreted as a functionalist banality. Rather proponents of any version of the credit theory worthy of the name need to demonstrate that it is *just because* a money is (a form of) debt/credit in the sense elaborated that it can serve as a general means of payment (and so be a "credit" in the derived sense).

Returning to Wray, I might note that the claims made that "money is debt" and "money is always debt" are not identical, though both, I shall suggest, are erroneous. The only sense in which money can ever be said to be debt/credit, I shall be arguing, is similar to that in which the US President could once (but can no longer) be said to be Barack Obama. Of relevance here is that the US President is empowered and obliged to act in ways that ex-president Obama is not. Fundamental to this is that *US President* is a term used for both a position (or office) *and* a positioned occupant, and that the presidential rights and obligations are not brought to the position by any individual but rather are properties tied to the presidential position itself and accessed by its occupant. Obama was never other than a contingent and temporary occupant of the position, who accessed the presidential position rights and obligations only when he was positioned/constituted as US President.

In similar fashion, or so I shall be arguing, there exists in any community the position of money, and so typically a positioned occupant, or money itself, the primary uses of which are *not* due to any properties possessed by the kinds of thing that contingently occupy this money position (the current occupants indeed being forms of debt) but are determined by community agreed related rights and obligations that fall on all community participants and apply only at the level of money itself.

That noted, it will be seen that the kinds of thing that occupy the money position are (in the manner Obama, when positioned as US President, was) significant as well, but for different sorts of reasons that I explain below.

Social positioning

It may appear that in suggesting that money is not identical to debt but, currently at least, only formed as positioned debt, I am merely playing with words. However, this is not so. Rather, the issue is a fundamental one of social constitution. Everything social is constituted through such processes of social positioning. And a fundamental feature in all cases, indeed a central point of the positioning process, is that a *positioned item is not identical to the item positioned*. Let me elaborate this claim, for it amounts to a general thesis of which money is but a specific instance.

Every social phenomenon – that is, any phenomenon whose existence depends necessarily on human beings – is community relative; each one is constituted in, and as a property of, a specific community. And in each community, whether local, national or international, social phenomena are constituted by way of processes of (community specific) social positioning, whereby people and things are allocated to positions in ways that render them components of wider embedding social systems or totalities. Thereby, the people and things in question, *qua* components, are typically oriented to facilitating the operations of these totalities. This works by way of capacities already possessed (by the people or things that come to be positioned) being harnessed in such a manner that they serve the needs of the overall embedding system. Such harnessing is achieved through the widespread acceptance of, and reliance upon, sets of positional rights and obligations that are allocated as part of the positioning process (see Lawson, 2019 for a lengthy elaboration).

When it is human beings that are in some way positioned within some community, they themselves get to access relevant rights and obligations bearing on their ways of acting. Thus, if some individuals are positioned in a university as lecturers and others as students, then each group *qua* positioned individuals get to access rights and obligations in some part matched to specific obligations and rights of the other, and which work to ensure that lecturers lecture, and students study, facilitating the workings of the educational totality that is the university. When Obama was elected US President, *qua* US President he became a component of the US system of government with rights and obligations, accessible as President, being matched, first, to obligations and rights of those (positioned) closest to him in the governmental system, but ultimately to those of all others that are (positioned as) members of the US national community, and designed to facilitate his acting to the benefit of the US *qua* national community.

When it is an artefact or some other object that is so positioned in some community or community system, the rights and obligations regarding how it is used, *qua* a positioned item, fall (not, of course, on the positioned object itself, but) on a set of members of the community. This is the case clearly when items are positioned as, say, property, forms of transport, car parks, traffic lights, libraries, tickets or passports, ensuring that the wider embedding communities work as required (on all this see Lawson, 2019).

Both the determination of positions with associated rights and obligations, and the allocation of people and things to positions, ultimately depend on community acceptance. The latter notion does not signify necessary agreement, merely a readiness of community participants to go along with a particular set of structures and outcomes. Specific cases of the latter may have emerged by way of declaration by some community-accepted and delegated authority, or more spontaneously through general practice. But their continued existence depends upon their being widely accepted in the community, an acceptance that is manifest, as I say, as a

preparedness of participants to go along with them, at least for the time being, and, indeed, usually with each participant doing so in the expectation that all other participants will similarly conform.

Money, I now want to suggest, is constituted and maintained as a particular instance of the positioning process, more specifically of the sort of process whereby the uses of artefacts and other objects are determined. In elaborating the manner in which money is so constituted, I briefly summarise, in the next few subsections, the *positioning theory of money* that I seek in due course below to compare with the (version of the) *credit theory of money* which underpins MMT.

The positioning theory of money

In brief,[3] members of a monetary community such as the modern UK accept (reveal a readiness to go along with) a system of value accounting, one that includes amongst its components an accepted unit of value (or of account), and also a money position which has associated with it a set of community accepted rights and obligations concerning how its occupant(s), *qua* positioned occupant(s) or money, is/are to be used. The latter rights and obligations basically determine that the primary use of money is as a general (community wide) means of payment, of discharging debts. They include an obligation placed on all creditors to accept the money in payment of debts when it is offered (unless a prior contract is agreed with a specific debtor, specifying some defined alternative means of payment), and so a right of any debtor to have a debt discharged thereby.

Although the community accepted rights and obligations governing the uses of money can be shaped in many ways, in practice their formulation, along with determination of the occupant of the money position, have tended to be guided by declarations of those to whom the community has delegated the authority so to declare. At a national level, this usually means the state, which currently, in many countries, means or includes something akin to a parliament.

The types of things that, in communities like the UK, are, or so I maintain, currently incorporated as occupants of the money position are forms of bank debt or liability, or, equivalently, forms of credit held on banks by their customers.

In fact, not only is it the case that money, currently, is positioned bank debt, but, significantly, all items of bank debt are created already positioned as money; they do not exist apart from being positioned money.

Thus, if, say, a *commercial* bank grants a loan to an individual customer, it thereupon promises to advance to a customer a given amount of the money. At that point an obligation of the bank to the customer is created on the spot, with the amount owed at some point recorded in the customer's account. However, the money thereby assigned to the customer, is also created on the spot. For it is constituted out of the very obligation simultaneously created.

[3] For a lengthy account see Lawson, 2019, chapters 5 and 6.

This has been the case ever since bank debt *qua* a *kind of thing* was at some point in the history of any relevant community first positioned (*qua* a *kind of thing*) as money. Thereafter all new instances of bank debt in that community emerge already constituted as money. That is, just as, say, once a national community X is formed, offspring of any two citizens of X usually arrive in the world already positioned as citizens of X, or once, say, a family is positioned in some community as royal, its offspring usually arrive in the world already positioned as royal, so, currently, any new item of bank debt to a customer arrives in the world already positioned as money. This money is recorded as a new entry (or increase in any existing entry) in the customer's bank account, indicating the amount available for use.

It is the case, of course, that when a commercial bank makes a loan to a private citizen, this process simultaneously results in a debt of the private citizen *to* the bank for the money so obtained/borrowed (on which an interest is paid). The latter, an asset of the bank, is in some literatures referred to as bank debt. This is *not* a terminology adopted here. My primary concern here is not with the situation of individuals, nor with accounting balances and such like (which are mainly concerned with values and distributions/allocations), but with the *constitution* and *nature* of money. It is the debts *of* banks *to* customers that are positioned as money, and I use the terminology of *bank debt* only for such bank liabilities. The money formed when it is specifically private or commercial bank debt that is so positioned, I refer to as *commercial bank money*.

Of course, not all commercial bank money recorded in an individual's account is obtained through the individual taking out loans. There are numerous ways money can be paid in by, or transferred to, an individual and recorded in the individual's account. But the account record shows the amount of money *qua* positioned commercial bank debt that is available for the individual to use. As I say, I refer to this money so recorded in the individual's commercial bank account as commercial bank money, though the latter is commonly also referred to as bank deposits or demand deposits.

Money is additionally similarly created by the central bank. That is, central bank debt, i.e., a debt *of* the central bank, a credit for its customers *on* the central bank (that arises through central bank lending or whatever) is also automatically positioned as money. This I shall refer to as *central bank money*. Such a central bank money held by a commercial bank constitutes the latter's reserves. These include "deposits" of the commercial bank at the central bank.

As I say, I refer throughout to the two noted cases of debt creation as resulting in *commercial bank money* and *central bank money* respectively, with the expressions *bank debt* and *bank money* used to cover *both* forms of money creation (and *not* just that of commercial banks, as is the practice of some contributors).

Finally, with money so constituted as positioned bank debt, it is of course mostly not observable. So, to make the monetary system workable, various items are used (positioned as additional components of the community's value accounting system) as *markers* of this money, or of those participants that hold it. Thus, bank notes are used to identify the part of money constituted as positioned central bank debt that is available for the public to hold, and electronic records are used to indicate the money constituted as customer deposit accounts whether as accounts of individuals at commercial banks or as accounts of commercial banks and so forth at the central bank.

So, if commercial bank money comprises the deposits of individual customers at commercial banks, commercial bank reserves comprise both its deposits at the central bank along with the commercial bank's holdings of central bank money that is marked or represented by cash.[4] Central bank money comprises the (positioned) central bank debt that is represented / marked by cash along with deposits of others held at the central bank.[5]

Many observers, of course, interpret the noted markers or tokens of money as money itself. However, cash and electronic entries are not money, at least as I am using the term, and nor is (any form of) bank debt *per se*. Rather money, currently, is any appropriately *positioned* form of bank debt that the cash and electronic entries serve to mark.

The positioning of debt

An obvious question to address at this point is why a form of debt/credit is involved in the constitution of money at all, if not to underpin money's debt discharging function. After all, if processes of social positioning work by way of harnessing capacities of items that are so positioned as system components, with the intent that these capacities thereupon serve some function of the system, this suggests that the bank debt currently positioned as money *does,* or is at least intended to*,* play some important role in the monetary process, however contingently. So perhaps after all money's general debt discharging powers do stem from properties of the debt/credit occupying the money position.

This is not so, however. The relevant point here is that the capacity of any form of bank debt/credit that is so harnessed is one that is neither peculiar, nor even essential, to debt/credit *per se*. It is a property that forms of bank debt happened to possess when, at a relevant point in history, they, *qua* specific kinds of thing, were initially positioned as money, but a property that was also possessed by other earlier occupants of the money position. This property is that of instilling a form of trust in a money so constituted out of it. Let me briefly elaborate.

All processes of social positioning – though concerned always with harnessing capacities relevant to the functioning of a system in which their possessors are being incorporated as components – are necessarily fallible. If it is community agreed rights and obligations that determine *how* any positioned kinds of thing *may*, or *ought* to, be used, it is capacities possessed by the eventual position occupants that determine whether, as positioned items, they are materially able to function successfully as intended. However, if the aim with positioning is usually to ensure that a successfully functioning system component is achieved, mistakes and accidents can happen. An individual with, say, extremely limited skills of diplomacy, may still be elected to the position/office of President or Prime Minister, or an individual with very poor lecturing skills may be appointed as a university professor, just as a professional footballer may break a leg, or a component of a plumbing system may spring a leak.

[4] Some commentators, seemingly including Wray (2012, p. xv), appear *not* to include a commercial bank's holdings of central bank debt marked by cash as part of the former's reserves. Differences here, if such they are, do not affect the analysis.
[5] I might note too that the *money supply* is a category usually taken to be comprised of money forms held by the public (i.e., money marked by cash and that recorded in commercial bank deposits), whilst the *monetary base* is a category used for all money marked by cash along with reserves held at the central bank, i.e., that which I am calling central bank money.

In the same fashion, a community's money can become somewhat dysfunctional. In an economic system in which money flows are paramount, a failure of the money takes the form of community participants being reluctant to hold it, which especially happens when it is feared that the money will lose value. Although the rights and obligations associated with money determine that its holders can be expected to be able to use it to cancel *existing* debts, they do not determine that individuals are willing to enter into new debts with others knowing that money must be accepted in payment if offered. In particular, there is nothing in these rights and obligations as typically formulated that prevent any potential creditor agreeing a contract with a potential debtor that stipulates that a specific means of payment whereby any debt that emerges is to be discharged, is something other than the local money (tourists to a community experiencing very high price inflation are regularly requested to agree in advance to pay for purchases, say for meals taken in restaurants, using "foreign currency".)

A community money can be said to be successful, then, when all community participants are willing to hold it. And the relevant capacity required of an item, for a money that is formed out of it (through positioning) to be successful in this sense, is that of instilling a communitywide form of trust that the resulting money will be a continuing stable store of value. Only where this is achieved will community participants be encouraged in the belief that money held will be continually easily passed to (accepted by) any others. Only if such trust is secured and sustained will a steady demand for money be evident.[6]

In short, a *successfully functioning* money, as opposed to money *per se*, not only is an accepted general means of payment but also possesses general purchasing power. Participants are willing continually to hold it. And the latter depends on its being trusted as a stable form of value easy to pass to others.

What kind of thing might be able (i.e., might possess the capacity) to engender an expectation that, if were it to be positioned as money, the result would be a money that is trusted in the required sense? The obvious candidate is something of a sort that prior to being positioned as money was found already to be a stable store of liquidity – and perhaps even used in a few limited quarters as a means of payment. This is not just an obvious, but also the usual, basis on which a money stuff is determined (see Lawson, 2018b). This was clearly the case with bank liabilities, i.e., forms of credit extended by banks, when they were first positioned as money. Once such a kind is positioned as money, of course, the maintenance of trust will likely also require continuous state backing and management. The latter will no doubt include the setting of tax payments in the community's unit of account, meaning that the community's money can be used to pay them. If the latter renders holding the money more attractive, it is hardly enough to secure a continuous stable demand.

Parenthetically, it is to this end of seeking to facilitate the noted form of trust that certain precious metals *qua valuable* commodities have also been positioned as money (the use of valuable/precious metals being a practice that credit theorists often regard as a puzzle); they have been utilised *not* (or not primarily*)* to determine the value of money (however much that has been misunderstood) but with the intention of facilitating at least a reasonable degree of trust in the money as a *liquid store* of value (see Lawson, 2018b, 2019).

[6] Trust is, of course, fundamental to all human action (see Jamie Morgan and Brendan Sheehan, 2015; Stephen Pratten, 2017; Lawson, 2019 chapter 1), though often difficult to sustain in the economic sphere, not least where money is involved.

To return to the central point so far, however, money is not the same thing as debt, even when constituted by the positioning of some form of bank debt. Money *qua* positioned bank debt may retain the properties of bank debt, but as *positioned* bank debt, i.e. as money, it has properties or uses that the bank debt *per se* lacks. Specifically, only money *qua* money can be used as a general means of payments. Its uses *qua* money derive from general community acceptance. Minsky was not quite right when he suggested that "everyone can create money; the problem is to get it accepted" (Minsky, 1986, p. 228). Rather it is only *through getting (community) acceptance* that money is created, that a kind of thing, including a form of debt, can become (positioned as) money. And it is only *as* money, not as a form of debt, that it can be everywhere used to make payments, and that people seek to hold it.[7]

I have to this point sketched the positioning theory of (the nature of) money, but not taken the space required to defend it at any length or in detail (for the latter see Lawson, 2016, 2018a, 2018b, 2019, chapters 5 and 6). Even the brief sketch provided, however, reveals that the conception of money elaborated not only fits with general experience of using money but, equally fundamentally, coheres with a seemingly sustainable account of how the whole of social reality is constituted, which is at least a property that it is desirable for a theory of money to possess.

MMT, as already noted, in effect rests on a rather different account of the nature of money, one at odds with the general social positioning conception. For MMT proponents, the properties of money, and specifically, government currency, derive directly from its being a form of debt/credit. The issue to examine, then, is how the two conceptions compare and specifically whether there are grounds to suppose that one is more plausible than the other. I shall be suggesting the positioning theory does better.

MMT on debt and its uses

As with most other adherents to the credit theory of money, proponents of MMT tend to defend the idea that money must be a form of debt/credit by way of seeking merely to debunk a conception of money that they take to be the only viable alternative. This is that money is a commodity. Schumpeter once wrote that "there are only two theories of money which deserve the name… the commodity theory and the claim theory. From their very nature they are incompatible" (Schumpeter, 1917, p. 649). And as we saw at the outset Wray too proceeds by way of first observing that "money is always debt; it cannot be a commodity…"

[7] At risk of appearing to complicate the argument I might note, for completeness, that debt/credit too is a social phenomenon, itself formed through positioning. In effect, in the case of money, the debt/credit is formed out of a promise to deliver that is made in a community that has agreed that all such promises are automatically positioned in the community as a debt/credit, the uses of the latter governed by rights and obligations. As part of the process, the community has agreed that the maker of the promise is a debtor and the other party the creditor, and that the obligation in question falls on the debtor to deliver on the promise positioned as debt, whilst the creditor has a right to expect satisfaction. Furthermore, certainly in communities like the modern UK, at least where the promise involves a form of money, it is also accepted that if X's debt (to a given amount) on another is delivered back to X by Y, who is in turn in debt to X, then X has an obligation to accept her or his own debt as discharging any debt to that amount that Y holds with X. So, a promise is positioned as a debt which in turn may be positioned as money. Most cases of social positioning in fact involve such forms of multiple nested positioning. Thus, when Obama was positioned as US President he had already been positioned as a "natural-born" US citizen, a gendered male, a member of the US Democratic Party, a member of the US Senate, and so on. At least some (but not all) of the prior positionings were essential for Obama to (have the right to) gain access to the position of US President.

The two theories – the credit and commodity theories of money – have been long in contention, each with many advocates. With this being so, an obvious inference to draw is that both contain insight, so that posing such a binary choice warrants caution. From the perspective of the positioning theory of money the choice offered by credit theorists is indeed a false one. After stating that money is always debt Wray, as earlier noted, adds "because if it [money] were [a commodity] that would mean a particular good is buying goods". Clearly a particular commodity cannot buy goods (as Marx amongst other theorists of "commodity money" is also very clear – see Lawson 2016). But the point of Wray stressing this in the manner he does is presumably to draw a contrast with how he supposes debt/credit, or at least a particular form of debt/credit, *can* be used, namely, to buy goods.

However, the reason that a commodity cannot buy goods, and more generally be a money, is the very reason that debt, in and of itself, also cannot buy goods and more generally be a money. For, or so I am arguing, a kind of thing, whatever the latter may be, can be incorporated in the money process only where a community, perhaps through the declarations or implicit agreement of some authority, *positions* it as money, whereupon the abilities of community participants to use it, *qua* money, to discharge debts, derive from community agreed rights and obligations, and do not depend on the kind of thing that occupies the money position. So certain commodities, just like forms of debt, may be (and indeed have been) positioned, and so incorporated, as a community's money (see Lawson, 2019).

Apart from criticising interpretations of the commodity theory, however, Wray does not really defend the debt/credit theory itself. Rather, with the commodity theory regarded as untenable, Wray proceeds on the assumption that the government currency, which is his focus, can only be a form of debt/credit. Let me then consider how this works out.

Currency as debt

If, as Wray supposes, currency is really a form of debt/credit, it ought to be enforceable / redeemable in something other than itself. So, a question pursued early on in Wray's analysis is how the currency, interpreted as debt, is redeemed. To answer this requires an understanding of the promise that lies behind, or is associated with, the currency *qua* debt. Wray reasons that promises written on UK bank notes are "misleading", that if a bank note is handed back, it will only be exchanged only for another bank note, which *prima facie* is not really a form of redeeming. So, it seems to follow that currency viewed as debt cannot be redeemed.

One explanation is that currency is not a form of debt after all. Rather than so concluding and so at this point abandoning the credit theory of money, however, Wray develops his argument in a manner that seeks to keep MMT consistent with the credit theory. It is through doing so, I shall suggest, that various other (perhaps more obvious) problems for MMT are created.

Wray proceeds, in fact, by suggesting that the relevant promise involved with currency relates to its being accepted as a means for paying tax debts, that the currency is really redeemed through being used to make tax payments, to meet the holder's tax obligations. The government taxes community participants, and the latter participants meet the resulting obligations *to* the government by handing over the currency, with this transaction being

interpreted as community participants returning the government's own IOUs as payment. Thus, Wray argues as follows:

> "The 'promise to pay' that is engraved on UK Pound notes is superfluous and really quite misleading. The notes should actually read 'I promise to accept this note in payment of taxes.' We know that the UK treasury will not really pay anything (other than another note) when the five Pound paper currency is presented. However, it will *and must* accept the note in payment of taxes. If it refuses to accept its own IOU in payment, it is defaulting on that IOU" (Wray, 2012, p. 49, emphasis in the original).

Wray further adds below:

> "This is really how government currency is redeemed – not for gold, but in payments made to the government […] the tax obligations to government are met by presenting the government's own IOUs to the tax collector" (Wray, 2012, pp 49-50).

At first sight the argument here appears to be straightforwardly erroneous. After all, the £5 note is a marker of that which I have been referring to as central bank money, and, however we view the central bank liabilities involved (i.e., regardless of whether the positioning theory is accepted) these liabilities have nothing to do with government debt as traditionally understood. That is, although Wray has identified an item that, in his own framework, is indeed a debt formed out of a promise, this is a debt not of the government but of the central bank. So, it is tempting to suppose that Wray is here confusing the central bank and the treasury, and so their respective liabilities. If this is so, Wray's argument falls at this point.

However, the MMT argument advanced by Wray, as I read it, though not always clearly elaborated, is more subtle than this. The point of focussing on the redeeming of the currency, or so it appears, is to suggest that the currency, when issued, incorporates a *government promise,* and one that is *additional* to any promises made by banks in creating their debts (or if not additional to, then perhaps somehow provides the content for, these bank promises – see below). This is a government promise to pay, constituting a debt to, the holder of currency, an IOU of the government that all understand can be redeemed by way of its holders using it to meet tax payments to the government. This is achieved by handing over government currency.

In so arguing, the vision seemingly held is one wherein the government is essentially seeking to provision itself by imposing taxes but must do so in a social context in which it needs to spend first in order that taxes can be paid. So, taxes are interpreted as in a sense driving spending. But the latter can happen just because spending involves employing a government IOU that can be used or returned in tax payments. So the whole thing appears like a highly coordinated activity, one wherein the government determines the community's unit of account, sets tax obligations in terms of it, and spends using currency not only denominated in terms of it, but carrying a government promise that it can be redeemed by way of returning it to the government in payment of tax obligations:

This, it seems to me, is how Wray reasons when, for example, he writes as follows:

> "The government first creates a money of account […] and then imposes tax obligations in that national money of account. […]. The government is then able to issue a currency that is also denominated in the same money of account […]. It is not necessary to "back" the currency with precious metal, nor is it necessary to enforce legal tender laws that require acceptance of the national currency […] *all the sovereign government needs to do is to promise* 'This note will be accepted in tax payment' [...]" (Wray, 2012, p. 50, emphasis added).

Thus interpreted, the basic argument made is a version of one long ago formulated by Alfred Mitchell Innes (1913, 1914) in advancing his credit theory of money. For both Wray and Innes, the government promise and so government debt/credit is a vital component of the monetary process. For Innes, at least, it is this government debt/credit that constitutes money itself (that is used in payments), and everything else associated with it is effectively an identifying token (so, for Innes, gold coins are the tokens that identify or mark government debt *qua* money).

However, in the MMT case the "everything else associated with" the government debt seemingly includes central bank debt, and there is plenty of scope for confusion concerning its status within the theory. For, to consider Innes' account as a contrast, when Innes argues that gold coins were *not* the money but mere tokens of the money (*qua* government debt), the gold content of the coins (*qua* mere tokens) is, if put to one side as puzzling, at least acknowledged. However, because central bank debt, unlike the gold (which it has replaced), is not visible, there is the risk of this component being (not even put aside as a puzzle, but) overlooked entirely as money markers or "tokens" like the £5 note are seemingly now viewed as markers or "tokens" of *merely* the postulated *additional* government promise or liability, where the latter itself assumes the mantle of money.

I am not suggesting that Wray does overlook the central bank debt. But it is not clear to me whether Wray supposes that it is somehow incorporated as part of the identifiers or tokens of government debt, or is considered to be replaced by, or manifests as, the latter, or indeed whether some other argument or line of reasoning is employed.

To come at the issue somewhat differently, a question that remains to be addressed is whether, and if so how, central bank debt itself is redeemed on the MMT account. This is not clear to me. Wray does suppose that the government and central bank are viewed as cooperating in the various economic activities underpinned by the imposing of government taxes. Indeed, for this reason he supposes that it is reasonable, for purposes of theorising, to analytically amalgamate the two bodies (the government and central bank) into just one called the state – to capture the coordinated manner of their transactions. This being so, it is perhaps presumed that the redeeming of the posited government IOU serves to redeem the central bank debt at the same time, or otherwise renders it superfluous. Or perhaps it is even held that, in making a loan, the central bank is enabled to make a promise regarding tax payments *on behalf of the government*. In this case the bank notes and electronic records do after all just mark a debt of (or credit on) the government redeemable through the paying of taxes. One way or another, there is more to be explained.

The picture then, if I am interpreting the argument at all correctly, is far from being intuitive or straightforward, and is not without its puzzles and risks of generating confusions. But whether, and if so how, the noted issues can be, or indeed are, resolved, I will not dwell on them here, not least because the challenges they provide are dwarfed by a yet further (and I suspect

irresolvable) problem for the theory, or so I now want to suggest. This is simply that, irrespective of how the various noted monetary items are interpreted, central existential claims advanced by the theory's proponents do not appear to be born out in reality. In particular, it is not at all clear that the putative government promise that lies at the heart of Wray's argument actually exists.

Nor, indeed, is it clear that any (let alone all) of the relevant parties to monetary interactions view such a promise as existing (irrespective of whether it does). The latter, though, matters if the argument is to be persuasive. For it is one thing to elaborate a theory that is suggestive of a macro mechanism that would render money a form of credit/debt; it is quite a different thing, and a far bigger step, to suppose that real world community members, including the government itself, actually view things in the manner portrayed. *Yet this does seem to be a requirement for the theory to have relevance*. It is difficult for the various parties to act on a government promise or obligation if none, or less than all, recognise such a thing to exist.

Wray does appear to recognise this requirement of knowledge and understanding on the part of community participants and does also suppose it to be fulfilled. Or rather there is a clear presupposition that *all* community participants do recognise items like bank notes etc., used by the government in spending, as marking *a credit on the government*. For this is the *only* explanation offered for the theory's claim that there exists both (1) a willingness by the government to receive these items as a means of discharging the tax obligations it lays on the community, and (2) a willingness by non-government participants to hold these items in the first place.

But as I say, there are no obvious signs or evidence that community participants, including the government, do actually view or understand things in the manner required of them. Clearly many economists even explicitly oppose the view elaborated, more still are unaware of it. And although, as noted, Innes, in 1913, when first advancing the "credit theory of money", defended the view in question, including the requirement that all participants understand that obligations of the sort described are involved, a year later he appears to view things differently. In fact, he noticeably recognises a need to argue instead (though not successfully – see Lawson 2019, chapter 6) that whatever it is that the "government thinks it is doing" when it spends and introduces coins (i.e. its own interpretation of whether tax credits are involved) this "is of no consequence" (Innes, 1914, p. 160), noting in particular that it "is true that a coin does not purport to convey an obligation". Innes acknowledged more generally indeed that few community participants, including theorists of money, recognised the scenario as formulated as his credit theory of money.

The picture, then, is far from being convincing, and not without its puzzles and risks of generating confusions. Especially questionable is a posited government promise, that (1) seemingly does not (or does not obviously) exist, (2) emerges almost as something conjured out of a hat merely to dissolve a puzzle of a putative debt held by community participants with nothing obvious to redeem it, and (3) must, if a conflation of central bank and treasury liabilities is to be avoided, be regarded as either additional to, or providing the content to, promises of the central bank in providing its own debts facilitating actual spending (either way rendering the central bank debt itself, as with precious metals that have figured in prior times, somewhat difficult to accommodate in theorising the monetary process).

The problems of MMT from the perspective of the positioning theory of money

If the noted features render MMT as formulated somewhat questionable, it warrants emphasis that they all arise because of an attachment of the proponents of MMT to an especially suspect credit theory of money. Once, or if, we instead accept the positioning theory of money, not only are everyday monetary transactions more easily accounted for – i.e., without the need to invoke a government promise that both is dubious in itself and comes with overly demanding implausible requirements for how participants view and understand the situation -- but are so in a manner that does not involve any obvious additional puzzles of the noted sort.

For, simply put, once the positioning theory is accepted, it can be immediately seen that currency is *not* after all a form of debt but rather positioned debt, with its uses governed by (state-influenced) community accepted rights and obligations. In consequence, there is no redeeming of currency anyway, and so no puzzle (about how redeeming is be achieved) to be solved. Instead, it is the community accepted rights and obligations themselves that determine that the government must accept the community's currency, or money, when it is offered in payment of taxes. That basically is the whole story. No additional dubious government promise of any sort is required.

Of course, forms of bank debt that, according to the positioning theory, occupy the money position, must themselves, as with all forms of debt, *qua* debt, be strictly redeemable in some way. And, indeed, they are, but are so, and can be seen so to be, without the need to invoke any additional promises made by the government. For once we recognise that bank debt and positioned bank debt *qua* money are conceptually distinct, were historically physically distinct, but that bank debt, currently, never exists apart from being the stuff of the money, we can more clearly see what the redeeming of bank debt involves. Thus, consider a specific item of bank money *under its aspect of being an instance of bank debt*, say an item of central bank debt that, positioned as money, is marked by a £5 note. If, *qua bank debt*, its individual possessor takes it to the bank of England to have it redeemed, the individual will indeed in effect *receive money* from the bank *in return for the bank debt* handed in. It is just because, currently, (1) the *bank debt handed in* cannot be separated from the money that it is used to constitute, and (2) the *money in turn received* by the individual takes the form of positioned bank debt, that the exchange in practical terms will appear as one of like for like. But strictly speaking bank debt can be, in the manner described, redeemed for money.

The peculiarity of this transaction taking the appearance of an exchange of like for like, is merely a quirk of a money system that positions bank debt as the occupant of the money position (where the "promise to pay" that is engraved on a note dates from a time when this exchange involved a form of bank debt handed over *that was not yet positioned as money*). When a commodity such as gold was so positioned this brought its own very different quirks, not least because gold *qua* commodity had, and has, an independent market value. All such seemingly paradoxical, and other potentially misleading, lines of thought are avoided, analytically speaking, by acknowledging that positioning is involved in the constitution of money, and thereupon viewing a positioned form of debt (or form of commodity, etc.), not under its aspect of debt (or a commodity, etc.) but simply as money – a specific component of the community's system of value accounting the uses of which are determined by agreed rights and obligations falling on all community participants.

To tie up the remaining issues, it is simply because there is no need to posit the noted government promise (as a solution to the puzzle of how currency interpreted as debt is to be

redeemed) that the various derivative additional puzzles facing MMT do not arise for the positioning framework. In particular, there is no need for, or question of, either incorporating bank debt with banknotes interpreted as tokens of money, or otherwise interpreting bank debt as the manifestation of a government promise etc., or indeed of adopting any other related strategy. Rather, according to the positioning theory, when/if bank debt or gold etc., are employed in the constitution of money, they serve *not* as mere markers or some other seemingly unnecessary component, of money, but as vital material *occupants of the money position*, being accepted as such because of a shared capacity to instil a general trust that a money so constituted by way of social positioning will be a relatively stable store of value that is easy to pass on.

Most significantly of all, finally, if the positioning theory is accepted, the requirements placed on community participants relating to how they understand monetary interactions no longer strain credibility. Rather, all that is required in order that the monetary system is able to function as it currently does, is that community participants understand money as a community-accepted general means of payment. Money is simply something that, as buyers, they typically have a right to use in payment and, as sellers, they typically have a community accepted obligation to accept. That is all that community participants basically need to comprehend.

If such a simple and straightforward account is seen to be the more plausible and adequate when directly contrasted with that which is effectively forced on MMT through its proponents adhering to the alternative credit theory of money, then, in a world wherein most community-wide social phenomena are so constituted that their uses are governed by community-accepted rights and obligations, the noted positioning conception of money, being a conforming instance, appears more compelling indeed.[8]

So, all things considered there is good reason to reject the credit theory of money that underpins MMT and to embrace instead the clearly more realistic positioning theory alternative.[9] According to it, to repeat once more, money is constituted through community

[8] Parenthetically, it may appear to be a challenge to the supposed "simplicity" and "straightforwardness" that I am claiming for the assessment defended, that tax payments received at the government pay-offices mostly comprise central bank money, whereas ordinary community participants do not pay in cash or have access to deposits at the central bank. But this situation, if such is indeed the case, does not (or would not) in any way challenge the forgoing assessment. For whether taxpayers recognise it or not – and there is no need or reason to suppose that many do – commercial banks usually and automatically, without need of explicit instruction from the taxpayers themselves (although direction may be received from the treasury), debit the relevant taxpayer's deposit account by the amount of the tax payments submitted, and pass an equal amount of their own central bank money or reserves to the treasury. All that community participants need to take on board in this regard is that on making a bank transfer to the tax office (or after sending off a cheque) their deposit holdings in the commercial bank are reduced. An understanding of the noted few elements, all resting on community acceptance, are enough for the monetary processes to work, including those of government spending and taxing, and for a continued existence of a monetary demand throughout the community.

[9] I might, for completeness, very briefly note the possibility that some supporters of MMT, faced with the noted situation, respond by giving up on being realistic and opt instead for a view wherein the electronic and cash markers of (that which I am calling) forms of bank money are treated *merely as if* they mark or represent a government IOU to community participants. Of course, if viewing things in this *merely as if* manner appears on the face of things to be viable, this is just because, under the prevailing conditions, the possible uses of money "justified" on such a basis happen to be a subset of the uses rendered feasible in the real world on a quite different basis, namely by way of community acceptance, typically involving government declaration. The relevant question though is "why bother?" If, as has been seen to be the case, the actual workings of the real world are easy to understand, and rather simpler and more straightforward than as portrayed in MMT, there is nothing to be gained from taking such a path – apart from maintaining adherence to the credit theory. Moreover, it is only if the real-world causal processes

acceptance. And in communities like the modern UK, for the time being at least, it is everywhere accepted that money takes the form of positioned bank debt with uses determined by equally accepted rights and obligations falling on community participants, with some such rights and obligations bearing on the making of payments to government.

Legal tender laws

Of course, and as already stressed the community acceptance of ways of proceeding, even when resulting from state declarations (including those bearing on the means of meeting tax obligations), may not be sufficient to produce a *continuously stable demand* for money. The latter additionally requires that the accepted money be regarded as a stable store of liquidity. This is so even if the noted state declarations, where they occur, result in, or take the form of, formalised *legal tender laws*.

I mention the latter only because, with such laws being formalised and so apparent to all, their existence offers a very clear challenge for debt/credit theorists to address. For there is never a need for such laws if, in the manner supposed by debt/credit theorists, the debt discharging powers of money derive solely from the properties of debt/credit itself. Worse still for the debt/credit theorist, such a role for law-making presents the possibility for legislatures to determine thereby that types of commodities (or some other kind of thing apart from debt) can be legally positioned as money or "legal tender" (as I elsewhere argue has indeed frequently been the case, with local US legislatures even creating phenomena like tobacco money [in the US colonial period, in certain US States]; see Lawson 2019, chapter 6).

Unsurprisingly, then, Wray, in the manner of other credit theorists, makes a point of explicitly dismissing any suggestion that legal tender laws have ever contributed much if anything to the functioning of money, pointing out that "throughout history there are examples of governments that passed legal tender laws, but still could not create a demand for their currencies" (Wray, 2012, p. 46).

But, for reasons already noted, this establishes little. The demand for money depends on trust. And trust may be absent even where legal tender laws are efficacious. Indeed, as earlier noted, when trust declines, the response widely observed is for transacting parties to agree contracts of exchange that stipulate explicitly that debts that result are to be discharged using a means of payment other than the local money. As such, legal tender laws will only encourage the latter behaviour. For the laws apply only to conditions where such prior contracts are *not* made, and so typically stipulate only that, in the absence of contracts that stipulate otherwise, where a debtor makes an offer to pay off a debt in legal tender that is refused, this debtor cannot thereafter be sued for failing to repay. As such, observations of the above noted prior contracting practices might even be best interpreted as support for the efficacy of legal tender laws; certainly, they are not an argument against their effectiveness. Legal tender laws remain a problem for proponents of the credit theory to accommodate.[10]

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involved are viewed realistically, that capable interventions are rendered feasible *in all scenarios*. Giving up on the credit theory, I suggest, is a far smaller price to pay than abandoning the goal of being realistic.

[10] Actually, Wray goes further and suggests too that "there are examples of governments that passed legal tender laws" and yet "their currencies […] were not accepted in private payments" and "even rejected in payment to government" (*ibid*, p. 46). That is, there have been occasions wherein money is not only not accepted as a form of purchasing power but not even accepted as a general means of

All things considered, then, there are numerous good reasons to reject the credit theory of money such as is embraced by proponents of MMT. An explanatorily more powerful and useful conception of money is of it being a specific component of the community's system of value accounting, determined through a positioning process whereby a kind of thing with appropriate capacities is incorporated as this component, with uses governed by rights and obligations accepted throughout the community, very often resulting from state declaration. As such, money can be viewed as being constituted via a process of just the sort at work in the creation, reproduction and transformation of all other social phenomena (see Lawson, 2019). Imposing on this process various additional requirements in order to fit with the credit theory of money merely strains credibility, unnecessarily imposes a macro-functionalist logic on the economic interactions of all community participants akin to that undertaken in certain "mainstream" accounts,[11] and of course leaves aspects of monetary history, when (valuable) commodities were positioned as money, difficult to render intelligible.

The influence of Keynes

Somewhat parenthetically, perhaps, and finally and very briefly, I note that it is feasible that, for some, the seeming attractiveness of the MMT perspective and analysis, including the idea of money as a debt owing by the state, may have been encouraged by a reading of Keynes on the nature of money.[12] MMT theorists (or anyway many of those who have adopted the theory) appear to acknowledge Keynes as a central inspiration, and some indeed identify as Keynesian; and Keynes does talk of the state in the context of theorising money's nature, and notably combines all forms of money, apart from commercial bank money, and refers to the combination explicitly as "State money" (and also as "money proper"):

> "At the cost of not conforming entirely with current usage, I propose to include as State-Money not only money which is itself compulsory legal-tender, but also money which the State or the central bank undertakes to accept in payments to itself or to exchange for compulsory legal-tender money. Thus, most present-day bank notes, and even central bank deposits, are here classified as State money […]" (Keynes, 1971[1930], p. 6).

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payment of existing debts where there is an obligation of the creditor to do so, including by the state in regard to the paying of taxes.
Situations such as these, I suggest, if indeed they occur, merely serve (or would serve) as a reminder that certain periods in history have experienced a very significant malfunctioning in, or anyway disruption to, the accepted monetary system *however it works*. Certainly, they do nothing to provide relative support to Wray's account of money.
The point, here, is that the positioning and debt theories of money *both* recognise obligations of the state to accept money in payment of taxes; they differ, rather, in accounting for *how* these obligations are established. So, any occasion of a refusal of the state to meet its obligations, if this happened (or were to do so) bears not at all on which account is the more relevant. Rather, as I say, the observations in question, if on actual events, are best interpreted as a reminder that, as with any other social system, there are periods in which the monetary system does not always work especially well.

[11] For example, the rational expectations hypothesis and Menger's account of the emergence of money. I put the term *mainstream* in quotation marks in the main text because, currently, mainstream economics is in fact identified not by any substantive theories but rather by the emphasis of its contributors on methods of mathematical modelling. That said the popularity of both of the noted theories no doubt stem from the fact that they (especially the former) readily lend themselves to the endeavour of mathematical modelling.

[12] I do refer here only to Keynes' account of the nature of money, including State money, not to his multiplier analysis etc.

Furthermore, Keynes does make explicit reference to "a debt owing by the State" (Keynes, 1971[1930], p. 5).

It is perhaps significant in this regard, then, that when Wray turns to discussing the *nature* of money specifically, he acknowledges that his "exposition" will "rely more on Keynes's theory" (Wray, 2012, p. 264). Furthermore, the equally relevant chapter on "banking and central banking" opens by way of Wray giving a nod to Keynes in stressing that, according to Keynes, all modern money systems are "state money systems in which the sovereign chooses a money of account and then imposes tax liabilities in that unit. It can then issue currency used to pay taxes" (Wray, 2012, p. 76). The latter is certainly Keynes' assessment.

After making the latter observations, though, Wray soon ties them to the additional claim that a "national government" "promises only to accept its own IOUs in payments made to itself (mostly tax payments, but also payments of fees and fines). This is the necessary and fundamental promise made: the issuer of an IOU must accept that IOU in payment" (Wray, 2012 p. 76).

It is not clear if Wray, at this point, is still supposing himself to be in keeping with Keynes' conception of modern money. In case he is, it is worth emphasising that Keynes does not so proceed. This fact is perhaps worth noting anyway, given that those accepting MMT do so often thinking they are adopting a Keynesian position. In fact, I shall very briefly suggest that Keynes in effect adheres instead to the positioning theory of (the nature) of money.

Indeed, right from the opening sentences of his *A Treatise on Money,* Keynes, though employing the notion of a *money of account*, is quick to distinguish it from debt, and to distinguish both notions from money:

> "Money of account, namely that in which debts and prices and general purchasing power are expressed […] comes into existence along with debts, which are contracts for deferred payment [....].
>
> Money itself […is] that by delivery of which debt contracts and price contracts are discharged, and in the shape of which a store of general purchasing power is held […]" (Keynes, 1971[1930], p. 3).

Money then is distinct from debt, the latter term referring to the sorts of things that money is used to discharge.

Further, when mentioning specifically "a debt owing by the state", Keynes refers to central bank debt. He does not refer to an implicit government promise involved in spending. Rather any powers of payment involving central bank debt arise simply and only through government declaration. Specifically, the State is able (and indeed choses) to:

> "use its chartalist prerogative to declare that the [central bank] debt itself is an acceptable discharge of a liability" (Keynes, 1971[1930], p. 5).

In short, for Keynes, central bank debt can be used in the payment of taxes just and only because, and when, it is positioned by way of state declaration as money, with rights and obligations assigned thereby to appropriate parties that render it a general means of payment. Keynes refers to such positioned central bank debt so constituted as *representative money*.

Of course, Keynes, in making his argument, does not employ the terminology of social *positioning* explicitly, so it may appear that (especially in the passage extracted above) I am misrepresenting him here, or at least reading too much into his writings.

However, when describing a money system, and identifying money as that which can be used as the community's general means of payment, Keynes does distinguish, and include within this system both of, a "title" (or "name" or "description") and the money itself as a "thing" that answers to the title. And in comparing and differentiating these two features Keynes observes that the relevant "difference is like that between the king of England (whoever he may be) and King George" (pp. 3, 4). This distinction is clearly that of a position (king of England) and a positioned occupant (King George) – with George being the position occupant when Keynes was writing.[13] Moreover, Keynes stresses that it "is for the State to declare, when the time comes, who the king of England is" (Keynes 1971[1930], p. 4), i.e., it is the State that determines the occupant of the position who gets to access the associated royal rights and obligations.

The royal analogy is drawn to convey the sense in which, in the case of money, "the thing can change while the description [or title or name] stays the same" (*ibid*, p. 3), and how any current money thing is determined. Thus, if, when Keynes was writing, the money or "thing" answering to the title or name , i.e., the positioned occupant of the money position, was, as noted, *representative money*, and if in "the 18th century commodity money was […] the rule" (p. 14), Keynes' central point is that it is always the case that the "the State […] claims the right to determine and declare *what thing* corresponds to the name, and to vary its declaration from time to time" (*ibid*, p. 4), a situation that has prevailed "for some four thousand years at least" (p. 4)

I suggest, then, that Keynes does in effect conceive money as a positioned item. A money stuff gets to be money in just the sense that George became positioned as King George (or Barack Obama came to be US President Obama). This reasoning clearly informs Keynes' assessment that the debt discharging powers of money are not somehow features intrinsic to, or otherwise directly associated with, any contingent occupant of the money position, but rather are always properties associated with money *qua* a positioned thing itself, and determined by community acceptance, guided by State declaration.

In fact, Keynes goes further still in suggesting (perhaps in anticipation of ongoing debates) that when a form of debt is constituted (positioned) as money it is best never even to think of money so created in terms of the debt involved, as this would likely mislead as to how monetary processes work, not least in supposing that money itself can be redeemed:

[13] It is true that Keynes additionally equates the *title* to the community specific *money of account*. This has no doubt confused interpreters of argument. The point here, though, is that through social positioning not only do positions and statuses of position*ed* occupants often receive the same or a similar name or title - as is the case with, say, professor (the person appointed to the position "professor" gains the title "professor"), lecturer or US President -- but in the case of specific communities' monies (as opposed to money *per se*) the name or "title" used for *both* the money and the money position is frequently borrowed from the unit of account. Thus, in the US, for example, the unit of account, namely the *dollar*, is also used in colloquial fashion as name for items of the local money, and the local money position. Thus, individuals talk of holding dollars etc. This naming practice appears to underpin Keynes' comment's here. Clearly, where the positioning framework is not explicitly elaborated, such a naming practice easily results in a conflation of any two or of all of the three distinct kinds of thing (unit of account, money position, and money), a conflation that Keynes, with his implicit recognition of the positioning framework, does, as we saw above, clearly avoid.

> "When, however, what was merely a debt has become money proper, it has changed its character and should no longer be reckoned as a debt, since it is of the essence of a debt to be enforceable of something other than itself. To regard [it] even when it conforms to an objective standard, as still a debt will suggest false analogies" (Keynes, 1971[1930], p. 6).

In summary, community debts are everywhere discharged with money *qua* money, simply because it is money itself – *whatever the kind of thing that happens to occupy the money position* – that is accepted throughout the community to serve as the general means of payment. Money in its different forms, like all positioned items, is, in its creation, and as we have already seen, accompanied by community accepted and determined rights and obligations that fall on all members of the relevant community, including the state, regarding its use.

Final comments

If MMT's account of the nature of money can benefit from rethinking and reformulation, so, I might note in concluding, does (or this includes) its history of money, a major feature of Wray's book. For according to this history, money has always been debt/credit.

On this latter view, when commodities have been employed in monetary transactions they have been so only as tokens of debt/credit and not as money. An obvious challenge here for the debt/credit theorist, one already very briefly touched upon, is to explain why the commodities used were so often highly valued ones, if not in an effort to ensure that the money, *formed by positioning the valuable items as money itself*, was trusted as a store of liquid value. If they merely served as tokens why not, at least where feasible, just apply a stamp (a mechanism to avoid counterfeiting and to control supply) to any old (relatively worthless) item?

Wray, like other debt/credit theorists, does recognise this as a puzzle for the history of money he offers ("So what were coins and why did they contain precious metal? To be sure, we do not know" Wray, 2012, p. 165); but in offering some speculations he ignores the most obvious explanation.

All of social reality, then, or so I maintain, is constituted through processes of social positioning that depend on community agreement. And in all cases, the *positioned* item (or human individual) is essentially different from and has more uses (has access to more rights and obligations) than does the item (or person) positioned. As an instance of all this, money, constituted by community acceptance, has uses, including those of meeting tax obligations, that transcend those of any form of debt/credit, even when the latter occupies the money position. Meanwhile, money's purchasing powers derive from a generalised trust placed in the money (when it is) that it is a stable form of liquid value.

In short, the debt discharging power of any successful money ultimately rests on community acceptance which, in modern times at least, works typically through government or state acceptance including regulation. It is such state regulation that determines a money's constitution, and typically its powers and so uses, including the meeting of any tax obligations specifically, just as state activity is required to maintain a level of trust in different forms of money as relatively stable stores of liquid value. In short, MMT, I am suggesting, ought really

to give an even greater emphasis than it already does to issues of state regulation, through abandoning any reliance upon the debt/credit theory of the nature of money as well as (or including) (aspects of) the credit theory's account of money's history.

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Author contact: tony.lawson@econ.cam.ac.uk

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The sleights of hand of MMT

Anne Mayhew[1] [University of Tennessee, USA]

I count myself as one of those friendly critics who applaud several of the major MMT contributions to our understanding of the modern American economy. Among these contributions are the emphasis put on

- the endogeneity of money;
- the importance of using of a flow-of-funds approach in analysis of the macroeconomy;
- detailed descriptions of how the FED (Federal Reserve System) actually operates, details usually missing from texts.

And from these three emphases the central conclusion of MMT is that the availability of space for fiscal expansion is larger than commonly understood. These three emphases are used to construct a forceful rejection of the argument that financial constraints can require austerity in economies with unused non-financial resources. Although much of the analysis has been focused on the U.S. economy, the MMT attack on austerity policies as necessary also has much wider application. This I also applaud.

I am, however, a critic, because in their pursuit of policy relevance, MMT advocates too often offer apparently simple solutions to complex issues of political economy. That they do so in the cause of political relevance and journalistic attention does not absolve them of responsibility for over simplifying debate about very serious economic issues. My criticism, and I suspect that of many others, is somewhat difficult to articulate because it rests upon the failure of MMT advocates to use, or at least fully use in practice, the very foundational ideas for which I applaud them. That is, in carrying out their analysis, MMT advocates often come ever so close to denying the endogeneity of money; they use a severely truncated form of flow-of-funds analysis; they do not employ an accurate description of the relationship of the FED to the rest of government. In each of these three cases sleight of hand is used so that it is difficult to pinpoint the exact difference between foundational proposition and analysis/prescription in practice. Now you see it, now you don't is the lasting impression that I, a friendly critic, often take away from arguments about the importance and validity of MMT. I do not mean to suggest that the MMT advocates are deliberately duplicitous. Instead, I suggest that in their understandable zeal to make policy makers and the public understand how unnecessary governmental austerity most often is, the subtleties of the foundational principles are elided in the interests of journalistic simplicity.

In the pages that follow I will try to explain my understanding of these sleights of hand and discuss why they matter. There is now an enormous literature from advocates of MMT and from their critics, friendly and otherwise. In this essay I do not say anything that has not already been said by Lavoie, Palley, and others.[2] My intent is to try to explain why I as a heterodox and Institutionalist economist continue, after a long struggle with the writings of MMT advocates and their critics, to find MMT both appealing and yet lacking.

[1] Professor Emerita, University of Tennessee.
[2] I also thank Sherry Kasper, Chris Brown, and Eric Hake for our discussions about MMT and for their useful suggestions about the arguments of this essay.

In writing this essay I have relied heavily upon the recently published *Macroeconomics* by William Mitchell, L. Randall Wray, and Martin Watts, which I take to be the current definitive statement of MMT. In some cases, as noted in citations, I have supplemented this text with passages from recent email discussions.

Is money really endogenous in the MMT model?

There is, especially in political statements made by MMT advocates, a built-in conflict between true money endogeneity and the desire to make money provision the lever by which governments can achieve the macroeconomic goals of full employment and relative price stability. There is no doubt that Randy Wray, probably the leading spokesperson for MMT, is, and has been throughout his scholarly career, an advocate of the idea that the flow of money through economic systems is determined by the actions of multiple actors within the system rather than policy makers alone. This is an idea that has been around for a century or more and an idea that played a central role in American Institutionalist thought (Mitchell, Copeland, Dillard). And yet, this idea has been eroded in practice by the centrality in MMT writing of the idea of a special relationship between money and government. This erosion makes it appear, or perhaps makes it out to be the case, that money, and the ease with which it is available, can be determined by government. But that is inconsistent with true endogeneity.

The first bit of sleight of hand often used in MMT arguments to get around this inconvenient reality has been an emphasis on Chartalism, which is the thesis that money originates with government. Chartalism has been offered by Wray and others as an alternative to the "barter story" that is often to be found in standard textbooks, a story in which money is initially used as an efficiency move in imaginary economies organized by market exchange. While I completely agree that the barter story is wildly inaccurate as a description of human history, it has long been a puzzle to me why Wray and others have been insistent on some form of Chartalism and insistent on searching for the origins of money at all[3] However, Chartalism remains closely associated with MMT and this makes some sense if it seen as part of a move to establish a special relationship between the state and the flow of money. Assertion of a special relationship between money and the state is crucial to the sleight of hand required to make money endogeneity and central bank control of money consistent.

In their text, Mitchell, Wray, and Watts also assert a special relationship by, in effect, equating determination of a unit of account and issuance of currency denominated in that account (p. 134). Whereas in the barter story, gold or other precious metal serves as the backing for money used in exchange, in the MMT account, after a unit of account is determined, the national government then gives *the* "backing" to the money by accepting the fiat currency in payment of taxes. Of course, it is true that acceptance of payment of tax obligations provides some "backing," but it is also true that dollars in the U.S., pounds in the U.K. and etc. are "backed" by the willingness of businesses and others to accept them as payment. To single out the power of taxation as the primary source of acceptability of our dollars or pounds or pesos in their various forms is to use a logical relationship to establish causal sequence: first taxes give value to dollars and then dollars have value in other uses. It is beyond the scope of

[3] Actually, in the new MMT text the word Chartalism does not appear in the index and in the chapter on "Economic History and the Rise of Capitalism," the authors say that "money's origins are not really known" (Mitchell, Wray, Watts, p. 39). However, in arguing the case for MMT in a recent exchange on the email list AFEEMAIL, Wray continues to refer to the "state theory of money", Chartalism, as an important part of MMT (May 4, 2019).

this essay to provide a detailed explanation of why this is not an historically accurate account of the development of the various units of account and of banking in the western world. Suffice to say that it is not good history to say that first governments established units of account, then they taxed, and then money denominated in the chosen units had value. In the U.S., in the U.K. and generally in Western history the development of units of account and the growth of monetization were more or less simultaneous processes. In Western Europe, the growth of nation states and of taxation followed.[4] In MMT it is, however, important to simplify the actual historical process so as to give primacy to government in determining the supply of money.

The importance of Chartalism in MMT arguments also has the effect of tying modern money to the idea of money as physical, storable stuff. The fact is that modern money is as non-physical as it gets. Even though this is widely recognized to be the case, treatment of money as "liquidity," as a liquid that flows through the economy serves to reinforce the idea of money as stuff. Morris Copeland, who created the moneyflows accounts that in the U.S. became the FED-published flow-of-funds accounts, argued that money in the modern world should be thought of as being like electricity. Electricity materializes only when someone turns on a switch. Until that happens electricity does not exist even though the capacity to produce it is there (Copeland 1952; Mayhew, 2010). Electricity is energy as is money in almost all of its modern forms.

By relying on Chartalism MMT advocates carry over the idea of money as stuff and simply do not go far enough in saying that it isn't until it is. The common claim that the FED injects money into the economic system simply makes no sense and MMTers should say so. *Reserves,* meaning the capacity to spend, increased but the amount of money does not increase. Money is measured by spending in our economies where agents draw on pre-existing lines of credit (including credit cards) to finance payrolls, home improvements, financial assets, or whatever.

In effect, MMT advocates, by adopting a state money story, and by using sleight of hand to convert money into a physical thing, convert MMT into a form of monetarism while still allowing its advocates to play lip service to endogeneity. It comes closer to the truth to say that in commercial (monetized) economies a diversity of monies is used, with state authorized money often having greater legitimacy in times of economic turbulence. [5] The history of

[4] Actually, in the U.S. the dollar was established as the official unit of account as part of the breakaway from English rule. The use of a unit of account known as the dollar was common before the official act in 1792 but referred to the "pieces of eight" that made up the widely circulating thaler/dollar earned by trade with Spanish colonies. Mitchell, Wray, and Watts refer to the experience of the U.S. colonies to support their contention that taxation gives value to money and in the case of the bills of credit issued by the various colonies this was true. There were competing monies circulating in the colonies and the bills were issued to pay for specific projects and retired as taxes were collected. Care needs to be taken in generalizing this American colonial experience.

[5] Bell (2001) surveys some aspects of monetary history and of the history of thought about money to argue that state authorized money must necessarily be the most important of monies because of the primacy of the use of money to pay taxes. My statement that state authorized money often has greater legitimacy in times of economic turbulence differs from Bell's conclusion in that I do not think or assume that the ability to pay taxes with a particular form is the determinant of legitimacy. In fact, I have often thought it amusing to consider that the most statish of all state monies in the U.S. – the Federal Reserve Notes that constitute our cash – cannot be used to pay taxes. Internal Revenue forms say quite explicitly that cash should not be sent in payment of tax obligation. This is one indication that there is, in MMT literature, an underlying confusion between establishment of unit of account and the legal standing of different contractual forms and the legal enforceability of various kinds of contracts that bedevils discussion of just what it is that constitutes "state money." But analysis of that confusion goes well beyond the scope of this paper.

Central Banking is in many ways a history of state efforts to control diversity and to alleviate the panic that results when there are runs from less to more legitimate forms of money/credit.

Truncating the flow-of-funds analysis

MMT uses a sectoral balances framework, which, with some manipulation, can be made consistent with either the national accounts that are standard in textbooks or with a flow of funds approach. Mitchell, Wray, and Watts credit Lawrence Ritter in the U.S. and the Cambridge Economic Policy Group in the U.K. with development of this approach. An earlier version developed by Morris Copeland with the guidance of Wesley C. Mitchell, founder of the NBER, formed the basis of the flow-of-funds accounts that are now issued quarterly by the Federal Reserve (Copeland, 1952). To understand the importance of a true moneyflows analysis and the difference between such analysis and the truncated sectoral balances approach of MMT, it is useful to review a little history.

What Copeland, did was to trace the flow of funds, where funds are defined as whatever form of credit/money is used, to complete transactions. (Note that completion of transactions defines money in this analysis.) Payers and recipients of funds are grouped into sectors: households, businesses, governments, foreigners. In Copeland's moneyflow analysis there was no imputation as there is in national income accounting. The funds had to move from one economic unit to another to be counted. Nor were non-paid but "accrued" sums included. Funds, again including both "money" and "credit" had to actually change hands to be counted.

While it was true in this Copeland model that what was paid always equaled what was received, it was also true that the analysis gave a good sense of the ability of the different sectors to take financial actions in the future. In other words, Copeland's moneyflow analysis was a way of foretelling the future rather than a simple snapshot of the present. The portfolio of a sector is treated as a major determinant of the ability of that sector to borrow and spend more or of a need for retrenchment. Here is the way Copeland explained it. At any time, the different sectors may be bulls (expanding spending), bears (retrenching), or sheep (just going along for the ride),

> "…according to the way they exercise discretion over their ordinary expenditures, and a fourth class as influencing the moneyflows of other transactors (discretion modifiers). The first three classes are nonoverlapping; together they account for all transactions… *The composition and relative importance of these three classes of transactors change from one period to another.* The fourth class of transactors overlaps the other three. Bull, bears or sheep may influence the money flows of other transactors. The Federal government and the banking sector are important discretion modifiers" (Copeland, 1952, pp. xxix-xxx; italics added).

What this means is that the household sector as well as the business sector could attempt to borrow more and if the banking sector is willing, become bulls. Particularly in an economy in which it has become commonplace for households to have credit cards and lines of credit, and as was true up until 2008, easy access to second mortgages, households can become quite bullish, or, as in this summer of 2019, worrisomely bearish.

I am sure that MMTers would agree, but their truncated form of sectoral flow analysis does not lend itself to emphasis on this point. MMT sectoral analysis, based as it is upon the amalgamation of national income accounting practices with a flow of funds analysis, becomes a statement about what must be true at any given level of income at which a statistical snapshot is taken: GDP = C + I + G + NX = C + S + Tnet + NX.[6] Mitchell, Wray and Watts write that:

> "Importantly, transactions within the private domestic sector do not alter the net financial position of that sector overall. … The only way the private domestic sector can increase its net financial assets overall is through transactions with the government or external sector, for example, by acquiring a government bond (or foreign corporate bond). These two points are key MMT insights" (p.95).

In the MMT text, Mitchell, Wray and Watts give almost no attention to the important role of consumer agency and, while they do talk of fluctuations in business investment expenditures and causes of those fluctuations, those too take a backseat to the role of government expenditures.

The implication of the statement that, "transactions within the private domestic sector do not alter the net financial position of that sector overall" is that households and businesses will adjust to what government does. There may be shifts in net flows as between the household and business sectors but it is **G**overnment that will determine the level of national income.

Partly from a failure to recognize the important difference between a thorough flow-of-funds analysis and the National Income and Product Accounts, but also from an understandable desire to show what the government sector **can** do, government is put in the driver's seat. Mitchell, Wray, and Watts are careful to say that the flow of funds approach is" based on accounting principles rather than being a behavioral (theoretical) framework for understanding…" (p. 96). But throughout the text and in much of the other writing of MMT advocates, their sectoral flows analysis becomes, even if by default, the behavioral framework that is available. The reasonable conclusion is that Government will be the sector that will determine the level of national income, the level of employment, and how rapidly the overall price level will rise or fall. The private sector plays a secondary role in this analysis. Sleight of hand is involved in using an apparently sound analysis to downplay the importance of non-governmental sectors.

MMT analysis of the government sector

Having created a framework in which government is the sector of the economy that can and does determine the level of GDP, analysis of that sector should assume great importance for MMT. Without doubt, proponents of MMT have contributed greatly with their careful descriptions of the actual processes whereby the FED carries out the transactions that are

[6] Truncation of Copeland's moneyflow analysis and downplaying of its importance began long before the current version of MMT was created. It began when the Federal Reserve Board absorbed Copeland's moneyflows project and began to make his flows consistent with the income and product accounts that had become the primary source of macroeconomic information for policy makers and in textbooks. For a brief summary of this process see Taylor 1991. And, for a discussion of the difference between the Godley and Lavoie flow analysis upon which MMT is based and that of Copeland, see Chapter 2 of Godley and Lavoie (2007).

central to FED involvement in the U.S. economy. These are the "monetary arrangements" that are at the center of MMT analysis according to Mitchell, Wray, and Watts (p. 13).

However, and in spite of these useful descriptions, the MMT treatment of the government sector is seriously inadequate. The first, and most serious, reason for this has to do with the almost total absence of any discussion of the actual processes whereby federal government decisions to spend or to tax are made. That is, there is an almost total lack of attention to fiscal policy formation and to the political context in which such policy is formed.

In an AFEEMAIL exchange that I had with Wray (May 4, 2019), he responded to my statement that I was puzzled by the lack of attention given to fiscal policy by writing:

> "We DO NOT (caps in original) emphasize monetary policy (as normally defined) and indeed argue not only is it fairly impotent but that we do not even generally know if the FED is stepping on the gas or the brake. Our emphasis is and always has been on fiscal policy. I simply cannot understand where you got this idea [that MMT ignores fiscal policy] from. Our answer is "spend more". Why do you see that as monetary policy?" (AFEEMail, May 4, 2019).

It is true that Wray, Kelton, and other MMT advocates have proposed a Job Guarantee program and more recently a Green New Deal, both designed to attack directly the problem of unemployment while also achieving other worthwhile goals. But, to date, most of the MMT analysis has focused on the affordability of such programs rather than on the complexities of getting such programs through the Congress that holds the power of the purse and especially upon the complexities of getting such programs adopted in the federalist system of the U.S. I realize that analysis of the difficulties of getting expansionary spending programs adopted in the U.S., and in many other countries as well, requires venturing into the realm of political economy but this is not usually an area deemed beyond the scope of Institutional and heterodox analysis.

In the U.S. the Congress-imposed federal debt ceiling has been used repeatedly to argue against additional Federal spending and has put ability to pay at the rhetorical center of policy formation in Washington D.C. The adoption of austerity measures as necessary in several western European countries in recent years has further increased the importance of the MMT message that ability to pay is not the serious constraint that many have argued. Nevertheless, if MMT is simply about the ways in which monetary arrangements can accommodate fiscal policy, this needs to be made clearer. If it is really about fiscal policy the fuller analysis of the conflicts that have rendered Congress unable to take forceful fiscal action is needed. It seems reasonably clear that fear of breaching the debt ceiling in the U.S. is as much an excuse as cause of Congressional failure to address structural unemployment and other chronic issues. Focus on the excuse is an inadvertent sleight of hand that results in lack of attention to the real problems.

But, set that complaint aside and consider instead some of the other peculiarities of the MMT argument that raise doubts in my mind about the adequacy of their analysis. The first of these has to do with alleged special characteristics of the government sector. Government is said to be unlike actors in other sectors because it does not need to tax in order to spend. This is true but is it not also true of other actors in the economy? Consumers spend by using credit cards

and pay down their balances when they get paid at the end of the pay period. Business firms buy goods on credit in anticipation of selling those goods and repaying their debts.

I would agree that the Federal government (and for that matter State governments) have a longer leash than most consumers and many (though apparently not all if Amazon and Uber are a good guide) business firms but the claim that the government sector is totally different in being able to spend without prior receipt of revenue seems exaggerated. Advocates of MMT argue that the source of the longer leash possessed by national governments derives from the fact that a sovereign nation cannot run out of its own currency. This is logically true.

But the institutional reality is that sovereign governments borrow to spend an amount that exceeds tax revenues for the accounting period. Of course, this is human-created convention but that does not make it less important for the same is true of all of the other organizational patterns, rules, and laws by which we live our lives. And in the real world in which we live, the borrowing power of the state depends on the willingness of portfolio controllers to absorb government debt issues. The MMT argument is that the gilt-edged status of government issues is explained primarily by the powers of monetary sovereignty. The debt issues of monetary sovereigns are, for all intents and purposes, default-proof, because the sovereign is always in a position to create the stuff in which its debts are payable. The MMT argument seems to be that portfolio controllers understand this, which provides a running insurance policy against a speculative run on government debt issues.

It seems reasonable to think that confidence in the U.S. dollar now and in recent decades depends more on the fact that the U.S. government has legal taxing power on a $20 trillion economy. This is undoubtedly reinforced by the evolution of the FED's role as market maker, or buyer of last resort, in secondary markets for government issues. That is, portfolio controllers can normally count on the FED to guarantee the liquidity of government issues and maintain their spot prices in some narrow range.

But it is important to remember that MMT analysis has developed in the U.S. of a particular time. Because the U.S. dollar has been the international reserve currency since the end of WWII, the U.S. has had a great deal of policy space. Add this to the size and relative stability of the U.S. economy over this period and it does appear that there is no real limit to government indebtedness. However, there is no reason to believe that the dollar will continue to be the reserve currency forever. There may well be a long and messy period when the dollar is replaced by another currency or other currencies. This is what happened during the interwar years as the dollar replaced the British pound. In such a period the policy space will shrink and the ratio of Federal government spending to Federal taxation may assume an importance that it does not currently have. It is for this reason that I am uneasy by the tone of MMT advocates who seem to be arguing that there simply can never be a reason to worry about the size of sovereign debt in a sovereign nation. MMT analysis makes me, as an Institutionalist who finds overwhelming evidence of continuing change and evolution in economies, very uncomfortable because of a failure to consider the historic specificity that gives rise to their confidence that the debt issues of sovereign nations are default proof.

Finally, I also worry about something that is a little harder to articulate. Even in the currently tattered U.S. democracy there is a pervasive sense that the government should be accountable to its citizens and should be subject to most of the same laws and constraints that apply to ordinary citizens. To say that government debt, however the funds raised through that indebtedness may be spent, is not a threat is inconsistent with this most basic

and pervasive sense. Most of us, even students in introductory classes in economics, know that it is not a good idea for households to accumulate substantial debt to pay for lavish vacation trips even though it may be quite sensible to borrow to buy a house or pay for education. So too do we all recognize that business firms should incur debt if there are good opportunities for investment for future production, but would be unwise to borrow for frivolous expenditures. So, it is with government expenditures and the taxes that we use to balance the accounts in our accounting dominated society. Citizens want and should want to know how the accounts of government add up at the end of each accounting period and should want to know how that money is being used. To the extent that MMT downplays the importance of such accounting when it is used to limit government, they muddy rather than clarify important public discussion of how best to use the powers of government. I do not accuse MMT advocates of saying that money spent for tax relief or redundant defensive weaponry is money well spent. But by focusing almost exclusively on "monetary arrangements" there is also sleight of hand that distracts us from the really crucial issues of the day. It is no compliment to say that this is the same sleight of hand used by deficit hawks who shout that we cannot afford to spend more.

Conclusion

The creators and advocates of MMT are to be applauded for their ability to do what many of us who have spent long hours teaching economics have been unable to do: attract considerable allegiance to the idea that here is room in most modern industrial economies for government-led programs that enhance general welfare. They have persuaded some political leaders and devoted followers that the decade of the 1930s was not unique in providing an opportunity for a public New Deal. For this I applaud them loudly.

My applause for the analytical underpinnings that they use to support these views is decidedly more muted. From my decidedly heterodox and Institutionalist perspective, I see an urgent need for more emphasis on true endogeneity, which means more emphasis on the limited powers that the FED has to determine the performance of the macroeconomy. I also see an urgent need to improve the way in which we teach and talk about the economy so that the nature of modern money/credit is accurately treated. And, I wish for recognition of the historical specificity of the conditions that allow the MMTers to speak of the very large fiscal space for the U.S. government if only they would use it. If the MMTers could add these things I would convert from friendly critic to strong advocate.

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Author contact: amayhew@utk.edu

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Tax and modern monetary theory

Richard Murphy[1] [City University London, UK]

Abstract
Modern monetary theory (MMT) has played an important role in advancing understanding of the economic function of taxation, including by showing how it acts to "cancel" government spending as part of a spend-tax cycle. To date however, MMT has not fully explored the implication of these insights for how tax can also achieve social, economic and fiscal goals, as well as macroeconomic ones. This omission is addressed in this paper by suggesting that cash paid in tax is a residual figure arising from a plethora of decisions on tax bases, reliefs and allowances, as well as tax gaps that result from non-compliant taxpayer behaviour. The impact of this range of decisions and practices can be interpreted as a form of social policy with distributional and economic consequences. Such decisions and practices require systematic estimation and appraisal, as well as conscious management of their consequences, if effective control of the economy is to be maintained. It is suggested that this process can be supported by a modern theory of taxation (MTT) that, building on the understanding derived from MMT that tax is not a tool for government revenue maximisation, and can deliver new perspectives on the use of tax as a critical instrument in economic and social policy management.

Key words tax, modern monetary theory, tax gaps, tax spillover, social policy, fiscal policy

Introduction

The Australian modern monetary theorist Steven Hail has suggested that "proponents of modern monetary theory… claim [that a] government need not balance its budget and are instead calling for the government to balance the economy, which they argue is a different thing entirely" (Hail, 2017). Paul Krugman has offered a not dissimilar view, from a critics perspective, suggesting that what MMT argues is that if a state has a fiat currency and only borrows in its own currency then they do not face debt constraints but do instead suffer an inflation constraint that they have to manage through the control of aggregate demand. As he put is "the budget deficit should be big enough to produce full employment, but not so big as to produce inflationary overheating" (Krugman, 2019). In summary, MMT might be suggested to describe a process for the management of aggregate demand within an economy with its own fiat currency.

One of the consequent curiosities of MMT is its indifference towards describing at least some of the aspects of the role of tax within such an economy. It is stressed that this omission is partial: as several MMT authors (Mitchell et al., 2019; Wray, 2012) make clear, the relationship between modern monetary theory and tax is intimate in a number of areas. For example, it is argued that tax drives the value of money (Wray, 2012, p. 47). This is because it is the promise that a government makes to only accept the currency it creates in settlement of the tax liabilities that it issues that in turn creates demand for its currency. Currency itself consequently has a fiscal nature and underpinning. And as Murphy (2015) argues, if the proportion of anyone's income demanded in tax within the economy is significant then there is

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no incentive to use anything but the locally created fiat currency for the settlement of transactions arising within that economy: the risk of exchange gain or loss arising at the time of settlement of tax liabilities in that circumstance discourages anything else. The relationship between tax and the currency does as a result afford a government considerable control over its economy in that situation. In addition, the idea implicit throughout MMT that a government need not tax before spending, but actually must first create the money required before tax payment can take place has become a central insight integral to the relevance of MMT (Bell 1998). But despite this it is suggested that the role of tax within some aspects of MMT remains underdeveloped.

The primary reason for this would appear to be that most discussion of tax within the context of MMT is primarily, and perhaps unsurprisingly given MMT's focus on aggregate demand management, macroeconomic. For example, it has been argued that within MMT the primary role of tax is to offset demand (Fullwiler et al., 2019). This suggestion builds on the idea that a government that demands more in tax than it injects into the economy through spending necessarily creates unemployment as a consequence (Mitchell and Mosler, 2001). Tax in this view has a very clear macroeconomic role. The overall argument in relation to this has a longer history. Chartalism maintained that tax had a critical role in "withdrawing" money from circulation within the economy, and therefore assisted with the control of inflation (Lerner, 1947). Some suggest that this insight should continue to inform MMT (Murphy, 2015). For others using tax to control inflation after it has broken out is an inappropriate use of its insights: it is instead suggested that MMT requires planning to prevent inflation occurring in the first place (Fullwiler et al., 2019).

However viewed, this debate is macroeconomically focused. It is suggested that this is unfortunate in that it restricts the contribution that MMT might make to understanding the role of tax within an economy once the insights it has to offer are accepted because it ignores the crucial question of how the design of taxation systems can also serve microeconomic (or regulatory) and social policy objectives, as well as macroeconomic ones. There is a perception that proponents of MMT have not embraced this issue (Roth, 2019). For example, MMT's relative indifference to taxing those with wealth (Kelton, 2019), is in part a function of MMT's suggestion that redistribution can be achieved without taxation, by using government created credit. Such positions can obscure public understanding of the potential role of taxation within MMT.

It is this potential role that the rest of this paper seeks to explore. In the process a number of issues are addressed. Firstly, it is shown that cash tax collected, which might be considered a balancing figure in MMT's explanation of the funding of government spending, is a residual figure settled only after a whole range of decisions by government and taxpayers are taken into account. It is suggested that this requires that MMT consider how to manage the tax system as a whole if it is to fulfill its objectives, effectively requiring the creation of a modern taxation theory (MTT). Secondly, the liberating effect of understanding tax as cancellation of money creation is considered. It is suggested that this provides the understanding on which MTT can be based. Thirdly, the consequence of this understanding for managing the role of tax within the economy is explored. The principle that taxes should not cause harm, implicit in recent work on tax spillovers is then explored as a characteristic of MTT before conclusions are drawn.

The limitations to MMT's macroeconomic perception of tax

As Mitchell et al. (2019, p. 333) suggest, within MMT the macroeconomic identity describing the monetary funding of government expenditure (G) can be summarised as follows, presuming T is the sum total of taxes raised in cash during a period, B is government borrowing and M is government created money, with Δ representing the change in a total during a period:

$$G = \Delta B + \Delta M + T$$

The concern in the context of this paper is with the interpretation of T, i.e. cash raised in taxes, within this equation and within wider society. The reality is that T in this formulation is a residual figure i.e. the tax paid in cash is only settled after a whole range of other issues have been addressed and their value has been assessed. So, as is noted below, T is influenced by decisions on the tax bases that should actually be subjected to taxation, decisions on rates and allowances to be provided, and taxpayer decisions on the degree to which they will be compliant with the demands made of them. It is not, then, the case, that a decision can be taken in isolation on the sum of tax to be collected: these other factors have to be taken into account in forecasting the sum likely to be recovered from the economy. If, as Fullwiler et al. (2019) argue, MMT is a tool to be used for policy formulation, and total cash tax paid plays a particular role in this process by assisting determination of the planned inflation rate, then this understanding is particularly significant: it requires a reconsideration of the significance of tax within MMT, and as a related issue of importance in its own right.

In this context an appreciation of the tax gap is important. Both the IMF (2013) and the European Commission (TAXUD, 2018) argue that net tax collection arises after the deduction of two broadly stated tax gaps that reduce total potential gross tax yields i.e.

$$T = T_t - T_f - T_c$$

where T_t is the total potential tax due on the tax base, T_f is the net tax foregone as a result of policy decisions and T_c is the tax compliance gap. Both terms require expansion. In the normative typology of the tax base that the IMF (2013) suggests be used for estimation of tax policy gaps:

$$T_t = (T_b \times T_r)$$

where T_b is the tax base for a particular tax and T_r the standard tax rate for that tax base, and:

$$T_f = T_p + T_s$$

where T_p represents the value of tax bases not taxed as a consequence of a policy decision (e.g. wealth) and T_s represents the value of allowances, reliefs and varying tax rates granted within bases that are taxed to encourage varying taxpayer behaviours by way of tax spends, whilst:

$$T_c = T_e + T_a + T_u$$

where T_e is the part of the tax compliance gap resulting from illegal tax evasion; T_a is the part resulting from the avoidance of those tax obligations that a legislature thinks fall on taxpayers

and T_u is the part of the tax compliance gap resulting from non-payment of tax debts, or unpaid taxes.

Substituting this understanding in the equation for G:

$$G = \Delta B + \Delta M + ((T_b \times T_r) - T_p - T_s - T_e - T_a - T_u)$$

This version of the identity previously noted suggests that the task of using tax to manage inflation, whether before or after it emerges into an economy in the fashion that MMT suggests possible is more complex than the basic identity implies. This is because what this identity makes clear is that the variable T – the tax settled in cash during a period - is the residual of a whole range of other decisions within the economy. The new identity that is noted implies that there are at least five tax gaps that have impact on this total:

1. The tax policy gap, which refers to the cost of potential tax bases not taxed by choice e.g. wealth, which is untaxed in many economies;
2. The tax spend gap, which refers to the costs (both positive and negative) of granting higher and lower rates of tax that vary from the norm or standard rate as well as the cost of all allowances and reliefs granted to taxpayers, for whatever reason;
3. The cost of tax evasion;
4. The cost of tax avoidance;
5. The cost of tax bad debt i.e. declared sums owing but not actually paid.

Policy is required on each of these issues to manage cash tax collected. Crucially however, MMT thinking has potential implications for the context in which this management should take place. In effect what this implies is required is a new theory of taxation that does not focus on cash tax collected as such, but does instead focus upon the role of tax in cancelling the credit created by government spending within the economy whilst simultaneously delivering the social and economic policies of a government that drive decision making on the tax policy and tax spend gaps.

Tax as cancellation

Within the context of this suggestion that a modern taxation theory might be required, one of MMT's primary and most useful insights is its explanation that there is not a "tax and spend cycle" but a "spend and tax cycle". This logically follows from the MMT position that all government spending is initially funded by a credit creation process managed by a government and its central bank. The importance of the logic is that this means that the primary role of tax is to cancel that credit (which takes the form of new money), created by government as a result of its spending. In this role tax plays the same role in cancelling credit, as bank loan repayment does with regard to commercial bank created credit (McLeay et al., 2014). This logic, when placed within the context of the accounting identity for government expenditure discussed in the precious section, necessarily transforms thinking about tax. When tax is not required to fund government spending, which is the necessary and inevitable consequence of this logic, it can and should be designed to perform other pressing public policy roles within the economy. Other such roles can be identified (for example, these from Murphy, 2015):

1) Ratify the value of the currency by demanding payment of tax in the currency a government has created, thereby establishing the value of that currency for use in other transactions in the jurisdiction for which it is responsible;
2) Reclaim the money a government has spent into the economy as a result of the credit creation it undertakes in fulfilment of its democratic mandate;
3) Redistribute income and wealth;
4) Reprice goods and services;
5) Reorganise the economy i.e. to facilitate fiscal policy.

To date MMT has focused almost entirely on the first and second these, yet the others are as potentially important. Others, such as Avi-Yonah (2011) have made the same point. The variation on the accounting identity noted previously also makes clear that tax has political, political economy and social policy implications. It is suggested that MTT should explicitly accept these objectives for taxation. As a result, a modern taxation theory would implicitly reject the orthodox economic view of taxation as a funding mechanism in which the microeconomic objective of revenue maximisation is paramount (as elaborated , for example, in IFS, 2011). Instead a more holistic view of tax that draws on the one developed by John Kay (1986) can usefully be adopted on the basis of, and combined with, MMT insights. In this conception, government is an economic agent in its own right and is a major supplier of public services that reallocate resources within society whilst using tax as a mechanism to facilitate this process.

A broader view of tax management within the context of MMT

This argument suggests that an alternative view of taxation derived from fundamental MMT insights can be developed. To reconcile with the MMT view of tax being a tool to assist a government to fulfill its mandate to manage aggregate demand within the economy a MTT must suggest that a government must manage its tax gaps, of the types previously noted. This is where common ground must be created or the macro and microeconomic objectives of any government cannot be reconciled.

Unfortunately, few tax authorities do at present prepare tax gaps (Murphy, 2019; OECD, 2017, p. 182). One that does so annually is the UK's HM Revenue & Customs (HMRC 2019b). It defines the tax gap as "the difference between the amount of tax that should, in theory, be collected by HMRC, against what is actually collected" (HMRC, 2016, p. 3). The US's Internal Revenue Service ("IRS") offers a variation on this when suggesting that the tax gap is "the difference between the tax that taxpayers should pay and what they actually pay on a timely basis" (IRS, 2016). Their emphasis on "timely payment" adds a nuance absent from the HMRC definition. Both, however, focus on the tax compliance gap (T_c in the notation used previously) and ignore tax forgone (T_f).

In the context of both MMT, with its focus on aggregate demand, and MTT, with a focus on the social and economic objectives of taxation, to ignore tax foregone is a mistake: tax foregone is that tax that a government chooses not to collect for policy reasons. It as such equates to the tax policy gap, but by describing the sum as tax foregone it is made clear that this is a decision not to tax. The International Monetary Fund's (IMF) addresses this issue of tax foregone, first by suggesting that the appraisal of the tax compliance gap (T_c) has to be undertaken within "the current policy framework" (IMF, 2013, p. 11) and secondly by explicitly recognising that there is a tax foregone, or policy, tax gap arising as a result of the choices

made by legislators that necessarily reduces available tax revenues. They refer to this sum, which is referred to as tax foregone in the notation used previously, as a "policy gap", which they suggest refers to tax laws granting exemptions, tax liability deferrals or preferential tax rates (IMF, 2013, p. 11). These decisions have substantial impact on the chances of achieving the goals that it is suggested should be implicit in a MTT, but at the same time so do they with regard to MMT's aim of managing aggregate demand.

The European Commission Taxation and Customs Union (TAXUD), which publishes an annual study of the European Union's VAT gap (TAXUD, 2018), also embraces this idea of a "tax policy gap", noting that:

> "[T]he Policy Gap captures the effects of applying multiple rates and exemptions on the theoretical revenue that could be levied in a given VAT system. In other words, the Policy Gap is an indicator of the additional VAT revenue that a Member State could theoretically, i.e. in case of perfect tax compliance, generate if it applied a uniform VAT rate on all goods and services" (TAXUD, 2016, p. 51).

It should be noted that these two international agencies apart, the significance of this gap is ignored and it would appear that few governments put much effort into appraising the scale of the cost of the tax policy gap. Again, it could be argued that the UK is an exception, but the data it has to offer to appraise this gap is incomplete (HMRC, 2019a). That authority's focus is on the tax compliance gap (e.g. HMRC, 2019b).

When considering tax compliance gaps it is apparent that there are a range of methods that might be used to prepare such estimates. It has been argued that all are unreliable (Gemmell and Hasseldine, 2013). The IMF (2013) has effectively endorsed two approaches as being of merit. One is described as a "top-down" approach. This uses macroeconomic data to estimate the potential tax base within an economy. Taking value added tax (VAT) as an example, on this basis the likely VAT due on each part of consumption within national income is estimated as if no allowances or reliefs are supplied to taxpayers (T_t). Allowance is then made for the items exempted from charge as a result of policy decisions (T_p). In addition the cost of those allowances and reliefs granted either for reasons of administrative ease or to influence taxpayer behaviour is also estimated (T_s). These last two estimates constitute the VAT policy gap (T_f). The estimated tax due net of the VAT policy gap is then compared with the actual yield to suggest a compliance tax gap in a "top down" approach. The compliance gap represents tax lost as a result of taxpayer behaviour. As the IMF have noted, an analysis of this sort is dependent upon the existence of statistics of sufficient quality on the size of the tax base derived from sources other than taxpayer records (IMF, 2017, p. 33).

In contrast to this top down approach, a "bottom-up" approach uses an audit sample of submitted tax returns to estimate errors found within them and then extrapolates this error rate across the whole population of submitted returns (HMRC, 2019c, p. 4). The method does however leave this approach very vulnerable to estimates of tax not declared at all on tax returns not submitted by persons whose identity may not even be known. The methodology is also not good at capturing tax not paid by relatively small groups in society, such as the very wealthy. As Zucman et al., (2017) have noted, if such groups are predisposed to evasion then resulting tax gap estimates may be very vulnerable to error.

If MMT is to succeed in the objective of collecting specified sums in tax to ensure the cancellation function of tax has macroeconomic integrity, then it is apparent that those tax gaps need to be estimated. Moreover, they will need to be better estimated than at present, or the MMT objective of eliminating inflation through ex ante planning will be flawed and questionable. Put another way, if tax is to adequately fulfil its "cancellation function," it will need to draw on tax gap estimates to come to a more precise appreciation of the extent to which "cancellation" is in fact taking place through current tax policy, and how future policy might be adjusted to better fulfil this function.

There is another dimension to this management of taxation from an MMT perspective. The job guarantee in pursuit of full employment (Mitchell et al., 2019, p. 301ff), is partially a normative position. This minimally normative approach to economic policy implicit in the job guarantee could also be extended to other areas of taxation management to fulfil, most particularly the third, fourth and fifth objectives for taxation (Murphy, 2015). MMT's description of a spend and tax cycle also opens up the possibility of tax policy being directed towards other social and economic objectives, while also allowing better performance of its macroeconomic cancellation function.

Such an approach permits reframing of the way in which orthodox economics might view the expression of the total tax due on the tax base (T_t), noted above. In an orthodox view the single standard rate of tax with minimal allowances that is implicit in that formulation would be the optimum ordering of the tax system (see, for example, commentary by Sijbren Cnossen, IFS, 2011, p. 370). However, in a tax system that is not revenue maximising, and is instead seeking to promote social and economic policy, it follows that there would be good reason why tax rates would vary from the standard rate, even if it remained appropriate to indicate that such a rate existed. Progressive taxation will require this variation even if it challenges the orthodox view of efficient taxation. Likewise, some allowances and reliefs could be created to quite specifically induce changes in behaviour, which would again not fit a model of efficient taxation commonly described in orthodox economic literature (for example, Mankiw et al., 2009; Jorgensen and Yun, 2013). MTT will, therefore, building on the logic of MMT produce outcomes in tax policy quite different to those implicit in orthodox economic literature on this issue. Such variations in rates, reliefs and allowances will however, create the potential for tax spillovers, which appraise the impact one part of a tax system might have on the effectiveness or otherwise of other parts of the tax system of the same country in which they arise, or the impact that the system being considered might have on other country's capacity to pursue fiscal autonomy. An awareness of tax spillovers is, then, essential in any system considering how MMT might achieve its taxation goals, which also means that reviewing them is a necessary part of MTT.

Managing the risk within an MMT tax regime – the role of tax spillover analysis

Tax spillovers were first widely discussed as a result of a seminal paper by the IMF (2014) that established that the corporation tax system of one country could have "spillover" effects on the corporate tax yield of another country. This idea has been expanded upon by Baker and Murphy (2019). They suggest the use of a minimally normative assumption when undertaking tax spillover appraisal, which assumption is that spillover appraisal should consider whether or not any one aspect of a tax system causes harm to the same tax in the same tax jurisdiction, another tax in the same jurisdiction or any aspect of tax in another jurisdiction. In this context causing harm means that the stated object of the tax in question

has been undermined. So, and to use a commonplace example, if the corporate income tax of a jurisdiction was to be charged at a lower rate than the personal income tax and it was readily possible to reassign income streams otherwise attributable to personal tax payers to corporations it is apparent that the corporate income tax harms the personal income tax in the jurisdiction in question. Such practices can hamper tax's overall ability to perform a withdrawal function, as well as exacerbating wealth and income inequality.

In the appraisal system that Baker and Murphy propose four taxes (personal income tax, corporate income tax, social security and capital gains tax as a proxy for wealth taxes) are appraised for their spillover consequences both on each other and against four aspects of tax administration, including the prevailing tax politics of the jurisdiction (which considers whether a climate conducive to tax compliance by taxpayers is promoted, or not); the efficiency of the tax administration; the efficiency of the company and trust administration and the impact of international agreements on each of these other aspects of the tax system. The result is a multidimensional tax spillover analysis that considers both domestic and international tax spillover risk. The aim is to identify where that risk exists. This would appear to be of great significance for MMT: unless a government can predict with confidence that it can collect a targeted sum in tax then it follows that its ability to forecast the likely level of aggregate demand it can deliver within the economy without inflation arising will be severely curtailed. Tax spillovers undermine that prospect of forecasting accurately: tax spillover analysis suggests how that process can be improved. MTT extends the idea to make sure that the social objectives within the tax system achieve the social and economic goals noted previously without undermining each other.

MMT and tax – conclusions

MMT has had a substantial impact on much economic debate in recent years. Amongst its contributions has been the suggestion that there is not a "tax and spend cycle", but a "spend and tax cycle". This is liberating and allows for a re-conceptualisation of the role of tax within the economy. Rather than balancing a government's fiscal equation, with indifference as to how the cash sum that achieves this goal is raised, tax can be an instrument of social, economic and fiscal (regulatory) policy. The idea that tax is a sum to be forecast when planning desired levels of inflation, as MMT considers necessary, is only possible if tax collected is seen as a residual of many other decisions implicit within that process. Various social and economic drivers of net tax owing require explicit consideration, as too do the various component elements of the tax gap. That consideration will extend to the requirement that all these sums be actively managed.

If the thinking implicit within modern monetary theory is to ever underpin the economic strategy of a government, assessing the identified five tiers of tax gap, will be critical to its success in imposing control on the economy for which it has responsibility. Tax spillover analysis in both domestic and international arenas is also key to this process of designing tax systems that do not undermine themselves, while achieving social goals and simultaneously assisting control of aggregate demand. Any government embracing MMT will, then, need to adopt this methodology. Tax is key to the success or otherwise of modern monetary theory in practice. To date its importance has been underplayed and under appreciated. If modern monetary theory is to succeed therefore, it has to be paralleled by a more expansive form of modern taxation theory, as explained, aided by tools such as tax gap appraisal and tax spillover assessments.

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Author contact: richard.murphy@city.ac.uk

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Macroeconomics vs. modern money theory: some unpleasant Keynesian arithmetic and monetary dynamics[1]

Thomas I. Palley [Washington, DC]

Abstract
The last decade has witnessed a significant revival of belief in the efficacy of fiscal policy and mainstream economics is now reverting to the standard positions of mid-1970s Keynesianism. On the coattails of that revival, increased attention is being given to the doctrine of modern money theory (MMT) which makes exaggerated claims about the economic costs and capability of money-financed fiscal policy. MMT proponents are now asserting society can enjoy a range of large government spending programs for free via money financed deficits, which has made it very popular with progressive policy activists. This paper examines MMT's assertion and rejects the claim that the US can enjoy a massive permanent free program spree that does not cause inflation. It also shows the proposed MMT fiscal program entails economically implausible debt and money supply dynamics that will likely trigger financial instability.

Keywords Fiscal policy, budget deficits, debt dynamics, money supply dynamics

JEL codes E00, E12, E62, E63

1. The revival of Keynesian fiscal doctrine

The last decade has witnessed a significant revival of belief in the efficacy of fiscal policy. In part, that revival has been prompted by the combination of the success of fiscal stimulus in combatting the US Great Recession of 2009 and the disastrous effects of fiscal austerity in Greece after the Greek sovereign debt crisis of 2009.

Mainstream economic theory has now embraced counter-cyclical fiscal policy effectiveness, albeit within the special context of economies trapped at the nominal interest rate zero lower bound (Christiano et al., 2011). The doctrine of expansionary austerity (Giavazzi and Pagano, 1990), which had flourished in the decade prior to the Great Recession, has now been largely rejected.[2] Likewise, the notion that the Keynesian expenditure multiplier is significantly less than unity has been abandoned, and there has been an upward revision of its size. Furthermore, it is now recognized that the multiplier is larger in times of recession (Batini et al, 2014). Lastly, the mainstream profession is now busy rethinking its attitude toward government debt, recognizing that there can be significant benefits from debt-financed government activity and that high levels of debt are sustainable in the long run if the interest rate is low (Blanchard, 2019). That latest development reflects a rediscovery of Domar's (1944) debt sustainability condition requiring the interest rate be less than the growth rate. In

[1] This paper was prepared for and presented at the Eastern Economic Association meetings held in New York, NY, March 1-3, 2019. It was initially released as Working Paper 1910, Post Keynesian Economic Society, April 2019.
[2] Caveats still exist. For instance, some (Velasco, 2017) still argue that when fiscal policy is responsible for financial instability, fiscal austerity can be expansionary if it restores financial confidence. That argument has been invoked for austerity in Argentina and Brazil. However, the empirical record is suspect for both Argentina and Brazil, and the real problem is confidence which is better solved by other measures rather than by "bleeding the patient" with austerity.

effect, mainstream economics is now reverting to the standard positions of mid-1970s Keynesianism espoused by economists like James Tobin and Robert Eisner.

As is so often the case, there is a risk that the pendulum swings too far. Thus, on the coattails of the revival of fiscal policy, increased attention is being paid to the doctrine of Modern Money Theory (MMT) which asserts society can enjoy a range of large government programs for free via money financed deficits, all without inflation. That has made MMT very popular with progressive policy advocates.

Elsewhere (Palley, 2015a, 2015b, 2019), I have criticized the faulty macroeconomics of MMT which leads it to make exaggerated claims about the economic cost and capability of money financed fiscal policy. This paper further exposes MMT's faulty logic via an exercise in applied macroeconomic arithmetic.

Recently, progressive Democrats have called for a range of programs that include Medicare for all, expanded Social Security, free college tuition, and a Green New Deal. There is significant merit to each of these proposals and all of them can reasonably be argued for. However, there is also the question of how they will be financed. Proponents of MMT assert that financing is a non-problem and the programs can be financed by printing money and without causing higher inflation (Kelton et al., 2018). However, simple back of the envelope macroeconomic arithmetic shows that assertion to be completely implausible.

As has long been known by Keynesians (Blinder and Solow, 1973), money financed deficits can be used to finance programs when the economy is away from the full employment - inflation boundary. However, that space will be temporary to the extent deficits increase real financial wealth and automatically drive the economy to full employment, at which stage there will be an inflationary gap. In a static economy, once the economy gets to full employment, policymakers are compelled to run a balanced budget if they want to avoid inflation.[3] There is a money financed free lunch as long as the economy is below full employment, but the free lunch inevitably disappears. If programs are permanent, they ultimately have to be paid for with taxes or they will generate inflation.[4]

Furthermore, not only will the proposed programs likely trigger high inflation, they will also generate economically implausible debt and money supply dynamics that stand to trigger financial instability. Financing government spending by increasing the monetary base is the headline policy recommendation of MMT. However, the monetary base is actually quite small compared to GDP, which limits the ability to use that financing option without triggering economic disruptions.

2. Some unpleasant Keynesian arithmetic: macroeconomic and budget deficit impacts

Table 1 details the implied direct GDP cost of Medicare for all, free college tuition, and the Green New Deal. According to the Centers for Medicare and Medicaid Services, private

[3] If there is a conventional Keynesian Phillips curve the economy will experience inflation before what is reasonably deemed full employment.
[4] There is more leeway in a steady state growing economy in which case the deficit can be such that that stock of real wealth (W/P) grows at the rate of per capita real output growth. If inflation is accepted, then the deficit can be such that the stock of nominal wealth grows at the rate of per capita real output growth plus the target inflation rate.

sector healthcare expenditures were 8.6 percent of GDP in 2017.[5] Private sector expenditure on tertiary education was 1.7 percent of GDP in 2014.[6] The Green New Deal has not been costed, but if it were the equivalent of the Marshall Plan it would cost 2 percent of GDP.[7] Together, that implies an AD injection equal to 12.3 percent of GDP. If the private sector saves 10 percent of the expenditures it is relieved of (i.e. healthcare and tertiary education), there would be an offsetting saving leakage equal to 1.0 percent of GDP. The net AD injection is therefore 11.3 percent of GDP, which would then be subject to an expenditure multiplier effect. Assuming a multiplier of 1.5, that implies a final increase in AD of 17.0 percent of GDP.

Table 1 AD effect of proposed policy proposals

	Percent of GDP
(1) Medicare for all	8.6
(2) Free college tuition	1.7
(3) Green New Deal	2.0
(4) Total AD injection (=(1)+(2)+(3))	**12.3**
(5) Relief saving (= [(1)+(2)] x 0.1)	-1.0
(6) Net AD injection (=(4)-(5))	**11.3**
(7) Final increase in AD (=(6) x 1.5)	**17.0**

Table 2, shows the back of the envelope calculation regarding the impact on the budget deficit. The budget deficit in fiscal year 2018 was 3.9 percent of GDP, to which the MMT policy programs would add 12.3 percent of GDP. Assuming an average marginal tax rate of 25 percent, tax revenues would increase by 4.3 percent of GDP.[8] Consequently, the net increase in the deficit would be 8.0 percent of GDP, implying an overall deficit of 11.9 percent of GDP.

[5] See NHE Fact Sheet, https://www.cms.gov/research-statistics-data-and-systems/statistics-trends-and-reports/nationalhealthexpenddata/nhe-fact-sheet.html
[6] See Statista.com, https://www.statista.com/statistics/707557/higher-education-spending-share-gdp/
[7] See Eichengreen (2010).
[8] According to the FRED data base of the Federal Reserve Bank of St. Louis, US federal receipts have averaged 17.2 percent of GDP over that past five years (2014-2018). In 2018 they were 16.2 percent of GDP. The average tax rate is therefore approximately 17 percent. The assumption of a 25 percent marginal tax rate reflects the presence of built-in progressivity in the tax code.

Table 2 Budget deficit effect of proposed policy proposals

	Percent of GDP
(1) Deficit in 2018	3.9
(2) Effect of program spending on the deficit	12.3
(3) Induced tax revenues (= 0.25 x 17.0)	-4.3
(4) New budget deficit (=(1)+(2)-(3))	**11.9**

3. Unemployment rate and inflation impacts

Turning to the labor market, assuming an Okun coefficient of 0.5 implies that producing an additional 17 percent of GDP would reduce the unemployment rate by 8.5 points. Since the US currently has an unemployment rate of 3.9 percent, that is not possible. The implication is the economy would be pushed far beyond full employment.

Generously assuming the full employment unemployment rate is 2 percent, implies the US economy still has 1.9 percent of labor slack.[9] Again using an Okun coefficient of 0.5, implies the economy has spare capacity equal to 3.8 percent of GDP.[10] Consequently, the proposed policy programs generate a net excess AD of 13.2 percent of GDP, being the increase in AD (17.0 percent) minus spare capacity (3.8 percent). Excess demand of 13.2 percent of GDP in the context of a 2 percent unemployment rate is likely to produce high inflation.

One way to prevent such inflation would be for the Federal Reserve to spike interest rates to control AD. However, that would likely produce another financial crisis given the leveraged state of household and corporate balance sheets, and because of the high valuation of equities. It is also the case that MMT proponents (Wray, 1998) reject using interest rate policy to fine tune the economy. Instead, they recommend parking the interest rate at zero. Were that policy adopted, in conjunction with MMT's recommendation of money financing of the policy program, the inflation situation would be even more dire.

The second way to prevent inflation would be to raise taxes. Over the last five years US federal receipts have averaged approximately 17 percent of GDP. To offset excess demand of 13.2 percent of GDP, federal receipts would need to rise by 13.2 percent of GDP, constituting a 78 percent increase in the federal tax and fee take.

[9] Some may argue the US has additional labor market slack owing to low rates of labor market participation. However, the US economy has never reached two percent unemployment in the post-war era, so that any uncounted slack is already built into the assumption of full employment corresponding to two percent unemployment.

[10] The assumption of excess capacity of 3.8 percent of GDP is generous in two regards. First, it assumes a very low full employment rate of unemployment. Second, it assumes the Okun coefficient holds steady at 0.5. In reality, it is more likely the Okun coefficient deteriorates (i.e. increases) as the economy approaches full employment owing to diminishing returns and decreasing quality of marginal workers.

4. Debt and money supply dynamics

Taking a lead from Taylor (2019), we can also look at the debt and money supply dynamics implied by the proposed MMT fiscal program. Those dynamics are governed by Domar's (1944) equation of motion for the debt-to-GDP ratio, which is given by

(1) $g_\delta = b + [r_D - g]\delta$

δ = debt-to-GDP ratio, g_δ = rate of change of debt-to-GDP ratio, b = budget deficits as a percent of GDP, r_D = real interest rate on government debt, g = real rate of growth. The necessary condition for stability is $r_D < g$. The interest rate must be less than the rate of growth so that the economy grows faster than the rate at which debt is compounding, thereby preventing the debt from overwhelming the economy.

Currently (March 2019), the long term bond real interest rate is approximately 1 percent and the Federal Reserve's projected long term real growth rate is 1.9 percent. Assuming those rates remain unchanged, the Domar stability condition is satisfied. Per Table 1, if the MMT fiscal program is enacted the budget deficit will rise to 11.9 percent of GDP. Plugging those numbers into the Domar formula given by equation (1) and setting g_δ equal to zero, yields a steady state debt-to-income ratio of 13.2.[11]

That is approximately a thirteen-fold increase compared to the 2018 debt-to-GDP ratio. Such a ratio is unheard of, providing *prima facie* evidence that the MMT proposal is financially unsustainable if financed exclusively by debt. Given an initial debt-to-GDP ratio of 105 percent and a deficit-to-GDP ratio of 11.9 percent, government debt initially grows at just over 10 percent per annum and doubles in approximately 7 years.[12] Unsustainability would likely express itself in a financial crisis since it can be anticipated that financial markets will be unwilling to absorb such an increase in the stock of government debt.

Another possibility emphasized by MMT proponents is that the Federal Reserve monetizes the entire deficit. The Domar equation can be used to analyze what would happen to the monetary base-to-GDP ratio. The equation is given by

(2) $g_m = b + [r_m - g]m$

m = monetary base-to-GDP ratio, g_m = rate of change of monetary base-to-GDP ratio, r_m = real interest rate on deposits with the Federal Reserve (i.e. the federal funds rate). The necessary condition for stability is $r_m < g$. Assuming a 0.5 percent real interest rate on money, the Domar condition is satisfied and the monetary base-to-GDP ratio eventually stabilizes and

[11] Taylor (2019) is more optimistic about the debt dynamics and posits the steady state debt ratio settles at 5.6. That is because he assumes a lower long term bond real interest rate of 0.5 percent and a higher real growth rate of 2.5 percent. Those two numbers are likely inconsistent, especially given his implied Keynesian demand-driven growth framework. Most importantly, they show the critical significance of parametric assumptions for Domar styled debt dynamics analysis.

[12] GDP in 2018 was approximately 20.5 trillion dollars. A deficit-to-GDP ratio of 11.9 percent implies an actual budget deficit of 2.4 trillion dollars. The debt-to-GDP ratio at the end of 2018 was 105 percent, implying actual debt of 21.5 trillion dollars. Using those numbers, the initial implied rate of growth of the debt is therefore 11.2 percent.

does not explode.[13] Plugging in the numbers, the long run monetary base-to-GDP ratio eventually stabilizes at 8.5.

According to the Federal Reserve of St. Louis, at the end of 2018 the monetary base was 3.4 trillion dollars, yielding a monetary base-to-GDP ratio of 0.17. Money financing of the MMT program therefore implies an ultimate 50-fold increase in the monetary base ratio relative to the 2018 ratio. Given an initial monetary base-to-GDP ratio of 0.17 and a deficit-to-GDP ratio of 11.9, the money supply initially grows at 70 percent per annum and doubles within 1.2 years.

Prima facie, those money supply dynamics are even more economically implausible than the debt dynamics implied by debt financing. They would almost certainly trigger high inflation in both asset markets and goods markets, as well as causing significant inflationary and destabilizing exchange rate depreciation.

The bottom line is that mathematical stability of the debt ratio or the money supply ratio is not sufficient for economic viability. That requires markets be willing to accept the dynamic paths and ratios implied by the Domar dynamics for the debt and the money supply. Unfortunately, the implied dynamics render market acceptance of MMT's fiscal program implausible. That, in turn, connects to the theoretical critique of MMT (Palley, 2015a, 2015b, 2019) which argues MMT fails to take account of such considerations. That failure is because MMT is just a conventional accounting framework and lacks behavioral content.

5. The political dangers of MMT

Political activist and media interest in MMT comes at a time of new found political confidence among progressive Democrats, as reflected in the scale and ambition of the proposed policy programs. After forty years of neoliberal dominance of social and economic policy, that scale and ambition is welcome. However, there is a grave political danger progressive Democrats may embrace MMT's claims that those programs can be had for free by printing money.

Doing so risks splashing the progressive project as economically implausible even before it has gotten off the ground. Even if that pitfall is avoided, MMT's financing recommendations will inevitably place the progressive project on the horns of a dilemma. If followed, the outcome will be significantly higher inflation and massive budget deficits, the combination of which would also likely trigger a new financial crisis. Alternatively, avoiding that outcome would require huge tax increases and fee impositions that would leave progressives politically vulnerable, both to charges of policy mendacity and to voter backlash against surprise forced tax increases.

The political dangers inherent in MMT are succinctly captured by Max Sawicky (2019):

> "A story that emphasizes unlimited public spending, besides being fallacious, will impress most people as either crankish or arcane… Any existing progressive government that comes to power under such delusions is bound

[13] The current federal funds rate is approximately 2.5 percent, and the Federal Reserve's inflation target is 2 percent. Assuming in the long run the Federal Reserve hits its inflation target and the federal funds rate is unchanged, implies a 0.5 percent interest rate on money.

to disappoint its constituents… a politically evasive monetary theory should not be the basis for a progressive movement".

6. Conclusion: MMT is a flawed foundation for progressive macroeconomic policy

In sum, the above Keynesian arithmetic rejects the MMT claim that the US can enjoy a massive permanent money financed program spree that does not cause inflation. To avoid inflation, such a program will require taxes and fees to pay for it. Keynesians have long recognized that money financed deficits can be used to finance programs when the economy is away from the full employment - inflation boundary. However, that financing option is temporary to the extent that those deficits generate developments which ultimately drive the economy to full employment. Furthermore, MMT's proposed deficit financing of those programs, be it money or bond financed, generates economically implausible financial outcomes. The case for progressive programs rests on their own merits, which should constitute their political foundation. Financing of those programs should be rooted in plausible macroeconomics, which MMT manifestly fails to provide.

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Author contact: mail@thomaspalley.com

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MMT and TINA

Louis-Philippe Rochon[1] [Laurentian University, Ontario, Canada; Co-Editor, Review of Political Economy, Founder, *Review of Keynesian Economics*]

Abstract
The rise of MMT in the last two years has attracted its detractors, not only among post-Keynesians, but now among the many within the mainstream corridors of powers, as both elected politicians, and non-elected leaders in policy institutions. Today, it seems like everyone knows about MMT. This short paper does not wish to add to the tiring panoply of critiques, but offers instead a possible, and simple, explanation of why many on the right fear MMT theory and policies.

JEL Codes B52, E02, E12

Keywords MMT, TINA, post-Keynesians

1. Introduction

As we approach the 25th anniversary of MMT,[2] it is perhaps fitting to reflect on the recent, yet undeniable, meteoric rise of MMT in the public and policy consciousness in the last few years or so. For some, this phenomenon may even play a role in the upcoming US elections. As James Wilson of the *New York Times* recently tweeted, "The speed with which young activists on both left and right are migrating toward MMT is going to have a profound effect on US politics in the 2020s and 2030s."

Whether that is a reasonable prediction is for now beside the point, but one thing is certain, the rise of MMT has defied many expectations, perhaps nowhere more so than among some post-Keynesians and heterodox economists. It is proof that the rise of MMT is a desire to see an alternative to current policies. It is difficult to conclude otherwise.

It now seems that anyone working in policy circles is keenly well aware, rightly or wrongly, of this once obscure or marginalized approach, and it appears everyone now has an opinion on it. In this sense, MMT has succeeded in ways post-Keynesian economists have not: they have broken through![3] One possible reason for their media success is perhaps their ability to reduce complex ideas and theories into simple, relatable terms – something the mainstream have been expert at for decades. Of course, this may have its downside, but it certainly contributed to their success. For instance, the mainstream's view of comparing State finances to that of a household was a brilliant PR move that convinced voters that deficits matter and contributed to the abandonment of fiscal deficit spending (until perhaps more recently). The left was never able to match this simple, though wrong, analogy. But MMT's idea that a sovereign country emitting its own currency cannot go bankrupt certainly rivals the

[1] I would like to thank Marc Lavoie and Mario Seccareccia for comments on this paper. Of course, all errors remain mine.
[2] I am using 1996 as the benchmark year where it all began, when Matt Forstater asked his undergraduate student, Pavlina Tcherneva, to do a critical review of Mosler's (1995) self-published booklet, *Soft Currency Economics*.
[3] I do not mean to say here that MMT and post-Keynesian theory are separate. Far from it, but my language here is simply meant to highlight that the MMT *version* of post-Keynesian economics has succeeded in getting recognition. As Fullwiler, Bell and Wray (2012, p. 10) claim: "We have never tried to separate our 'MMT' approach from the heterodox tradition we share with Post Keynesians, Institutionalists and others."

mainstream household argument. This simple idea spread across social media and other internet sites, and helped gather some adherents to the MMT cause.[4]

Evidence of MMT's success can also be found in JEL classification, which has created two codes for "Modern Theory of Money" – B52 and E12 – which is quite an accomplishment in and by itself (post-Keynesians only have one). Finally, a very quick search on the internet reveals articles in Japan's Time, Bloomberg, Forbes, BBC, CBC, NY Times, Washington Post, Financial Post, Financial Times, The Guardian, Mother Jones, Jacobin, the Wall Street Journal, and countless upon countless videos, podcasts, vlogs, blogs, and more. When was the last time any post-Keynesian gathered such attention?[5] To my knowledge, no one has ever stated "Post-Keynesians will have a major role to play in the 2020 US elections." In that sense, let's give MMT the credit they are due.

But the rise in popularity and acceptance of MMT has not come without a price. For instance, while MMT always had its internal critics, its recent fame has attracted the angry voices from many (powerful) elected and non-elected officials as well as the captains of finance, especially on the right, as MMT theory, although perhaps more the policies attributed to it (a job guarantee, a green new deal), have come under closer scrutiny, as critics try to understand a theory that not only asks different questions but asks them in terms often foreign to many mainstream economists.

At the same time, MMT founders must contend with a cacophony of voices speaking on behalf of the theory, which has led to some confusion of what MMT stands for. To wit, there are now two distinct groups within the MMT world. There is the core group or scholarly-driven research, represented – still – by a small cohort of scholars, like Randy Wray, Stephanie Kelton, PavlinaTcherneva, Mahew Forstater, Scott Fullwiler, and Bill Mitchell, and a more activist-driven group who may not always carefully reflect the core MMT assumptions.[6] These activists are not, in most cases scholarly-trained and often have limited knowledge of economics,[7] but are extremely busy in blogs and on the internet spreading the MMT word. For them, MMT ideas can be used to attack the political mainstream policies of austerity and unemployment.[8] Yet, their considerable involvement contributed to the development of what Lavoie (2019) has called a "general case, for popular consumption", which he contrasts with the "specific case, for academic discussion." Yet, it is this more activist component that might have contributed to a confusion of what exactly MMT stands for.

Yet, this more popular or activist version is an inevitable result of MMT's rise in popularity and, in return contributed in making MMT a true international movement. In a way, it is a "good" problem to have, despite the downsides. And MMT scholars are not unaware of this problem, and have gone to great lengths to remedy the situation by creating, for instance, an "MMT University", in an effort to not only educate interested students, but also to control the message. In this sense, the Mitchell, Wray and Watts (2019) textbook should come as close

[4] Thanks to Mario Seccareccia for this important point.
[5] My regular Uber driver, who knows I am an economist, even asked me if I had heard of MMT!
[6] Interestingly enough, while the rate at which the social-media adherents to MMT grows, it appears that the number of proponents of the core MMT version has remained relatively the same in the last 25 years. I will return to this point in the conclusion.
[7] I would add, they have no knowledge of the history of post-Keynesian economics. I was recently explained that the reason many central banks are interested in endogenous money today is only because of the work of MMT scholars.
[8] In my travels abroad, and in encounters with MMT activists, it becomes clear that they have seized on MMT fiscal positions as a weapon against the mainstream policies of austerity. This is, I think, the driving rationale for many.

to anything to providing the "canonical" MMT position, and perhaps providing some important nuances.[9]

The purpose of this short article is not to dissect the core principles of MMT, or enter into a debate over the merit of the original contributions of MMTers, as this has now been done ad nauseum (see the debate between Palley (2015a,b), and Tymoigne and Wray (2015), for instance, in the *Review of Political Economy*; among countless others, including Epstein's new book on "What's Wrong with Modern Money Theory?", see Epstein, 2019; and Henwood, 2019).

Moreover, post-Keynesians all believe that much of MMT is post-Keynesian economics, to which is added a few original ideas. As Palley (2015a) stated, it is a mix of old and new ideas. Yet, it is these added ideas that have contributed to a fierce debate amongst heterodox (and beyond), and it is a debate that won't be settled any time soon. In fact, in this note, I am ignoring for the most part the internal heterodox critique in order to focus instead on the criticism coming from the mainstream. What intrigues me most is why some in the mainstream have developed such a hatred for MMT. This paper provides one possible answer.

At the same time, I will also ignore many legitimate questions regarding MMT policies, such as how much would MMT programs like a Job Guarantee, or an environmental policy would cost, or whether that even matters, or whether MMT applies to developing countries with a fixed exchange rate (or as Henwood (2019) puts it, whether MMT is embedded "in a rich-country perspective"), or whether their theory of inflation is truly heterodox, or still whether they believe in a standard Phillips curve. These are all legitimate questions that deserve airing, but are for now beyond the immediate scope of this article.

Rather, this paper will try to answer the simple question of why has MMT rattled the mainstream cage?[10]

2. The rise of MMT

While the groundwork for MMT started as early as 1996, it was sparked by the publication of Mosler's 1995 book, *Soft Currency Economics*. It was cemented a few years later in Wray's 1998 seminal book *Understanding Modern Money: The Key to Full Employment and Price Stability*, which for the first time brought the full arguments together.

MMT has evolved since that publication, undergoing some clarification and refinement, thereby attempting to wrinkle out the creases, so to speak, and has arrived to what I consider are the ten key assumptions of MMT:

i) a commitment to full employment and price stability;
ii) a sovereign currency-issuing government is not financially constrained;
iii) a sovereign currency-issuing government cannot default;
iv) money is endogenous;

[9] Mea Culpa: I have not yet gone through the book.
[10] Another worthwhile question to pursue is why are so many post-Keynesians disturbed by MMT's "new-found fame" (Epstein, 2019). My own take is that it is a combination of professional jealousy and envy.

v) the nature of money is found in its tax-driven nature;
vi) the central bank and treasury can be conflated into a single institution;
vii) fiscal deficits lower interest rates;
viii) a commitment to a more functional approach to fiscal policy;
ix) a rejection of counter-cyclical monetary policy, which is seen as inefficient;
x) taxes are needed to control inflation at full employment, not to finance government spending;

As it stands now, as this list shows, MMT is indeed a "mix of 'old' and 'new' ideas" (Palley, 2018). Many of these core assumptions are generally accepted by post-Keynesians, or differences are a matter of emphasis rather than substance. For instance both MMT and post-Keynesians agree on the need for full employment, on endogenous money, on the need for fiscal policy, on the superiority of fiscal policy over monetary policy, and on the fact that at the very least, fiscal policy does not lead to higher interest rates thereby rejecting crowding-out effects.

However, there are still a number of core assumptions that have sparked considerable consternation, such as the tax-driven nature of money, or the consolidation of the central bank and the Treasury, or still the role of taxes. Finally, one assumption that is generating considerable controversy and not listed here is whether MMT applies to developing countries with or without flexible exchange rates, as allude to before.

Wray (1998) sparked much of this controversy (as this was certainly one of the objectives of the book), and two types of critiques have surfaced: *i*) a strong, negative critique aimed at discrediting MMT (Palley, 2015a; b; 2019; Epstein, 2019, among so many more), and *ii*) a friendlier, fellow-traveller critique, or those who aim to genuinely engage in an academic and scholarly way (see Galbraith, 2019; Juniper et. al; 2014; Lavoie, 2013; Seccareccia, 2004).

Among the strong critiques, Palley (2015a; 2015b; 2019), by far the leading post-Keynesian critic of MMT, has even made a mini-industry of papers and blogs pointing to some of the weaknesses and inconsistencies within MMT, calling some parts of it "fundamentally dishonest" (2019, p. 4, fn. 2), "oversimplified and incomplete" (ibid, p. 8), "strictly wrong" (2019, p. 6), or "a mix of old and new, the old is correct and well understood, while the new is substantially wrong (Palley, 2015b, p.45).

To be fair, MMTers themselves must accept part of the blame for fanning the flames of some of their critics, by either refusing to directly answer pertinent or valid criticism, or by engaging in their own discrediting behaviour, dismissing critics, in an often cult-like behaviour. Indeed, many authors have become *persona non grata* in MMT circles, myself included, for simply wanting to engage with them at the theoretical level.[11] Instead, many were met in return with virulent accusations and ex-communication.[12] MMT does not help itself as a movement when their reaction to criticism is to double down on the insults. It leaves many with the impression that MMT is more about burning bridges rather than building them.

I participated myself in this strong, negative criticism of MMT. In Gnos and Rochon (2002), for instance, we presented the first criticism regarding the consolidation argument. We took

[11] Many UMKC students have told me similar stories.
[12] I remember being in Kansas City when Matt Forstater lashed out at Malcolm Sawyer when Malcolm published his criticism of MMT full employment policies (Sawyer, 2003).

offence with the statement that "it is not important to distinguish between the Fed's and the Treasury's balance sheet" (Wray, 1998, p. 78), labeling this "the most important contradiction of the chartalist approach, [and] confusing them only confuses the arguments" (Gnos and Rochon, 2002, pp. 47-8) – a claim that has since been repeated for instance by Lavoie (2013) and others.

Then, in Rochon and Vernengo (2003), we argued that at times, it appeared that MMT undermined the notion of endogenous money in arguing that the State's power to tax and collect taxes played a crucial role in the creation and circulation of money. We argued that money was created by the banking system in relation to the needs of production. At the time, we interpreted chartalism, as it was then called, as meaning that "state money is exogenous, and credit money is a multiple of the former" (2003, p. 61), in reference to Wray's use of the word "leverage" (Wray, 1998).

But, to counterbalance this strong critique, there have been some friendlier criticism, from so called "fellow-travellers". In addition, there has been some support from unusual corners. For instance, in his pointed criticism of MMT, Brad Delong (on January 21, 2019; see DeLong, 2019), offers this last comment: "if one must choose between MMT on the one hand and the yahoos of either monetary stringency or fiscal austerity on the other, choose MMT. It is closer to being an accurate view." And more recently, even European Central Bank governor, Mario Draghi, admitted that central banks should be open to new ideas, including MMT (Bloomberg, September 23).

But despite the harsh criticism by some, and against the odds, MMT has gone on to develop quite a following. Indeed, whereas MMT was often consumed with internal post-Keynesian debates, it has largely transcended this narrow focus, and has become a true force to be reckoned with, leaving many of us with green with envy.

Indeed, as proof of the growth of the MMT movement, in the last few years, a number of MMT chapters around the world have been created. There are now MMT organizations in Brazil, Bulgaria, Canada, Chile, France, Germany, Europe, India, Italy, Mexico, Poland, Spain, and probably a few more countries.

And according to Google Trends, MMT or Modern Monetary Policy became prevalent in the popular lexicon. Figures 1 and 2 show how popular MMT or Modern Monetary Theory is, especially in the last five years, and peaking for now just very recently. Indeed, around February-March 2019, there was a large spike in interest corresponding roughly to two events: *i*) Alexandria Ocasio-Cortez's musings about MMT in early January, 2019; and *ii*) Krugman's most recent attacks on MMT on February 12 (column on Lerner, and functional finance), Kelton's reply on February 21, in Bloomberg; and Krugman's reply on February 25. Also, around March 20, 2019, Krugman was fairly active on Twitter over MMT-related topics. All this contributed to the public's awareness of MMT.

Figure 1 MMT on Google Trends, 2004 to present

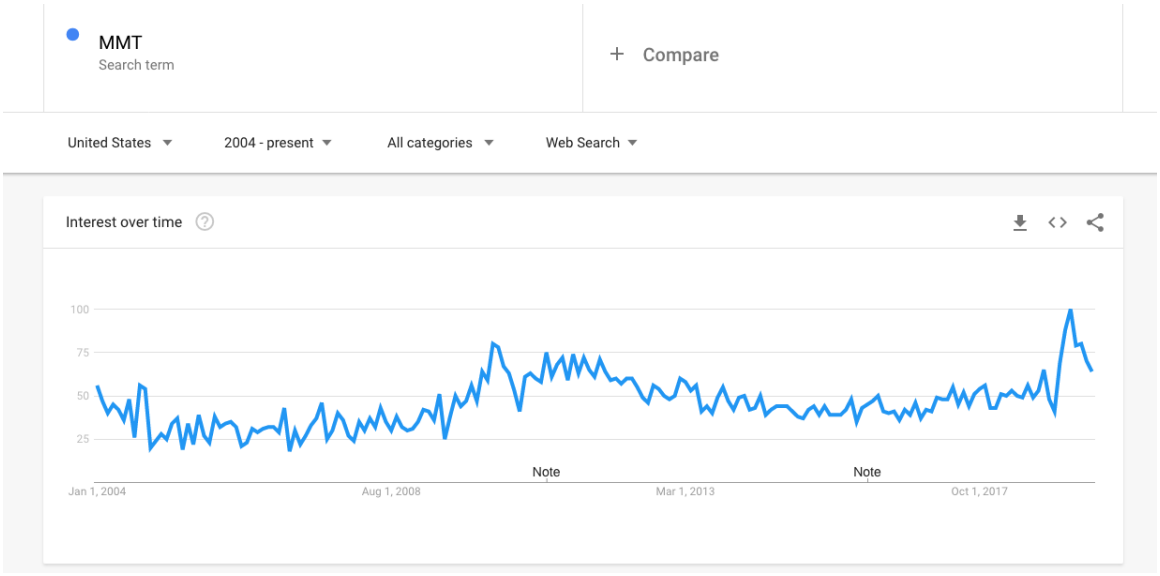
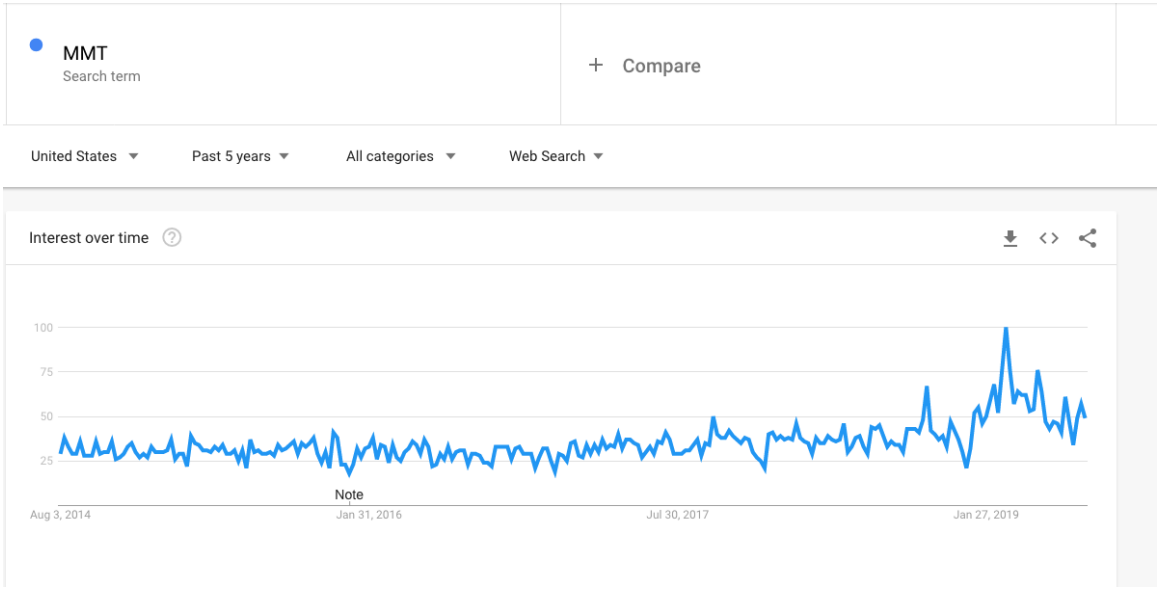


Figure 2 MMT on Google Trends, 2014 to present



3. The mainstream criticism

It is no exaggeration to argue that MMT has become the economic policy *du jour*. Unless you have lived under the proverbial economic rock, it seems everyone has now heard of this "modern monetary" approach to macroeconomic policy. Indeed, quite a number of high profile economists and policy wonks have an opinion on the matter. In fact, MMT has earned criticism from the best the mainstream macroeconomic profession has to offer, and even some high-profile elected officials. The question this short essay seeks to answer is why is this so? Why would such high-profilers even care and even bother to criticize MMT?

Among the high-profile criticism, consider for instance, Federal Reserve Board Chairman Jay Powell's rebuke: "The idea that deficits don't matter for countries that can borrow in their own currency I think is just wrong" (February 26, 2019).

Former IMF chief economist, Olivier Blanchard, while participating on a Peterson Institute panel said "The notion that you can finance this [deficit spending] by money is wrong, is plain wrong. I am not an MMT person."

The common thread among this criticism is clearly to discredit MMT. Like Krugman said recently: "Now, arguing with the MMTers generally feels like playing Calvinball, with the rules constantly changing."[13] Kenneth Rogoff called it "Nonsense", while Larry Summers called it "Fallacious at multiple levels." Summers also claimed that MMT "takes ideas that have a little bit of validity and extends them to a grotesque point where they defy the laws of arithmetic… So I believe MMT is very much misguided, the premise that somehow you can always print enough money to cover all of your debts."[14]

3.1 MMT and TINA

There have been other prominent economists looking to discredit MMT: the list is long. The important question is why, as asked above. There are plenty of theories out there that don't get a fraction of the attention MMT is getting. So why would people like the Fed chairman and others feel compelled to give his opinion on this so-called obscure theory?

Some would like us to believe this is just part of academic discourse. For instance, Krugman (2019) argues, "As long as they're out there claiming that standard macroeconomics is all wrong, I guess we need to respond." This then attempts to place the debate at an internal level, amongst economists, and in doing so, it therefore attempts to diminish the value of MMT, and reduces it to other internal squabbles like saltwater vs freshwater economics: an internal affair to be settled among economists.

But in my own opinion, there is much more going on, because mainstream economists usually don't bother commenting or responding to outside-the-mainstream criticisms. So why now? Why MMT?

I believe the answer is to be found in TINA: there is no alternative. Ever since Margaret Thatcher used the expression some three decades ago to justify draconian budget cuts and defend the established (neo)liberal economic and political status quo, TINA has been used y the right to justify fiscal austerity, fiscal consolidation, the privatization of state assets and the overall shrinking of the welfare state, the attacks on social security, and the attacks on unionized (and non-unionized labour) under the guise of labour market flexibility policies ever since. Indeed, for decades, mainstream economists and elected officials relied on TINA to convince the electorate that while their policies may hurt them, they were the only game in town, and they had no other choices. In other words, they were operating from the only available policy playbook, and while imperfect, it was all they had. There did not exist any other approach that came close to being sufficiently credible as to be considered useful. As MIT's Andrew Lo (2017) has recently put it (in his critique of the efficient market hypothesis)

[13] This criticism has also been raised by Palley (2019, p. 4, fn. 2): "its proponents constantly change their positions." See also Henwood (2019), who speaks of a "bait and switch".
[14] https://ca.finance.yahoo.com/news/larry-summers-modern-monetary-theory-mmt-grotesque-000909244.html

"It takes a theory to beat a theory", and there just was no alternatives out there (despite the thousands of post-Keynesian books and papers).

Hence, for the past three decades or so, neoliberal or mainstream economists, their political leaders and princes of finance, have used the dominant doctrine and TINA to justify some of the most ruthless policies of austerity, deregulation and privatization, with very lucrative consequences. Such policies contributed to (growth of) the wealth of the 1%, and the development and institutionalization of a dual economy: austerity for workers and profits for the rest (Epstein, 2019). In other words, the policies of the last 30 years have been good for the economic, political and financial elites. It is in this sense that Queiroz (2018) calls TINA "an ideological and political subversion of liberalism" (see also Munck, 2003). TINA has become the first line of defense, and offence, against any conceived threat to the neoliberal order.[15] Until now.

So obviously, any approach that aims at undermining this unhealthy relationship between TINA and the elite is bound to be attacked. And this is how I interpret the voracious attacks from the prominent quarters of policy and political corners: the meteoritic rise of MMT threatens not only the established theories, but also their own standing within society So when critics have claimed MMT would harm the economy, what they are really saying is that MMT would harm the economy "for them."

This is certainly how I interpret the recent attempt by a number of American Republican Senators, led by Senator David Perdue of Georgia, to make MMT unlawful. In their May 2nd press release, in fact, the Senators were careful to label MMT as "experimental", thereby ensuring TINA. Since it was only experimental, it therefore could not be taken seriously as a credible alternative.

By not only breaking through, but by becoming a world-wide movement, MMT, in my opinion, represents the greatest threat to TINA. What MMT has done, which no other approach has achieved, is to destroy the myth that there is no credible alternative to the established neoliberal agenda. In that sense, the criticism must show that it is radical, socialist, dangerous, irresponsible, etc.

4. Conclusion

It is undeniable that MMT has achieved what many post-Keynesians only dream of. As a result, it has brought on the attacks of the mainstream, which wishes to show that MMT remains a fringe theory led by even more fringe economists. This is to be expected, of course, as the greatest achievement of MMT so far has been to disprove the idea that there is no alternative to neoliberal ideology. In a Keynesian world of uncertainty, this was fully expected.

But the popularity of MMT has raised a number of strategic questions, in particular, what should be the role of post-Keynesians in all this? This is certainly not an easy question given the often tense relationship (for which I also assume some responsibility).

[15] This may also be a reason why mainstream authors adopting post-Keynesian ideas do not quote us at all. Part of the rationale here is that by refusing to acknowledge the origin of these ideas, they continue to myth of TINA.

So far, as indicated above, the internal critiques have run from mild to the extreme. Yet, with MMT gaining ground in policy circles, the strong/negative post-Keynesian critique will only reveal internal strive, and contribute in the same way as the mainstream critiques do, to undermine and discredit MMT. And to what end? It is as if the ideas of those post-Keynesian authors cannot be seen as a threat then neither should MMT. And this is unfortunate, especially since there is real potential in convincing some mainstream scholars of the credibility of MMT ideas. After all, if MMT is "a mix of old and new" post-Keynesian ideas, then to wish for the downfall of MMT is also to wish for the downfall of post-Keynesian economics. After all, if Paul Krugman can declare "I'm not an MMT fan, but it's a whole lot better than the economic doctrines Republicans adhere to" (Twitter, May 3, 2019), then we can only imagine how others would be willing to embrace MMT-PK ideas. We know a number of central banks have expressed interest in endogenous money, and many heterodox ideas are getting a fairer hearing these days. This should give us pause with respect to the inner wars and the jockeying for the PK mantelpiece.

This said, I still stand behind my own criticism of MMT, and accept much of what many others have written concerning the weaknesses of MMT. In particular, MMT tend to appropriate long-established post-Keynesian ideas as their own, and tend to dismiss criticisms by fellow-travellers in an overly uncompromising way. So in this sense, MMT must share a large part of the blame.

I also believe there is still much that needs to be cleared up about what exactly MMT stands for. In this sense, Krugman's and Palley's Calvinball analogy is certainly valid.

To this end, it is important for MMT scholars to re-engage with post-Keynesians rather than ignore them, for two important reasons. First, there are a number of gaping holes left to be explained and filled in, and post-Keynesians can play a role in developing the logic and arguments needed. At the moment, MMT scholars seemed more interested in going it alone rather than continuing a dialogue with post-Keynesians and finding common ground, who have raised serious and legitimate arguments. Second, as stated above, the number of scholars interested in MMT is very small and has not changed much in the last 25 years. The legitimacy of MMT will not come from the army of untrained activists, but from scholars.

For the time being, therefore, we should restrain our public disagreement, and limit it to professional conferences, as was the case at the Eastern Economic Association sessions in 2019. Post-Keynesian books and papers that ask "What's wrong with MMT" serve very little purpose, and do not engage, but aim to discredit. We should give MMT all the encouragement it needs to continue its rise and challenge of the mainstream.

Lastly, will MMT succeed? Despite the incredible success they have enjoyed in recent years, I doubt very much they will, and this is why. Social movements, if MMT can be categorized as a social movement, always have two components: *i*) a leader (MMT) whose purpose is to pierce through, shift the middle ground, but eventually peter off; *ii*) a less radical version (post-Keynesians) emerges, whose ideas seem more palatable, and ultimately flourishes. These are the times in which we live. MMT has done an amazing job of shifting that middle ground by having everyone talking about it, comment and attack it, but in the end, post-Keynesians may end up holding the alternative play book. After all, is this not how we should interpret Lawrence Summers recent comments on Twitter (August 28, 2019)? "Can central banking as we know it be the primary tool of macroeconomic stabilization in the industrial world over the

next decade?" to which he answers "We have come to agree w/ the point long stressed by post-Keynesian economists."

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Author contact: lprochon2003@yahoo.com

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Modern monetary theory: is there any added value?

Malcolm Sawyer [University of Leeds, UK and Fellow, IMK]

Abstract
The paper opens with a brief sketch of the origins of money and the nature of "modern money" in respect of the role of the state, central bank and commercial banks. outlined. It is argued that there has been a lack of attention to the application of the ideas on initial finance and final finance drawn from the Italian circuitist analysis tradition, and that lack of attention has led to confusing statements. Central bank money is always needed by government to enable expenditure to proceed and can be created at virtually zero resource cost. It tends to detract from the important issues which relate to the institutional and political constraints on the central bank creating money, whether central bank money is always accepted and the implications for "final finance" and how far should be government go in its spending? It is argued that the significance of the MMT argument that government expenditure precedes tax revenue is greatly overstated. Proposals for job guarantee/employer of last resort programmes would not achieve their stated aims of achieving full employment and price stability. The claim that the application of MMT would have inflationary consequences is dismissed. The limits of monetary sovereignty are briefly explored.

Key words modern monetary theory, budget deficits, job guarantee, full employment, financing

JEL codes E24, E40, E60

1. Introduction

It is often noted that modern monetary theory (MMT) has a wide range of literatures from books, academic, blogs, commentaries and Twitter interchanges. It has a range of adherents who make many claims for MMT ranging from the serious academic to the frankly bizarre. In this paper I focus on the contributions of leading contributors to MMT in terms of their academic work and to some degree their blog type writings.

In Section 2 the views of MMT on the origins of money and the credit nature of money are briefly summarised. This leads into the nature of "modern money" in respect of the role of the state, central bank and commercial banks. In Section 3, it is argued that there has been a lack of attention to the application of the ideas on initial finance and final finance drawn from the Italian monetary circuitist tradition, and that lack of attention has led to confusing statements. It is acknowledged that central bank money is always required by government to enable expenditure to proceed and such money can be created at virtually zero resource cost. But while it is relevant to acknowledge that it provides an answer to the question of "where does the money come from", it tends to detract from many more important issues. These relate to the institutional and political constraints on the central bank creating money, whether central bank money is always accepted and the implications for "final finance" and how far should be government go in its spending?

Proposals for job guarantee/employer of last resort programmes have been central to the MMT since the beginning and aim to secure full employment and price stability. It is argued in Section 4 that such proposals would not achieve their stated aims. Section 5 considers and largely dismisses the claim often made that the application of MMT would have inflationary

consequences. The limits of monetary sovereignty are briefly explored Section 6. The paper is completed by some concluding remarks.

Terms such as financing, funding, "paying for" are widely used in the MMT and other literatures, though often with different meanings. In this paper, the distinction between initial finance and final finance is drawn upon (as discussed further in Section 3 below). I will be pedantic and use the term initial finance (or (initial) finance) to mean the availability of money to enable expenditure to occur, and final finance or funding to refer to the sources and uses of funds accounts.

2. Origins and nature of money

MMT has been closely associated with chartalism and the State theory of money (Knapp, 1924) which locates the origins of money with the State (or other social organizations). There has been a stress on the token nature of money as a credit relationship, and the rejection of the metallist view of money (Goodhart, 2003, Wray, 2003). The association of money with the State means that the money (as a unit of account and the money form as a means of payment and settlement of debt) operates within the jurisdiction of the State. The State and money is further emphasized by the nature of coins and (in later periods) notes which are embossed with the sovereign mark etc. Trade between different jurisdictions has to (at least initially) have more of a barter form, though at later stages with exchange rate being established between the currencies.

Whatever the precise origins of money, it is generally the case in recent times that a change in the unit of account comes from State action, as, for example, in the case of the adoption of the euro, and the countries from the former Yugoslavia introducing their own currencies to replace the Yugoslav dinar. The form of money in most industrialised economies can be described in the following manner. A central bank, closely associated with the State, is the bank of the State and the bank of (commercial) banks, and in both relationships can act as a lender of last resort. The State (or at least central government[1]) spends in the form of central bank money and only accepts payment of taxes in the form of central bank money[2]. Transferable liabilities (demand/cheque deposits) of the commercial banks are money being denominated in the unit of account and generally accepted as a means of payment, of which such deposits form the vast bulk of money. Money, especially central bank money, can be created at close to zero cost, and can be readily created but also destroyed: e.g. money created by commercial banks in the loan process is destroyed when loans are repaid. In the case of notes and coins, the creation and destruction does not refer to their physical creation and destruction but rather entry into and exit from the private sector.

3. Initial finance and final finance

There is an important distinction to be made between *initial finance* and *final finance* (or funding), taking the terms from the monetary circuitist analysis (Graziani, 1987; 2003). Initial finance is required for any expenditure to occur in that the prior possession of money is required in order for it to be spent. Final finance refers to the funding of expenditure over a

[1] Other tiers of government may operate through the commercial banking system.
[2] Payment of tax by an individual could be in form of bank notes; rather more likely to involve instruction by the individual to her bank to transfer bank reserves to the central bank.

particular period, that is the source of the funds (from income, from savings, from borrowing) needed to underpin the expenditure undertaken.

The circuitist analysis has generally focused on the initial financing of production, where it is required to cover the costs of planned production and to enable the expenditures, and requires possession of money which may be provided through bank loans. Final finance refers to the funding in the sense of the sources and uses of funds relating (in this example) to the costs of production.

This general line of argument applies to the government and the financing and funding of its activities. Just as firms cannot finance their "initial spending by future revenues that do not yet exist and, therefore, must rely on bank credit, the same would apply to the state. In both cases, when firms and the state engage in spending, there must be money creation" (Bougrine and Seccareccia, 2002, p.66).[3] It is clear that for government expenditure to occur, there has to be the availability of purchasing power in the form of money, and this comes in the forms of the issue of notes and coins and the use of its central bank to transfer reserves to the banking sector. Since government expenditure has to be (initially) financed in order to proceed, it can be readily seen that when a multiplier analysis of the effects of government expenditure has been undertaken it has been implicitly assumed that central bank money is indeed available to the government. This is akin to the implicit assumption made in respect of private expenditure (e.g. when analysing investment, it is implicitly assumed that banks will make loans available as required). If central bank money were not available to the government then the government expenditure could not take place.[4]

The immediate changes in assets and liabilities following government expenditure (initially) financed by central bank money involves reserves held by commercial banks rising, and the bank deposits held by the public increasing to the same degree, which may be held in demand deposits and time/savings deposits. There may be some rise in the notes and coins held by the public.

Following a higher level of government expenditure, economic activity will rise, taxes will be paid and money (in the form of bank reserves) return to central bank as payment of taxes. The government budget position will differ with a rise in budget deficit or diminution of budget surplus. The related questions arise as to how that budget changes are funded and the relationship with private saving. There will be sales/purchases of government bonds (and thereby money returns to government and central bank). Government expenditure stimulates private expenditure and private production, and the private expenditure and production needs to be financed, and hence loans and thereby bank deposits created. There would in general be a change in loans provided and deposits: this is not through any operation of reserve ratio requirements (as reserves have risen) but through the higher level of economic activity and the financing of that activity.

It is indisputable that government expenditure can only occur if (initial) finance is available, and that the spending by government injects money (in the form of reserves with central bank and cash) into the private sector. It is also indisputable that central bank money can be created at virtually zero resource cost. It is also the case that the national money created through the central bank is domestically accepted as payment and government transfer

[3] See also Sawyer (2014).
[4] See Cesaratto (2016) for much more extensive discussion on these points.

payments (and the international acceptance is briefly considered below under monetary sovereignty). Although money is accepted by people, it does not follow that there is a demand to hold money as part of asset portfolio and more usually money is accepted in order to dispose of it through spending or purchase of financial assets. It will, of course, also be the case that much of the money created through government expenditure returns through taxes, fines and sale of government bonds.

The precise ways in which the central bank operates and its relationships with the government vary between countries and over time. The MMT literature (e.g. Bell, 2000; Fulweiller, 2017) has been a detailed analysis of the manner in which (generally for the USA) the central bank money/government expenditure nexus works.

The MMT supporters have generally argued for the consolidation of government and central bank. “The consolidation hypothesis does not describe current institutional arrangements; rather, it is a theoretical simplification to get to the bottom of the causalities at play in the current monetary system. It is correct that, under current institutional arrangements, Treasury must receive funds to its account at the central bank before it spends and that this is accomplished through taxes and bond auctions, but that is not MMT’s point. The consolidation logic ignores current self-imposed institutional constraints on the Treasury and the central bank” (Tymoigne and Wray, 2015, p. 30).

This tends to carry the idea that the central bank will always provide additional central bank money to enable government expenditure to proceed. I would argue that there needs to be recognition that the central bank can be operationally independent of central government (and is not necessarily owned by the State), and a general analysis is needed which allows for the central bank to be constrained (legally, politically) in its creation of money, as reflected in the quote in the previous paragraph. However, when the central bank is State owned, the consolidation of balance sheets is appropriate in arriving at the overall public sector debt position. Thus, it is argued that in the analysis of initial finance of government expenditure, the central bank is to be treated as operationally independent of the central government to enable analysis of the legal and political constraints on the creation of central bank money.

The funding of government expenditure can be readily set out (and for simplicity a closed economy case is taken initially). Government expenditure (G) is funded by tax revenues (T) and the net sale of government bonds (DB). Some of the government bonds will have been acquired by the central bank through purchase, and the net increase in central bank money (held as reserves by banks, DCBM) is equal to the quantity of bonds purchased by the central bank (DBb).

The consolidated accounts of central government and central bank would then read:

(1) $G = T + DBh + DBb = T + DBh + DCBM$

where DBh is the net increase in bonds held by the public.

The budget deficit (G – T) is equal to the difference between private savings (S) and private investment (I). Hence:

(2) $S – I = G – T = DBh + DCBM = DBh + DBD$

where DBD is the increase in bank deposits which correspond to the increase in bank reserves with the central bank, which are equal to DCBM.

There is clearly a funding budget constraint on government expenditure, even though such expenditure can always potentially be (initial) financed through central bank money. The ex post funding accounting requirement is given by eqn. (2). The *ex ante* funding constraint comes from the amount of net private savings (savings minus investment) which would be available if the economy were operating at full employment.[5] This can be written:

(3) budget deficit BD ≤ S* - I*

where * after variable signifies the level of that variable which would be achieved under conditions of full employment. As public expenditure is expansionary and tax rises deflationary, the level of economic activity and employment is dependent on the scale of the budget deficit. Pushing the budget deficit past that limit through higher expenditure and/or lower taxes would take the level of economic activity past full employment and threaten inflationary pressures. The standard Kaleckian approach (elaborated in Sawyer, 2019) coming from the view that the government should aim to operate the budget position to achieve full employment is that the government should aim to ensure that the inequality in eqn (3) becomes an equality. The practical difficulties of achieving such an outcome have to be recognized including the complications which arise from variations in the propensities to save and to investment and thereby variations in S* and I*.

The argument is made by MMT proponents that government expenditure has to precede tax payments, which are to be viewed in terms of draining liquidity from the economy rather than in terms of funding government expenditure. “In an economic system in which a sovereign government operates through its own monetary system, spending (or lending) must occur before taxing. In addition, taxes are not a funding source in that logic. They are part of the destruction of government currency, i.e. they return currency to the issuing government. Thus, the government “budget constraint” is more relevantly interpreted as an *ex post* identity that shows the sources of injection and destruction of government currency. It is not an equation describing the choices to fund government expenditure” (Tymoigne and Wray 2013, pp.5/6).

It can be readily accepted that money cannot be used in payment unless it is in existence, and in the case of government the payment of taxes cannot take place unless central bank money has been created, usually through accompanying government expenditure. Whilst it can be readily acknowledged that government expenditure involves creation of central bank money and the payment of taxes destroys central bank money, it does not follow that in any time period government expenditure has to precede tax payments. An increase in the tax rate would lead to higher tax payments which can be paid from the existing central bank money. This would lead to some drain of central bank money from the private sector which may have to offset through the operations of the central bank.

MMT is often represented as though much of government expenditure is to be funded by increase in central bank money.

[5] The difficulties of defining full employment have to be acknowledged, and also that in order to achieve full employment of labour there has to be sufficient productive capacity.

> "The government does not need to borrow if it runs a deficit. Firstly, that is because it can, at least in theory, simply run an overdraft at its central bank, on which no interest may be charged. This negates the need for borrowing. Second, government borrowing actually makes little apparent economic sense in an economy using the fiat money of the national government because the money that is supposedly borrowed has already been created by the government when injecting cash into the economy through its spending" (Murphy, 2019).

Although this quote says no interest *may* be charged, the current practice in many countries in that interest is paid by central bank on bank reserves. This also indicates that the issue of reserves by central bank is a form of borrowing. It is also the case that money created has to be held somewhere in the economy, though it can be destroyed through repayment of loans (in the case of commercial bank money) and payment of taxes and purchase of bonds (in the case of central bank money). The requirement that the money in existence has to be held raises the question as to whether the money will be willingly held and if not what are the repercussions. The traditional monetarist type answer is inflation as people seek to spend the "extra" money. Another approach is the effects on interest rates and financial stability as people seek to move their savings out of money into interest bearing assets.

The question can also be asked as to the appropriate manner in which the budget deficit be funded as between issue of bonds and of (central bank) money. Recall from above that BD = DB + DCB = S – I: net private savings (in a closed economy) are held as a combination of government bonds and central bank money. The central bank money is held as bank reserves to which there is a counterpart in the form of bank deposits held by the public. The limitation on the use of money funding of budget deficit then comes from limits on the willingness of people to hold their (additional) savings in the form of bank deposits (and for the banks to accept holding reserves with the central bank as assets corresponding to their liabilities in the form of bank deposits).

4. Job guarantee / employer of last resort

MMT authors have often associated themselves with proposals under the heading of employer of last resort/job guarantee (see, for example, Wray, 1998; Wray et al., 2019). As the term "job guarantee" or something similar have been used in association with a range of policy proposals which do not share many of the features of the MMT job guarantee schemes, I will refer here to job guarantee/employer of last resort (JG/ELR) to emphasise that it is the schemes proposed by the MMT people which is being discussed here. Schemes such as the American New Deal and its Public Works Programme through to the Argentinian Jefes y Jefas programme are cited as cases where some form of job creation and guarantee for specific groups have had some success. Programmes along these lines often have a considerable role to play in creating socially useful employment. But these do not fully fit with the criteria of the JG/ELR which is the provision of work for anyone at the minimum wage. The JG/ELR proposals of the MMT have the characteristics of offering a job (in the public sector or in non-profit organisations) at the minimum wage to anyone who seeks work, and that the JG scheme acts like a buffer stock providing employment when private demand (plus "mainstream" public demand) is low but not when it is high. The hiring of workers under

JG/ELR is a conditional demand for labour – that is conditional on absence of sufficient demand in the private sector (and mainstream public employment).[6] As Wray put it MMT

> "ALREADY had our full employment policy: the Job Guarantee (also called employer of last resort, public service employment and buffer stock employment). It was from the very beginning THE central stabilizing component of MMT … We have always insisted that the JG is inseparable from MMT" (Wray, 2019).

The idea of buffer stock employment has echoes of buffer stock schemes designed to stabilise price in the face of fluctuating demand and supply conditions. The operation of such schemes is generally undertaken in the context of a homogenous commodity for which there can be a single price; and their continual operation requires sufficient storage capacity to meet the fluctuations in demand/supply conditions and sufficient funding to pay for the purchase of surplus. Carrying this over to the case of employment faces the obvious issue that labour is not homogeneous, and hence not paid a uniform wage which leads to proposals that those in what has been termed "buffer stock employment" (BSE) would be paid the minimum wage. In order for such employment to be effectively provided, there has to be the capacity (capital equipment, managerial) to provide the buffer stock employment.

Michell (1998) argues for a "BSE [buffer stock employment] policy whereby the public sector absorbs all the current idle workers into paid employment at a base level wage that it sets and maintains." He develops a "relevant price stability concept" – the NAIBER [non accelerating inflation buffer employment ratio]. "The BSE model allows currently idle workers to contribute in many socially useful activities including urban renewal projects and other environmental and construction schemes, … personal assistance to pensioners, and assistance in community sports schemes" (Mitchell, 1998, p. 549). Other writers have used similar socially useful activities, though from the prospective of employment creation socially un-useful activities would also serve. As the "buffer employment rate" rises "resources are transferred from the inflating non-buffer sector at a price set by the government; this price provides the inflation discipline. The disciplinary role of the NAIRU, which forces the inflation adjustment onto the unemployed, is replaced by the compositional shift in sectoral employment, with the major costs of unemployment being avoided" (Mitchell, 1998, p.552). If some form of NAIRU existed, the operation of JG/ELR could still be inflationary in that it in effect adds to level of demand for labour and it is the level of employment which exerts inflationary pressures through, for example, enhancing workers bargaining power. However, inflation implications could be mitigated by the construction of additional productive capacity on which the JG/ELR employees would work.

There are (at least) four major shortcomings in the JG/ELR proposals, namely the question of the nature of the jobs which would be provided by JG/ELR, the payment of minimum wages, the undermining of mainstream public employment and the provision of productive capacity.

Which jobs?

Jobs which are dependent on public expenditure (whether within the government sector or outside) should be undertaken on the basis of the economic, social and political benefits which would be provided. The proponents of JG/ELR often list many social beneficial jobs

[6] See Sawyer (2003, 2005) for detailed critique of "employer of last resort".

which could be undertaken within the schemes such as social care, environmental clean-up, education. A minor note: these jobs are generally seen as "progressive", but any jobs, e.g. in defence, would from a demand and employment creation perspective serve equally well. The main point I would make is that if jobs are socially beneficial then they should be undertaken on a long term basis and not be subject to variations in the level of private demand. To take an illustration – it should not be the case that someone receiving social care is told that you cannot receive it today as there is a higher level of private demand and employment and you will have to wait for a downturn in private employment. The JG/ELR would need to be limited to jobs which either meet some "one-off" demand (e.g. responding to emergency) or which relate to the timing of public investment. Instead I would advocate that the level and structure of public expenditure be set according to social needs, and that fluctuations in private demand be addressed through a tax system which enhances the automatic stabilisers of fiscal policy, the variation of some tax rates in response to movements in aggregate demand (for example, variation in social security contribution rates dependent on level of employment) and "discretionary" public investment.

Minimum wages

In order for JG/ELR employment to operate in this conditional manner it has to be at (or below) minimum wage. Otherwise people would often seek JG/ELR employment (which is guaranteed) rather than mainstream employment. The payment of minimum wage to those in the JG/ELR schemes could have a range of effects of which two are highlighted here. First, much of the work undertaken under JG/ELR would be similar to that which is undertaken in "mainstream" public employment. There is every prospect of downward pressure on public sector wages. Second, JG/ELR employment may often be preferable for an individual as compared with employment in the private sector. For example, a JG/ELR position offering 35 hours work a week at minimum wage would be preferable to a mainstream job involving part-time work less than desired (so those classified as underemployed: check which definition of unemployment), those involving a zero hours contract (or similar) at or just above the minimum wage. Further, there would be no risk of redundancy under JG/ELR employment which is acting as a "buffer stock" and always willing to provide employment.

Undermining public sector employment

The operation of JG/ELR in macroeconomic terms can be viewed as an increase in public expenditure which has to be financed (as any form of expenditure does) which only operates when there has been a decline in private expenditures. It differs from mainstream public expenditure involving employment at minimum wage. For example, Wray (2019) writes Job Guarantee "offers a basic wage … providing a GND [green new deal] job to anyone willing to work"; a Green New Deal requires rather more than people working at the basic/minimum wage. The jobs which would be provided under JG/ELR would often be substitutes for mainstream public employment being undertaken at minimum wages. There is an obvious temptation for public sector employment to gradually shift towards minimum wages.

Availability of productive capacity

In order for JG/ELR to operate there has to be productive capacity in the right quantity and in the right places to enable someone otherwise unemployed to be employed on JG/ELR. The operation of a buffer stock requires there to be sufficient storage space in times of low demand to be able to purchase and then store. An alternative approach comes from

identifying the social needs which are to be addressed through additional government expenditure, and to undertake meeting those social needs on a permanent basis and constructing the appropriate productive and managerial capacity. The fluctuations in private demand to be addressed through progressive tax system to enhance the automatic stabilisers and discretionary fiscal policy. For some discussion on this see Sawyer (2019).

5. Are there inflationary consequences?

MMT has often been dismissed on the grounds of the implementation of policies based on it would be inflationary, and would lead into conditions of hyperinflation. This was summarised in the resolution put to the US Senate: "Recognizing the duty of the Senate to condemn Modern Monetary Theory and recognizing that the implementation of Modern Monetary Theory would lead to higher deficits and higher inflation."[7] There often appears to be a lazy association between periods of hyperinflation involving very rapid growth of the stock of money with a causal relationship between growth of the stock of money and inflation.

Money is created and destroyed every day of the week. Central bank is put into circulation within the private sector via central government spending; it is withdrawn from private circulation when taxes are paid, and when government bonds are purchased by private individuals. Any idea that government able to create ("print") money is on the path to hyperinflation is contradicted by everyday occurrences.

A money financed increase in public expenditure could be envisaged as having some inflationary implications potentially arising from two sources. The first would be that the overall level of demand in the economy is raised, and the level of demand has some inflationary consequences. The effects of any expansion of public expenditure on inflation would depend on the current position of the economy relative to any inflation barrier. Insofar as an accompanying JG/ELR programme added to the effective capacity of the economy to be compatible with full employment, then the inflationary effects could be minor.

The second would have echoes of a monetarist approach to inflation. The initial financing of public expenditure provides the means by which that expenditure can occur. The degree to which the stock of money rises as a result of an increase in public expenditure depends on the degree to which the budget deficit is monetised and the degree to which current account deposits at commercial banks expand as a result of the loan financing of private expenditure. A feature of the monetarist explanation of inflation comes from the notion that an expansion of the money supply could lead to a position where the willingness of individuals to hold money (the "demand for money") exceeded the expansion of the money supply leading to individuals holding an "excess" of money. In turn, this was viewed as leading to an increase in expenditure and prices.

A budget deficit which was largely or wholly funded by an increase in central bank money held as reserves by the commercial banks could have consequences. The increase in bank reserves would be matched by an increase in deposits held by the public with the commercial banks. The implications for economic activity, interest rates and prices would depend on the reactions of the public to holding the increase in deposits. Insofar as there are more bank deposits than the non-bank public are willing to hold, there could be implications for spending

[7] Senate Resolution (2019)

(and hence economic activity and prices) and for the demand for other financial assets. I would argue that there is nothing intrinsic in the observation that central bank money enables government expenditure to proceed that leads to inflation. But what may lead to inflation whether in prices of goods and services or in asset prices would be attempts to largely fund government expenditure through higher levels of central bank money.

6. Monetary sovereignty[8]

The MMT approach stresses that a monetary sovereign state is able to issue its own money, and hence domestically the government can then always finance its expenditure through creation of its own money as its citizens will always accept that money, bolstered by their need to acquire the central bank money in order to pay taxes. Further, provided that the State issues debt denominated in its own currency, then it need never default on that debt as it can, if required, issue the money to meet the interest and principal payments. The claim is made that "a monetary sovereign government does not need foreigners for its finances" (Tymoigne and Wray, 2015, p.38). It is though relevant to consider the limitations of government spending and borrowing which arise in the context of an open economy. It is, of course, the case that such limitations are much more severe for many countries whose currency is not widely accepted as compared with the USA.

An expansion of government expenditure can be expected to lead to an expansion of private expenditure. In both cases, initial finance has to be available coming in the form of central bank money and commercial bank money respectively. Further, in both cases, the expenditure will have funding implications. In the context of an open economy, I look at the implications for initial finance and final finance (funding) in turn.

When government expenditure involves imported goods and services there is the question of the currency in which payment is made and whether foreigners will accept the domestic currency. In general, this involves somewhere along the line exchange of domestic currency for foreign currency. In a flexible exchange rate world, that currency exchange can occur though possibly involving some depreciation of the domestic currency. Any limitations on the initial financing of public expenditure then comes through potential effects on the exchange rate.

In terms of funding, the size of the current account position changes (directly from the government expenditure on imported goods and services and indirectly through multiplier effects on the private demand for imported goods and services. From a funding perspective (and the sectoral balances): $G - T = S - I + CA$, where CA is capital account inflow, which is required to cover the current account deficit. A (perhaps key) constraint on the expansion of public expenditure comes from a resulting increase in the current account deficit (reduction in surplus) and the requirements for additional borrowing (whether by private or public institutions). A government which is able to undertake borrowing denominated in its own currency faces an easier time than one that is not able to do so. Even so, there may still be the threats of partial default arising from inflation and currency depreciation, with effects on the interest rates. There would also be limits on the ability of the private sector to borrow from abroad whether the debt is denominated in domestic or foreign currency. The general

[8] See, for example, Vergnhanini and De Conti (2017) for arguments that MMT does not apply in "peripheral economies".

proposition is that a country may be limited in the level of economic activity which can be achieved through the implications for the current account position and the requirements to fund any deficit.

7. Concluding comments

In Molière*'s The Bourgeois Gentleman*, Monsieur Jourdain remarked, after the word prose had been explained to him, "Well, what do you know about that! These forty years now I've been speaking in prose without knowing it!" There is a sense in which macroeconomic analysis has been deploying the relevant part of MMT analysis for more than 70 years without fully acknowledging it. When the effects of government expenditure are analysed, it has to be taken that the government expenditure has been financed by the availability of money, and by central bank money which is what government spends. The MMT school is correct to point out that government expenditure need never be limited by the lack of initial finance as the central bank can create (or permit) any required central bank money. The emphasis on that point distracts attention from the key issues of the social desirability of the proposed expenditure, the availability of resources to meet the requirements of the intended expenditure and the funding of any resulting budget deficit, and it is from the latter two that the economic limitations on public expenditure arise. It is not responsible to foster the idea that (central bank) money can be made readily available to finance an expansion public expenditure without taking account of the funding implications for the budget deficit and the availability of resources. It is, of course, often the case that (*ex post*) funding would be available following an expansion of public expenditure, and that unemployed resources are available, and that a fiscal stimulus would be appropriate in order to promote higher levels of employment. In the approach to fiscal policy and budget deficits, the MMT approach adds nothing to the Kaleckian approach of the use of the budget position to seek to secure full employment (Sawyer, 2019).

The MMT approach is damaged by its close association with employer of last resort/job guarantee with the provision of unskilled work at minimum wage. It would be a much better approach to plan public expenditure to satisfy social needs, to design a fair and equitable tax system and to vary the balance between levels of public expenditure and tax revenue in response to (anticipated) variations in private demand.

The answer I give to the question posed in the title of the paper is that MMT has made explicit what was often previously left implicit – namely that government expenditure is (initially) financed through central bank money. But MMT has not added to the basic Kaleckian insights that budget deficits are often required to secure full employment and that fiscal policy should be operated with the aim of securing full employment.

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Author contact: m.c.sawyer@lubs.leeds.ac.uk

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The significance of MMT in linking money, markets, sector balances and aggregate demand

Alan Shipman[1] [The Open University, UK]

This essay explores some neglected elements in the MMT view of money, and its relation to other (mainstream and "Keynesian") economic approaches, which might affect the economic content of its policy recommendations. Excitement over the macroeconomic implications of modern money theory (MMT) often deflects attention from its origins, as an explanation of what money is and does and how it came into existence. Section 1 of this contribution asks what is new (or judiciously revived) in the theory's explanation of money, and Sections 2-3 explore its significance for the way we understand the relationship between money and markets, as a foundation for reviewing MMT's macroeconomic contribution in sections 4-5.

MMT's integration of the financial sector with aggregate demand analysis helps to clarify why, while governments can avert a recession caused by private-sector liquidity squeeze or other aggregate demand deficiency, this requires an expansion of *circulating* money via fiscal deficit spending. Base-money expansion via quantitative easing is not enough. MMT's three sector balances approach delivers powerful policy implications that have now been taken up in public debate, but depends on an analytical distinction between private-sector saving and investment which could mislead if misaligned with accounting measurements. Behavioural assumptions appropriate for applying macro balances to policy for a demand-constrained economy could be undermined by a downturn featuring supply shocks, resulting in stagflationary interventions. The role of falling tax rates and rising debt in widening income and wealth inequality means that MMT's growing influence could have unintended political consequences.

1. Money-of-account and money in circulation

After the *Treatise on Money* (Keynes, 1930), Keynes and his followers moved on to more urgent fiscal and monetary policy questions from which their attention never fully returned. Harrod (1969, p. 3) began his own treatise on *Money* - the distillation of forty years' teaching - by observing that "many primitive societies, including the feudal regimes of the middle ages, have conducted most of their exchanges without the intermediation of money", citing the prevalence of landlord and peasant self-sufficiency or payment in kind. He went on to suggest that "The use of money as a measure of value arises naturally from its use as a medium of exchange" (1969, p. 3). On this basis, money only started to function as a "unit of account" with the onset of industrialisation as more people began to sell their labour or goods for money and needed to name their price.

MMT has plausibly reversed this sequence, recognising that money became the unit of account as soon as accounts began to be drawn up – long before the first published description (in Europe) of double-entry bookkeeping by Luca Pacioli in 1494. Money is likely to have appeared *first* as an abstract accounting device – recording who owed what to whom

[1] Faculty of Arts and Social Sciences, The Open University, Walton Hall, Milton Keynes, MK7 6AA.

– in many places that lacked the precious or base metals required to mint a "commodity" money which people could carry around. A unit of account is needed for general agreement on how much of one item should exchange for another, or repay a debt. In a barter system the unit could be a commodity, like a cow or an hour of labour; but these are hard to standardise, and their acceptable "exchange rates" vary as technologies (or seasons) change. There are advantages in a separate "money" whose relatively stable exchange-value allows commodities' shifting use-values to be accounted for. Money's essential function is as a unit of measurement for transaction flows, commodity stocks, assets and liabilities. "Complex multilateral indirect exchange – that is, an authentic market – presupposes a money of account" (Ingham, 2004, p. 25).

Once established as a unit of account, money becomes a store of value and can also start to function as a medium of exchange and means of deferred payment. It becomes a medium of exchange when sellers are willing to deliver in return for money (or of a credit agreement that will later be settled by transfer of currency), and when buyers know that handing over money now will ensure delivery later. Money is interchangeable with credit, since even money as currency is a form of loan, entitling the recipient to be "repaid" by delivery of goods they buy later. Currency, as a representation of money-of-account, is in effect a loan to the holder of that money, settled when the recipient of the currency deposits it and receives a transfer of money from the holder's account.

Money's use in current or deferred exchange, in any community larger than a close-knit village, requires a portable form or representation of money (of account) to enter into general circulation. The representation is conventionally called currency, a diminishing subset of which takes physical form as notes and coins (cash), most now being carried in "virtual" firm as a plastic card or its phone-screen image. Currency overlaps with, but does not equate to, legal tender, which is money in a form that creditors must (legally) accept in repayment of debt (Bank of England, 2019). The apparent conflict between MMT's version of credit theory and Lawson's (2019) theory of money might be avoided by observing that Lawson is discussing currency – a socially positioned representation of money as debt – whereas MMT asserts the primacy of the represented money as a unit of account.

Currency can bridge both a gap in trust between two transactors and a gap in time between two transactions. The trust gap is closed because currency is a generally accepted form of IOU, which someone can take as payment knowing they can use it in future to make payments to others, even if they do not know or trust the person who pays them with currency. Private IOUs are not acceptable, unless issued by someone whose word is his or her bond to an exceptional degree. Frank McNamara's use of his business card to pay for a meal when he forgot his wallet may have enabled him to found Diners Club (Diners Club, 2019); but for everyone else, the restaurant is only satisfied by a card backed by cash or by a bank that's credit-checked us. Sellers ask for payment in a generally accepted IOU, that can be deposited as money in a bank, because a merely personal promise to pay is too easily reneged on; a word cannot substitute for a bond, hence "evil is the root of all money" (Kiyotaki & Moore, 2002).

The time gap is closed because currency can represent the unexercised entitlement of someone who sells one commodity and does not immediately receive another in return. In the absence of currency agents would be confined to delayed barter, "which could only exist generally in face-to-face communities in which every exchange partner has knowledge about others such that he can trust payment to be made for items given" (Humphrey, 1985, p. 51).

Time and trust gaps are hard to distinguish in practice, since most commodity transactions (and all borrowing and lending) involve a delay between one side delivering and the other side paying. Money is required because complete trust can never be established, even in small groups or family networks: an increase in one party's belief that the other will later pay up, honouring their personal IOU, tends to mean an increase in the other party's gain from unexpectedly reneging. And in the absence of trust, completion of transactions cannot be enforced – even with the most effective policing and judicial processes – unless money also changes hands.

Circulating money (currency) is indistinguishable from credit. It represents unexercised spending power, for which someone "owes" a delivery of goods or services at a later date. Equivalently, it is a promise to transfer an agreed sum of money-of-account, if and when the recipient pays the currency into their account. MMT goes further than reviving the credit theory of money, by offering a very specific answer to the long-evaded question of how a form of currency first gets agreed, putting one representation of money into general circulation. To assess this answer against the mainstream's it is first necessary to ask why money matters, in a market economy now fast becoming "cashless".

2. Why money matters for market economies

Putting money into circulation – as currency representing money-of-account – solves the practical problem of how to prevent cheating (undelivered goods or unpaid invoices) when there are too many scattered and simultaneous trades for anyone to keep an accurate, up-to-date central ledger. The problem does not exist with barter, where goods exchange directly for goods (or services) and the transaction ends once this is done. It may soon cease to exist in today's economy, as technology makes it possible to re-create a central ledger from instantly updated bank records, and make instant, verifiable transfers of funds between buyers' and sellers' (or borrowers' and lenders') accounts.

When first introduced, however, circulating money had more revolutionary effects, according to free-market theory. It became the foundation of a private enterprise system in which individuals and firms, as small traders, could conduct their business unobserved and unregulated by stifling government or corporate bureaucracy. The obvious problem with a centralised ledger is that it must be kept by a central authority, which thereby potentially gains a panopticon's surveillance and regulatory powers (and might also grant itself special privileges, such as charging commission or crediting money to its own account). Putting the money of account into circulation, as currency, radically decentralises the ledger, into the myriad accounts with which households and companies track their own finances. A circulating currency, representing the money of account, enables large numbers to engage in simultaneous decentralised trading – fully settling their exchanges, running-up and repaying debt – without the transaction being observed by a central regulator or recorded by central authority. It means that any prospective buyer who can pay the market price is allowed to buy at that price, and any prospective seller who is happy with the market price can sell at that price. The existence of an advertised "market price", set collectively but by uncoordinated action, removes the need for bilateral bargaining or haggling over price, which might expose prospective buyers to "price discrimination" on the basis of what the seller thinks of them personally, or knows about their preferences and ability to pay.

While not eliminating central power, circulating currency greatly disperses it, by allowing traders to make reliable transactions out-of-sight of any central record keeper. Central oversight of the system is lost, because it is no longer needed for ensuring that traders stay within their means and transaction patterns stay coherent. If everyone trades through a bank account, a central authority might still be able to requisition and collate the accounting information. Until now this has not been possible without significant delays and costs, which have deterred the compilation of "macrodata" from "microdata" even for the most important economic aggregates. "Existing sets of microdata relating to establishments, households and government agencies are not viewed as part of the statistical system" (Ruggles & Ruggles, 1999, p. 319).

Even the staunchest free-market advocates acknowledge that some oversight is needed to stop the over-issuance or counterfeiting of currency. But they regard these risks as worth incurring, because of the social benefits from decentralised, unobserved two-party transaction. Agents are shielded from discrimination, and permitted to trade anonymously, because permission to trade – and the price and quantity at which deals are struck – depend solely on the quality of what they offer as sellers and the quantity of money they can offer, not who they are. Market trade, decentralised through circulating currency, thus prevents both price discrimination and any other form of prejudice that could arise if transactions became "relational" with buyers or sellers allowed to compile information on another (except, perhaps, regarding creditworthiness, but this can be done non-prejudicially via a third-party reference agency).

A decentralised bilateral trading system enabled by circulating money leads, in the Austrian view, to individual transactors receiving all the information needed to get the best deal, and the information being scant enough for them to process in real time. Markets with portable money avoid the problems of imperfect, incomplete information and bounded rationality that other authors (e.g. Williamson. 1975) argue blocks profitable trades with "transaction costs". Neoclassical general equilibrium (GE) theory has always struggled to demonstrate that free markets are a better route to it than "socialist calculation" of a central plan. In contrast, Austrian theory can – with the help of circulating money – by presenting the attainment of equilibrium as dependent on decentralised trade. This enables markets to operate with numerous, anonymous, interchangeable and heterogeneous agents on both sides of the transaction – in contrast to GE, which explicitly uses a "representative agent" by imposing homogeneity of preferences, and implicitly needs agents with market power to set prices (Richardson, 1960).

The existence of a unified ledger, recording all transactions and agents' resultant assets and liabilities, is not inherently problematic to free enterprise, provided it is decentralised or "distributed" across the trading community. Many Austrians welcome the arrival of Bitcoin and other cryptocurrencies based on the Blockchain, a continually updated distributed ledger. Their objection is to the centralisation of account information, which could give one agency the power to maintain it and possibly to monitor transactors through it. Blockchain turns from Austrian dream to nightmare when a central bank proposes to launch its own cryptocurrency to replace commercial bank accounts, as China's is reportedly preparing to do (Cuthbertson, 2019). A centrally designed and managed distributed ledger could potentially lead to all money (and not just cash or cheques) being withdrawn from circulation, replaced by centrally supervised transfers of money as the unit of account – a China-sized version of the village-pub bar tab, made possible by digital technology and dictatorial ideology.

The introduction of circulating money does not eliminate centralised power, since a generally agreed representation of the money-of-account appears to require a central authority to issue it, or at least to regulate its supply. But any sovereign monopoly on currency issuance is broken by the arrival of private-sector banks, whose "inside" money created through decentralised lending long ago overtook the "outside" money represented by state-issued notes and coins. MMT has usefully clarified the way that governments' unfunded expenditure (not financed by taxation or backed by borrowing from the private sector) represents a new source of outside money, greater in importance than traditional note and coin issue. But as soon as it makes such unfunded expenditures, the new outside money arrives in private-sector accounts from which it can enter decentralised, unmonitored circulation.

3. Markets and money as constructed not evolved

The centrality of circulating money in the Austrian depiction of free markets contrasts with that of mainstream GE theory, which finds no obvious reason to insert (a representation of) money among the commodities in circulation. Money in GE functions solely as a unit of account (the numeraire), since individuals and firms transact either by agreeing the size and timing of commodity transfers at the start via a series of forward contracts, or by continually agreeing trades via a central auctioneer who conducts and records the necessary accounting transfers.

> "It is not clear if what we know as Walrasian general equilibrium theory is compatible with a model in which money as a medium of exchange plays an essential role… incorporation of monetary exchange tests the limits of general equilibrium theory, exposing its implicitly centralised conception of exchange" (Ostroy, 1989, p. 187).

Circulating money could conceivably be a solution to the problem of getting an economy into general equilibrium, given that a centralised scheme of current and future transaction devised by a Walrasian auctioneer is both impracticable and inimical to the individualism that free-market theorists champion. But there are unsolved problems in explaining how a system of uncoordinated decentralised exchanges can quickly and reliably achieve and maintain general equilibrium. Kirzner (1992) concedes that the social knowledge problem which free markets solve, according to Hayek (1945), actually has two distinct elements. One imperfection – the setting of offer prices too low by prospective sellers or too high by buyers – can be thought of as quickly resolved by market signals (excess demand or supply) and price adjustment. But the second – the existence of mutually profitable trades which potential buyers and sellers are unaware of – is not automatically signalled by the market process. This has to be "solved through entrepreneurial discovery of hitherto overlooked opportunities" and presupposes "a powerful market tendency for all pure profit opportunities to be noticed and grasped" (Kirzner, 1992, p. 170). It does not matter that many opportunities for profitable trade are unknown to most market participants , because "entrepreneurs" will quickly spot the chance to meet unsatisfied wants or put resources to more profitable uses, and (if unhindered by regulation) conduct the missing trades.

Conventional accounts of the market economy appeal to general equilibrium theory to "prove" the existence and uniquely desirable properties of GE, then jump to an Austrian account of profit-driven price-led decentralised trade and entrepreneurial alertness to explain how the equilibrium is achieved. The existence of circulating money as a portable version of the unit of account, enabling the transactions ledger to stay decentralised, is as essential to the Austrian

vision as the existence of abundant entrepreneurship. This begs the question, unexplained by the "function" of money and unresolved by GE, of how a generally accepted currency enters circulation. The Austrian answer, a "spontaneous emergence" from market-based interaction, lacks both historical and logical support, seeming to trace its origin to a system that cannot work until it already exists. Kirzner (1992, pp. 175-177), paraphrasing Menger and Hayek, likens the convergence on one currency to the formation of a path across a snowscape in the tracks of the first person to cross it – ignoring the contrast between a solo expedition, which may be highly advantageous to the person who completes it, and the offer of an individualised IOU, which no other traders (other than close friends) have any reason to take up.

MMT provides the profoundly anti-Austrian answer that a sovereign nation standardises on whichever currency its government chooses to accept in payment of tax. This gives taxpayers a strong preference for receiving income and storing wealth in the government's chosen currency. So even non-taxpaying traders are pressurised into using it. When a government decides to charge taxes in (say) dollars, it does not necessarily prevent traders from continuing their exchanges in other mutually-recognised currencies. But they have little incentive to do so, as those currencies' fluctuation (and likely depreciation) against the dollar makes them a risky and unprofitable way to store the funds for their next tax payment. The one exception is where a government takes tax payments in a "soft" local currency, while domestic trade has been dollarized due to past inflation. Taxpayers will continue to use dollars, trading them for local currency when they need to make a tax payment, because of the likelihood of the local currency continuing to depreciate. Governments in this situation tend eventually to replace their local currency with one pegged against the dollar, or to re-designate the dollar as acceptable for tax payment This re-aligns with the situation proposed as typical by MMT, but raises the possibility of causation running the other way, with governments choosing to tax what most people are paying with – a dispute that only further historical probing can resolve.

While advocates like to depict a single type of "free market", there is in practice a variety, ranging between the Austrian ideal of a fully decentralised marketplace and the centralised, currency-free system of exchanges implied by GE theory. This can be illustrated by the existence both of "order driven" and "quote driven" financial markets, and the transition between them that can follow technological or regulatory change. An order-driven system collects and advertises (anonymously) all prospective buyers and sellers, the amounts they wish to buy or sell and the prices they are happy with. A quote-driven system features market-makers who intercede between buyers and sellers, setting buy or sell prices either by buying and re-selling on their own account or by acting as intermediaries who link a buyer and a seller unilaterally. Conventionally, order-driven systems are said to promote transparency, because all extant offers and demands are displayed alongside one another and continually updated, but to restrict liquidity, because there is no guarantee that buyers or sellers can (at that moment) actually complete the transaction in their favoured price range. Quote-driven systems are said to promote liquidity, because deep-pocketed marketmakers can always buy or sell at the advertised price, but to sacrifice transparency, because marketmakers' trades (and the bilateral trades they promote) are not visible to all participants.

Financial economists observe a related distinction between markets that work over-the-counter (OTC), and those that run through a central exchange. OTC markets are conventionally admitted to lack both liquidity and transparency compared to the centralised alternative. These characteristics expose non-centralised markets to systemic-risk problems, as experienced in the 2008 global financial crisis (in which an early breakdown of OTC

derivative trades propagated the financing constraint which spread to large banks). The advantage of OTC trade is to widen markets to products (such as small-firm equities and tailor-made option contracts) which could not be listed on a centralised exchange due to compliance-cost or specificity. Post-crisis reforms (under the Dodd-Frank Act) forced central reporting of US OTC derivatives trades, a move designed to raise their liquidity and transparency, but to which traders responded by shifting much of their trade to less regulated (European) markets.

Quote-driven trading systems whose intermediaries absorb liquidity risk from traders, and centralised markets which display all traders' exposures for prudential regulation, might represent hybrid forms which promote an adjustment towards general equilibrium, without a radical decentralisation of trade and the associated need for a portable form of money. But they have often proved unstable, are largely confined to trading in products whose heterogeneity is curtailed by regulation, and are a long way from the popular depiction of how markets work. As well as critically re-assessing the functions of money, in a way that draws closer attention to market mechanisms, MMT has revived a neglected debate on the social origins of money as currently used.

4. MMT and demand-deficiency explanations

Through its association with renewed attention to macroeconomic sector balances, developed (in the common Levy Institute home) with Wynne Godley and other stock-flow-consistency developers, MMT has become a driving force behind the new Keynesian prescriptions discussed, and occasionally implemented, in response to the global financial crisis (GFC) that began in 2007. Some MMT-informed economists burnished their credentials by forewarning of that crisis. Their lessons on when, and why, monetary economies suffer demand-deficient downturns are especially important at present, with policymakers receiving conflicting advice on whether today's recessionary threat comes from a recurrence of the GFC's liquidity-crisis conditions or a new set of shocks this time arising on the supply side.

MMT's macroeconomic insights arise from the macroeconomic balance identity

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

which implies that if a country's external accounts are balanced (M=X), any private-sector surplus of saving (S) over investment (I) will have to be offset by a public-sector deficit with government spending (G) exceeding tax revenue (T). As this is purely an accounting identity, policy prescriptions derived from it depend on additional behavioural assumptions about the processes that enforce the identity ex-post (Palley, 2019).

MMT revisits the proposition of Keynes (1936) that effective demand is linked to excessive liquidity preference – the unspent portion of private-sector income being held as money in readily expendable form (currency or cash). The holding (or hoarding) of money in this form means that it is not spent on consumption goods, or directly invested (by spending on industrial capital goods), or made available as funds that others will invest (because the expected return on capital projects is kept below the costs of financial capital, due to lack of demand for bonds and stocks that would bid their price up and flatten their yield). This situation, shown by MMT as an excess of private saving over investment, can only be offset by a fiscal deficit or current-account surplus. It recalls Keynes' (1936) observation that saving

and investment decisions are taken by two sets of people with no obvious mechanism (in a decentralised market economy) to equate the two. When transactions are dispersed, through the use of currency as a medium of exchange, those who hoard the represented money (rather than spending it) cannot assure producers that they will spend it on their products in the future. So producers are deterred from investing in future production. The problem does not arise if money serves only as a unit of account, and is not needed as a medium of exchange or store of value. Hence the absence of demand deficiency in general equilibrium theory, unless caused by "imperfections" that inhibit price adjustment.

That money as medium-of-exchange is a *representation* of money as a unit-of-account highlights the sometimes neglected Keynesian insight that there are two distinct motives for moving money out of a bank account. One is to buy a financial or real asset that is expected to yield investment income, investments being "illiquid" to the extent that they cannot be instantly, reliably converted back into money-of-account at their present market valuation. The other is to turn money-of-account into currency, so as to spend it in decentralised trading. Conversion into currency is sometimes viewed as a move into greater liquidity, because (to take a crude example) goods may still be bought for cash when an IT failure is preventing banks from processing debit-card payments. But this is to conflate cash with currency; both are representations of money, whose acceptance is conditional on traders' confidence of reconverting them to the unit of account.

Keynes (1936) was concerned about money remaining stored in people's or firms' accounts, converted neither into currency for spending on consumer goods or fixed industrial assets, nor into financial assets in a way that reduced their yield so as to make fixed assets more attractive. A downturn caused by non-transaction money being hoarded as currency, rather than invested, could be resolved if real interest rates fell low enough to make investment in fixed (or circulating) capital more attractive than holding money, and worth borrowing for. But speculative money-holding and price deflation could prevent real interest rates from falling far enough, or else the stimulating effect of lower interest rates could be offset by falling expectations of available projects' rate of return.

Subsequent developments (arising partly from breakdown of arrangements which Keynes tried to design for the post-war period) have raised two additional concerns. First, "financialisation" can increase the expected return on financial assets relative to directly-owned industrial assets, and on investments in financial institutions relative to those in non-financial business. Rising stock markets enable ongoing real returns to be made on re-trading existing financial assets, despite this doing little to promote the flow of investment via purchase of *new* share and bond issues. Real interest rates have been pushed down towards or even below zero, but money has been shifted into financial investment rather than into fixed or working capital that would actually boost supply. The money that households and firms choose to part with, along with the money that central banks injected via quantitative easing, has gone largely into revaluing existing industrial assets (lifting stock markets towards record levels) rather than buying and installing new industrial assets.

Second, increased regulation of market transactions (much of it required to prevent abuses by producers or financial institutions), and increased expenditure taxes, have incentivised the creation of alternative currencies for exchange of goods and service within sub-communities. Prominent examples are virtual currencies purchased within computer games; the digital wallets that now dominate transactions on China's e-commerce sites Tencent and Alibaba (Klein, 2019); and Libra, the cryptocurrency backed by "a basket of currencies and assets"

(Libra, 2019) for which social media giant Facebook has promised to launch a digital wallet. Whereas a digital card payment moves funds from the buyer's account straight to that of the seller, these systems "upload" funds from the buyer's account into a digital wallet, from which they are passed to a seller who then downloads them back into an account. Money-of-account is turned into currency which is then converted to a digital token, which is used in transaction before being turned back into currency and then money-of-account. "Digital wallets still require funds to be moved into the banking system for banking purposes" (Klein 2019, p. 11), but they offer users the benefit of trading without centralised regulation, taxation or observation, which traditional state-supplied currencies may no longer fulfil. This advantage is offset by a loss of liquidity, because the wallet currency (and any profits made trading with it) must be re-converted to conventional currency, then swapped for the unit of account, before it becomes an addition to the trader's stock of wealth.

The inevitable next step – allowing customers to "save" or "invest" their online currencies as well as spending them – will actually be a return to the financial future envisioned before the 2001 "dot-com" crisis – in which money-of-account can be converted simultaneously into an investment and into a currency for immediate expenditure. The same representation of money can then offer a return on investment and be exchangeable as (interchangeable with) cash. Merrill Lynch's "cash management account", launched in the late 1970s in time to catch the jump in US prime rates in the Reagan deficit years, offered customers a cheque account and debit card linked to a money-market fund that paid them interest, and allowed them to trade on margin (Noble, 1981; Egan, 1977). The arrangement sidestepped (perhaps hastening the abandonment of) the Glass-Steagall separation of commercial from investment banking, and was widely imitated. The Merrill chairman who oversaw this move into shadow-banking, Donald Regan, had moved on to become Reagan's Treasury Secretary well before the experiment (and later the whole company), met its end in a flight back to ordinary interest-free cash. But a financial industry geared (literally) to developing synthetic financial instruments, whose major players are still "too big to fail", will continually seek to offer financial instruments combining the liquidity of a currency with the real returns of an investment, eroding the incentive for necessarily-illiquid fixed capital investments.

Central banks have, as financial regulators, traditionally been wary of such innovations, concerned about the risks required to create any instrument combining high yield with high re-convertibility (into money-of-account), and the migration of those risks from regulated institutions to non-banks and shadow-banks (such as Facebook and the long-gone Merrill Lynch). In their role as promoters of a fully-employed, expanding economy, central banks have since the GFC been more concerned to combat deflation than to arrest new asset bubbles. But the exhaustion of their expansionary efforts, without sparking a strong enough recovery for interest rates to return to pre-crisis levels, has lessened resistance to the relaxed fiscal message long delivered by MMT. When public injections of money are done via a central bank, buying-back government bonds to lower interest rates and put more money back in private hands, they only swell the reserves of money-of-account (base money). They do not guarantee its entry into circulation. In post-2008 conditions higher bank reserves did not trigger higher bank lending, since collapsing demand removed the incentive to borrow for investment. "No-one spends reserves. They are not a medium of exchange" (Ashton, 2016, p. 94). Funds injected into private accounts do not automatically convert into investment, any more than other private savings, as Keynes had observed eighty years previously. MMT thus helps to clarify why, while governments can avert a recession caused by private-sector liquidity squeeze or other aggregate demand deficiency, this requires an expansion of

circulating money via fiscal deficit spending. Base-money expansion via quantitative easing is not enough.

5. "Divided" capitalism and private-sector imbalance

The macroeconomic accounting identity leads to some powerful MMT inferences on the scope for macro policy. Government bonds (issued to finance a fiscal deficit) are an essential financial instrument in which the private sector can park its surplus savings. Unless a private-sector surplus is offset by a public-sector deficit, the country must run a current-account surplus, relying on other countries to buy its excess production; but it is arithmetically impossible for all countries to run external surpluses. While a current-account surplus enables the "export" of capital, whose inflow might enable other countries to run equivalent external deficits for a time, this is likely to collapse when the capital-importing countries run up unsustainable external liabilities. "Global imbalances" may delay the reckoning but eventually lead to an implosion under the weight of foreign debt (Turner, 2016). MMT concludes that government deficits are the norm in countries whose high propensity to save (due to high average income) and/or low propensity to invest (due to exhaustion of technological opportunity, or a falling price of capital goods) gives them an endemic private-sector surplus.
This inference has put MMT at the head of an emerging consensus on the present policy challenge, behind which some prominent former "Keynesian" dissenters have recently fallen into line. The "secular stagnation" view largely agrees with this assessment of endemic private-sector surplus (I < S) in and beyond the western hemisphere, leaving its proponents sounding more sympathetic to the MMT-asserted need for ongoing budget deficits (e.g. Summers & Stansbury. 2019). Proponents of the "savings glut" idea who previously put faith in looser monetary policy to resolve it (notably Bernanke, 2015) have been led by experience to concede that fiscal expansion might be a necessary complement. A chronic private-sector surplus can help explain why endless public deficits need not become inflationary, even if there are no one-off factors (such as the rise of Chinese mass-production or a sinking world oil price) to account for western price levels staying stable or declining.

The flow of saving tends to move above the flow of investment in mature economies because of their rising stock of accumulated private-sector wealth. The gap between S and I is exacerbated by slow growth, which is then compounded by the low rate of investment. Large accumulated wealth, especially when held mainly in real-estate or financial instruments, worsens the deflationary imbalance in flows and the consequent distributional imbalance in stocks – wealth inequality widening, when the real return on financial investment (r) exceeds the real GDP growth rate (g), a typical situation in the US and Europe according to Piketty (2014).

MMT points to a situation that seems to dispel this economic and social doom. Governments can borrow costlessly, and stimulate the economy through public investment without raising their debt: GDP ratio, when the interest rate on public debt (i) is below the GDP growth rate (Kelton, 2019). If this situation co-exists with that depicted by Piketty, implying that r>g>I, it is likely to mean that the high return on private wealth is unsustainable and will eventually drop down to a smaller (risk) premium over I, which might even bring it below g. Even if the Piketty situation persists, public investment in social infrastructure (and environmental improvement) might counter the rising inequality associated with r>g, by boosting the "social wage" and public capital stock.

Surveying the world soon after the GFC, when governments were cutting welfare provision to finance the bail-out of rich bankers, Piketty warned "Keynesians" about a shift from redistributive tax towards the issuance of public debt which traditionally guarantees the rentier income of the leisure class. Government bonds' regressive redistributive impact explained "why 19th Century socialists, beginning with Karl Marx, were so wary of public debt, which they saw – not without a certain perspicacity – as a tool of private capital" (Piketty, 2014, p. 131). Ten years on from the crash, MMT seeks a renewal of the optimism that, as bonds still find a market with yields below inflation, rentiers can no longer live on their Treasury interest, and may finally have to take some entrepreneurial risk – reviving g in the process of raising r – if they want to continue enjoying a positive real return.

The MMT argument is reinforced if, over time, structural changes occur which shift capital-intensive projects into the public sector and/or make private-sector investment more capital-saving. Rising per-capita GDP is generally associated with governments taking more responsibility for building and maintaining core infrastructure, including transport, energy and telecoms networks, water supply and storage, schools and hospitals, social housing, social care facilities, and national or public security installations. Public commitment tends to rise even if the construction and maintenance of big infrastructures is "privatised" in an effort to cut public costs. The larger they grow, the more governments must invest merely to maintain the existing stock of public assets, extra investment being required in order to expand them or to deal with technical change which increases their rate of obsolescence. The real cost of infrastructure building and maintenance tends to increase over time, not least because of an unsubstitutable labour component whose real wages rise. In contrast, much private-sector investment has shifted from specialist machines and programs to mass-produced hardware or customisable software, reducing its unit cost, bringing down the investment cost of maintaining or expanding the productive capital stock.

A "Green New Deal" might ease the problem temporarily, by promoting significant public and private investment in re-shaping production to reduce exhaustible resource use and carbon emission. However, since its aim is to reduce material consumption and make investment even more capital-saving, it might ultimately exacerbate the tendency for the private sector to "over-save". If the world's carbon assets – currently worth billions on corporate balance sheets, become "stranded" because environmental rules outlaw their use, there will be a massive devaluation of individual and corporate wealth. This might induce some companies to invest more heavily to rebuild their asset stock. But such expansionary spending could well be offset by the sudden diminution of private-sector wealth, whose re-building would requires more saving, and the drop in banks' core capital and loan quality, which under current rules would lower their capacity to lend.

Although most countries' public and external sectors have expanded over time, larger economies' private sectors still typically account for most of GDP (at least since 1989). Given their diversity, structural difference between their "real" and "financial" elements (Ingham, 1984) and contrary drives towards accumulation and conspicuous consumption, is it inevitable that private saving will stay above private investment? MMT's one-sector characterisation encourages a differentiation of S and I by who does them rather than the type of expenditure they represent. Investment tends to be interpreted as "productive" investment by non-financial businesses, in fixed or working capital. Saving is ascribed to higher-income individuals and the financial institutions that manage their wealth, and includes the unspent returns and capital gains they make on existing savings or financial investments, as well as new purchases of bonds and shares.

In practice, the macro-accounting I is more appropriately defined as all expenditure out of income not yet generated, adding to demand before it adds to supply. It includes expenditure of capital gains and equity withdrawals, and debt-financed purchases of property, equity and bonds, as well as purchases of new capital equipment. The macro-accounting S represents all income from productive activity which is received and not immediately spent, resulting in deductions from aggregate demand that are not matched by deductions from supply. To adopt earlier Keynesian terms, I represents all "injections" to the circular flow of income by the domestic private sector, and S represents all "withdrawals". Too narrow a measurement of I, and any misclassification of I into S, can exaggerate the extent to which aggregate private-sector behaviour remains deflationary. The UK achieved cautiously accelerating GDP growth between 2013 and 2018 with a narrowing fiscal deficit and a widening current-account deficit, despite households being under pressure to pay-down debt and rebuild savings, and firms apparently sitting on large piles of cash or using them to buy back shares. The macroeconomic accounts suggest I was catching-up or even overtaking S for most of this period, ensuring growth despite the government's refusal to maintain a wider fiscal deficit. The powerful use that MMT makes of the three sector balances compels close attention to the accuracy with which they are measured, which may be especially hard to achieve when a large, mutating financial sector and a financialising production sector continuously test the neat conceptual division between S and I.

6. Conclusion: hazardous steps from modern money to modern monetary theory

Although they are now often conflated, modern money theory (MMT) remains a separate enterprise from the modern monetary theory to which its ideas and acronym now stretch. MMT remains a theory of what constitutes money, and how it is distinguished from such related terms as capital, currency and cash. Its proposition that governments establish the generally-circulated money through collection of tax has usefully re-engaged economic theory with economic history. It also highlights the difference between money-of-account and its representation as currency in circulation, whose importance will grow as corporations and governments begin seriously to consider replacing a decentralised money with one that returns transactions to a central, viewable record.

Modern monetary theory seems to follow logically from MMT, because a government that determines the status of money can in principle create its own, just by crediting additional sums to itself (directly or via a central bank). MMT has, by re-popularising the macroeconomic balances approach, helped return attention to the urgent question of why the American and European – and possibly Chinese – recoveries since the 2008 crisis remain so precarious, despite unprecedentedly long monetary (and in the US fiscal) relaxation. It has strengthened the challenge to the textbook economic warning that public deficits raise interest rates and "crowd out" private investment, along with the idea that public investment or consumption are "unproductive".

This contribution (and others in the collection) have explored some neglected elements in the MMT view of money, and its relation to other (mainstream and "Keynesian") economic approaches, which might affect the economic content of its policy recommendations. But as its influence grows, its political repercussions must also be watched. Although largely the work of progressive economists, MMT's macro message is of increasing political attraction to conservatives – consonant their long-held agenda to replace taxation with public debt, letting those on higher incomes turn a straightforward subtraction into a discretionary investment

which ultimately returns and augments their capital. Governments' power to continue deficit-spending, without a rise in interest rates, has been more keenly exploited by the Trump administration, and other conservative governments, than by those on the centre-left for whom the same actions would prompt sterner market reaction.

Before the GFC, governments' capacity to tax was being viewed as an indication of their power to drive development (DiJohn, 2010). Now their capacity to borrow is being cast in the same light. Whether this change is appropriately contra-cyclical, or a capitulation to those who view all tax as confiscation, is a question likely to be resolved by MMT's prescriptions for the next recession. It could be awkward if, as some formerly successful prophets (e.g. Roubini, 2019) are now suggesting, the next recession will result from shocks to supply and not to demand. The unintended deficit widening by UK governments in the early 1970s notoriously spilled over into inflation and wider external deficits, for which the only remaining remedies were socially regressive incomes policy and politically untenable protectionism (CEPG, 1977). The scope for public debt to redistribute from wage-earners to wealth managers, reversing the role of progressive taxation, could bring MMT political support from some uncomfortable directions. Even the most effective policy weapons can lead to embarrassment when taken up by generals (or Treasurers) intent on re-fighting the previous war.

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Author contact: a.shipman@open.ac.uk

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The political economy of modern money theory, from Brecht to Gaitskell

Jan Toporowski [SOAS, University of London, UK]

Just over a century ago, in a lecture at the London School of Economics, Dennis Robertson, the friend, critic and rival in monetary economics of John Maynard Keynes, bemoaned his lot as an expert on money, beset by monetary schemes of social improvement:

> "… one cannot set up, even in the most modest way, as a writer on monetary affairs, without becoming the target for a continuous stream of documents – manuscript, typed and printed – designed to show that the ills of the human race are all due to monetary mismanagement, and all curable by monetary manipulation. In the back streets of London suburbs and northern industrial towns, on the plains of India and the prairies of the Middle West, those who have Found the Light about Money take up their pens and write, with a conviction, a persistence and a devotion otherwise only found among the disciples of a new religion. It is easy to scoff at these productions: it is not so easy to see exactly where they go wrong. It is natural that practical bankers, vaguely conscious that the projects of monetary cranks are dangerous to society, should cling in self-defence to the solid rock, or what they believe to be so, of tradition and accepted practice. But it is not open to the detached student of economics to take refuge from dangerous innovation in blind conservatism. He must assess with an equal eye the projects of reformers and the claims of the established order; and to this end he must build up for himself a theory of money – a critical analysis of nature and results of the processes by which, under a modern system of banking, money is manufactured."[1]

Robertson could have been writing about modern money theory. The reference in his final sentence to the way in which "money is manufactured… under a modern system of banking" anticipates the insistence in modern money theory that money is always and everywhere credit money designed to repay debts. Even his location of the source of monetary reform in "the prairies of the Middle West" could be a reference to the members of the Economics faculty at the University of Missouri at Kansas City, who have devoted books and briefings to the promotion of Modern Money Theory. Practical bankers have by and large ignored their promotion – the practice of modern banking leaves little time for serious reading about monetary theory. But the policy doctrines associated with modern money theory have resonated with political movements opposed to the fiscal austerity of recent times. And the claims of Modern Money Theorists to being a legitimate strand in Post-Keynesian ideas have caused outrage among Post-Keynesians who believe themselves to have a more legitimate line in monetary theory.

[1] D.H. Robertson "Theories of Banking Policy" in *Essays in Monetary Theory* London: P.S. King and Son, 1940.

Modern Money Theory is not so much a systematic exposition of what money is and how it works in a capitalist economy,[2] as a set of doctrines with policy implications that promise to resolve the (monetary) ills of our economies. The principal doctrine is the notion that all money is state money, issued by governments when it spends money. Taxes are not necessary to finance that expenditure, but merely need to be large enough to make people hold that money, and hence "value" it. In the Theory, these doctrines are linked to a concept of "functional finance" originally put forward by Abba P. Lerner, an early feature of which (he was to drop it later on) was the observation that, in contrast to borrowing money, the monetisation of government expenditure (its financing by the central bank's creation of money) is costless, in that the government does not have to pay interest on cash.

Proponents of Modern Money Theory have been active in promoting active intervention in the labour market through a policy of having the government acting as an "employer of last resort" for the involuntarily unemployed. But this is not an essential part of the Theory and there is nothing particularly monetary about such a policy. The most essential revelation is its policy doctrine that fiscal deficits (the excess of government expenditure over revenues) that have been monetised are in effect "free money" that does not have to be repaid. Most recently, Modern Money Theory has been called upon to support fiscal initiatives that are not necessarily intended to provide last resort employment, such as the Green New Deal advanced in more radical sections of the Democratic Party in the US, or the protests of their comrades in Europe, railing against the fiscal rules preventing government expenditure to overcome Europe's economic depression.

So what is wrong with modern monetary theory?

If it is all so simple, and "free" government money can pay for everything, what is wrong with it? After all, the loan from the central bank to the government (the way in which a government deficit is "monetised" in a modern economy that uses bank deposits as means of payment) may easily be made effectively non-repayable by being "rolled over" or renewed on maturity, and any interest on the loan from the Bank (minus the Bank's costs) is added to the Bank's profits which of course belong to the owner of the Bank, the government. In this way, monetisation costs the government and the tax-payer virtually nothing. This economical, apparently free, method of financing government expenditure is of course attractive when public services, welfare and infrastructure are deteriorating in the face of austerity. But this low cost is only the case *at the time of the expenditure*. To understand the true efficiency of this kind of financing, it is necessary also to consider the consequences of such financing. In particular, it is necessary to understand how that money would be absorbed by the economy; in other words how money circulates.

Supposing that a new Democratic administration in the White House decided to raise expenditure on a Green New Deal to the value of 5% of GDP in each year of its four-year administration, and "monetised" this extra expenditure, leaving the rest of public expenditure to be covered by taxation or borrowing. After four years, the total money stock of the country would have increased by 20% of GDP. Supposing further that economic activity accelerated (in accordance with the Keynesian government expenditure multiplier principles) up to 3% per year, on average over that four year period. One could make the case that, with GDP 12%

[2] That is, "debate on the influence of money and monetary policy… how does monetary policy affect the economic system and how effective is it (or would be) in achieving its aims." (V. Chick *The Theory of Monetary Policy* London: Gray-Mills Publishing 1973, pp. 1-2.

higher at the end of this Democratic administration, "normal" economic activity would absorb in the usual exchange and financing 12% out of the 20% of the increase in the money stock. But what would happen to the rest? Where would it go?

To answer this question it is necessary to look at how money circulates in the economy. The essence of a profit-making, capitalist economy, is that firms make profits and, in this way, accumulate monetary savings or reserves. Not all of course make the same rate of profit: many small businesses operate at a loss, or just break even. It is large corporations that have the highest rates of profit, due to their market power and their control over resources through their extraordinary ability to tap the whole range of financial markets. Through this economic activity, the extra money spent by the government will end up being accumulated by corporations, their shareholders, and the banking system that holds their accounts. If those corporations and banks are happy to hold onto this extra liquidity then there is no problem with the monetisation.

However, if the monetisation is done by a government to finance a radical programme, then it is unlikely that big business and its allies in banking and finance will contentedly sit on their accumulations of bank deposits. To paraphrase Kalecki, the cry will go up that the situation is "manifestly unsound" and they will find more than one economist to adjudicate that the increase in the money supply is inflationary. Even if there is no inflation, economists can be relied upon to provide models that will show inflation accelerating in the future. Paul Volcker's recent memoir, written with Christine Harper, and published to glowing reviews in the financial and business press, inevitably makes the case for the moment of glory in the central banker's career, when he crashed the US economy by squeezing the money supply in order to bring down inflation[3]. It also shows just how close is the reaction of Robertson's "practical bankers" who will cling in "self-defence to the solid rock, or what they believe to be so, of tradition and accepted practice" against "monetary cranks" behind radical policies.

This simplistic thinking will add to the political difficulties of any expenditure programme undertaken by a radical government. The alarm will be raised among corporations, banks and the rich, that their bank deposits are about to be devalued by inflation. In any other country in this situation there is only one thing they can do: convert their bank deposits into bank deposits in a currency deemed to be more secure (the US dollar is the traditional haven in inflationary times). The result will be a currency crisis and the eventual devaluation of the country's currency. That devaluation of the currency, by increasing the cost of imports, will then cause the inflation that was the pretext for the alarm.

The exception here is the United States. Its currency is the reserve currency of the world and "safe haven" for the savings of the rich in the rest of the world. This means that the rest of the world stands ready to absorb any amount of excess liquidity in the US financial system, as it has demonstrated during the recent period of near zero interest rates at the Federal Reserve. However, under Trump-nominee, Jay Powell, that period is coming to an end and, with the slow-down in Chinese economic growth (the real engine of global economic growth in recent years), and the continuing economic stagnation in Europe, the American banks are becoming reluctant to direct their liquidity into underwriting meagre returns in the rest of the world. Much like after the First World War, America's excess liquidity will be ladled into American financial markets, there to cause not so much a renewal of inflation in the economy at large, but

[3] Paul Volcker with Christine Harper *Keeping At It: The Quest for Sound Money and Good Government* New York: Public Affairs, 2018.

financial instability, the responsibility for which can be laid at the door of any radical administration and its "unsound" monetary practices, exposed by the infallible insights of those "efficient" financial markets.

Monetisation of government expenditure may therefore be effective on an occasional limited basis. But a systematic policy of monetising public expenditure hands ammunition to the enemies of any radical change, whether it be socialism or the programmes of populist national solidarity espoused by the current administrations in London and Washington, Warsaw and Budapest. The greater is the monetisation, the greater is the mass of credit that can be mobilised by those enemies to bring about the financial crisis that their agents can blame on the "unsound" expenditure, monetary practice and fiscal policies of any genuinely reforming government.

Keeping money stable

That said, it should also be pointed out there are ways in which a government can increase the ability of the financial markets to absorb larger amounts of money. This is through expanding the long-term debt financing of the government and the taxation of wealth. When the government borrows money to pay teachers, pensioners, policemen, doctors, civil servants, and government contractors, and to subsidise the consumption of the less well off, it drains the "idle" liquidity that lies around in bank deposit accounts and transfers it into circulation in the "real" economy. This increases the "government expenditure multiplier" that drives the fiscal stimulus of the economy. Of course there is a cost to this, in the form of the interest that the rich will have to be paid for their loans to the government. But as long as the borrowing is in the domestic currency that the government issues, the government itself can fix the cost of its borrowing, whether through the rate of interest on reserves held at the central banks, or by "trading along the yield curve", that is by issuing short-term bonds and using the money raised in this way to buy in more scarce long-term bonds, pushing up the price of those bonds until the yield or interest rate on them is sufficiently low so that new long-term bonds can be issued to repay the short-term borrowing and "fix" the lower rate of interest in the long-term bond market. This is unusual, but not an unprecedented procedure in monetary control: it was used in the Depression and, most recently in America in November 2011, to bring down the rate of interest on long-term bonds.

Should we worry about the interest cost of the borrowing? Not really, as long as the tax system is adjusted to ensure that the interest cost does not entail undue transfers from tax-payers on modest incomes to wealthy bond-holders or rentiers. In the past the remedy recommended political economists from Ricardo to Schumpeter, Keynes and Kalecki, to overcome this regressive transfer of financial resources was a "capital levy" or a tax on wealth to pay the government's cost of borrowing, so that its financial budget was balanced. In the case of the United States, most government bonds are held by central banks and associated government agencies, and most of the rest is held by pension funds and insurance companies. Given the sorry financial condition of most mass pension funds, there may even be a case for raising the interest rates on government bonds. But there is certainly a case for reducing the tax privileges of the small number of the wealthy who use their privately managed pension schemes as a way of evading tax. The situation in Europe is rather different, because of restrictions on fiscal deficits and the limited bond operations of the European Central Bank.

Ideally, government borrowing should be repayable in the longest possible term, to fix the government's borrowing costs into the future and reduce the government's reliance on refinancing bonds when they come up for repayment. This too has the benefit of tying up those "idle" bank deposits in the secondary markets for long-term bonds: the rich are usually old (which is why they celebrate the young who inherit their wealth) and are unlikely to live to see the repayment of, say, a thirty-year government bond. But the secondary markets, where already issued bonds may be traded, are places where the rich may get their money back early from their thirty-year investment, turning over their "idle" bank deposits in buying and selling those longer term bonds. We may, along with Keynes, disparage this as mere "speculation". But as long as the rich are with us, and can derail progressive policies with their speculations, government borrowing to drain off their liquid assets must be an instrument of monetary control.

The other technique of keeping "idle" bank deposits stable is through taxes on wealth. The rich keep an inordinate amount of their wealth in the form of assets that are illiquid, that is they take a long time to sell, and may not sell for a good price. Most notable among these assets is residential real estate, designed to impress other members of the property-owning class, but rarely bringing in sufficient revenue to cover the running costs and maintenance of what Veblen called "conspicuous consumption". Taxes on such wealth oblige rich people to keep bank deposits in their portfolios to service their fiscal obligations. In this respect there is a glimmer of truth in the doctrine of Modern Money Theory according to which taxes are only needed to maintain the value of money. This is nonsense in any country whose tax-payers can dollarize to get better value out of US dollars than that country's currency. But it is true of wealth taxes in the United States, where residents cannot efficiently diversify into another reserve currency, so that wealth taxes oblige them to value their bank deposits above the dollar or nominal value of those deposits.

The rich will of course object mightily on the grounds that the object that is being taxed brings in hardly any income, in much the same way that British landowners, their revenues reduced by Free Trade in agricultural products, objected to Lloyd George's 1909 Land Tax to pay for the first state pensions, and created a constitutional crisis in a country still dominated (to this day) by semi-feudal institutions. But we should shed few tears of sympathy for them. They will of course receive this money back in interest and repayments on the government bonds that they hold; and to the companies that they own will accrue as profits the government's expenditure on that Green New Deal, or the expenditure of government employees and welfare recipients.

Brecht and the economics of everyman

Despite the best efforts of its academic partisans to ennoble Modern Money Theory with antecedents in the work of John Maynard Keynes, Georg Friedrich Knapp, Michał Kalecki, Abba P. Lerner, and Hyman P. Minsky, the theory itself bears little resemblance to the systematic thinking (as opposed to incidental insights) of these luminaries. For those partisans this may be evidence of the originality of Modern Money Theory. But the theory itself is not new. Its elements may be found in one of Bertolt Brecht's less well known plays, *The Days of the Commune*, portraying the rise and tragic fall of the Paris Commune of 1871 and one of the few stage plays to feature a central banker.

One scene of the play recounts a confrontation between a Delegate to the Commune, known only as Beslay, and the Governor of the French central bank, the Banque de France while, outside Paris, in Versailles, the government of Adolphe Thiers is conniving with the Prussian invaders to crush the Commune. In the play, the Governor is unnamed. But at the time of the Commune, it was Goustave Rouland, a French politician rather than banker, remembered today, if at all, for having preserved the Banque's gold reserves through the political crisis, but also for an interest in European monetary union on the basis of coinage minted in different countries but containing a standard amount of gold. Rouland had had a previous appointment as a Minister of Religion, where he sought Papal approval for theological training in state institutions in France. This may explain why he appears in the play entertaining the Ecclesiastical Procurator of the Archbishop of Paris: (The Archbishop was taken hostage by the Communards). When Beslay's arrival is announced, the Procurator is hidden away. On arrival, Beslay comes straight to the point:

> BESLAY: Citizen, the Treasury is refusing to open to the Paymaster of the National Guard. The soldiers' pay is due. If, by tomorrow morning, you do not make available ten million francs, you will be held personally responsible. These men have families to support…
>
> GOVERNOR: Monsieur Beslay, please don't think that I doubt for one second the rights of the Commune. The Bank of France does not engage in politics… … you must help to save the Bank. It is the property and wealth of your country. It is the inheritance of your country.
>
> BESLAY: Your lordship, please don't misinterpret us. We work like slaves in 18-hour shifts. We sleep in our clothes on forms and benches. For 15 francs a day each of us carries out the duties of three or four officials at a thirtieth of the cost. There has certainly never been a cheaper government. But we need ten million francs… …We have taxed neither foodstuffs nor tobacco, but we must have funds with which to pay our soldiers. We cannot put this off any longer and continue to govern. If we don't have ten million by tomorrow morning…
>
> GOVERNOR: Millions. I haven't even the power to give you one. You talk about corruption at your sittings. You accuse Monsieur Thiers of violating the regulations to obtain money and now you come to me and ask for funds when you haven't even got a Ministry of Finance to control your spending. You must create a Ministry of Finance. I shan't ask how, but show me some authority that I can recognise and accept.
>
> BESLAY: That will take at least a fortnight. Don't forget that we have the power.
>
> GOVERNOR: I cannot forget that I have my rights and responsibilitie… Let us consider together how we can satisfy the needs of our great and beloved city without arbitrarily transgressing the host of complicated, but I'm afraid necessary, rules and regulations of this ancient institution. If we can negotiate and co-operate on a peaceful, respectful basis I am completely at your disposal.

> BESLAY: Your lordship, I haven't come to shed blood but to secure the means by which the National Guard can be paid and the factories and workshops of Paris re-opened. The Commune, legally elected by the people, has got to be financed. In this matter too I am completely at your disposal… I will expect to hear your proposals.

Beslay departs and the Governor releases the Archbishop's Procurator from his hiding place to say "You may tell the Archbishop, the ten million francs will go by way of the usual route to Versailles."[4]

In Brecht's play, therefore, the Governor clearly represents Robertson's practical banker, who is more than just "vaguely conscious that the projects of monetary cranks are dangerous to society". His class instinct tells him that the political project of the Communards is dangerous, and he clings "in self-defence to the solid rock… of tradition and accepted practice" only to cast it aside in the interests of his class. Beslay's conception of money is more practical. He represents the proletarian Everyman, the hero of nearly all of Brecht's plays, interested in survival which, in a capitalist economy, means having the money to buy the necessities of life. The circulation of money outside his pocket is meaningless to him, and that is the weakness that brings him to the door of the Banque de France and allows its Governor to baffle him with his "complicated" but "necessary rules and regulations", hallowed by "tradition and accepted practice", formed in maintaining the stability of the old social order rather than the new.

The impertinent charm of modern money theory

Monetary heretics, or cranks, flourish in times of political crisis when the distortions of inefficiency and inequality, that mar the claimed dynamism of capitalism, become so egregious as to be obvious to the exploited and the socially aware. But awareness of waste and exploitation does not bring understanding of monetary processes.[5] Conditions of mass unemployment place a pressing need for money in the pockets of the poor and become the pretext for innovations in monetary theory. As the world sank into the economic depression of the 1930s, the socialist economist and academic G.D.H. Cole put together a book of essays entitled *What Everybody Wants to Know about Money, A Planned Outline of Monetary Problems*. The essays were by colleagues from Oxford University, of whom one, Hugh Gaitskell, was to become famous as leader of the Labour Party after the resignation of Clement Attlee in 1955. Gaitskell contributed to the volume an essay on "Four Monetary Heretics" that explains in a direct and simple manner the attractions of monetary innovations in crisis. He defined his monetary "heretics" as public figures who disagree in general with economists and have never held academic appointments in economics. His four heretics were Major Douglas, Professor Frederick Soddy, Silvio Gesell, and Robert Eisler. Soddy was the only academic, a Fellow of the Royal Society, and a Nobel Laureate in Chemistry in 1921. Gaitskell's conclusion was that the success of monetary heretics lay precisely in their recognition of what was obvious to Beslay:

[4] Bertolt Brecht *The Days of the Commune* translated by Clive Barker and Arno Reinfrank, London: Eyre Methuen. 1978, pp. 59-61.
[5] Cf. Geoffrey Ingham, Ken Coutts and Sue Konzelmann "Introduction: 'cranks' and 'brave heretics': rethinking money and banking after the Great Financial Crisis" *Cambridge Journal of Economics* Vol. 40, No. 5, September 2016, pp. 1247 – 1257.

> "… the heretic can claim that he is a practical man in touch with the realities of economic life and vitally interested in its reform, not content to toy with abstractions behind the shelter of a professorial salary. From his position he sees the depression as the general public sees it, as a paradox, as something not to be tolerated, as a problem for which there cannot conceivably be *no* solution, as a problem which *can* be solved at once. To plain man and heretic alike, the natural limitation to material welfare is essentially technical. That, quite apart from this, there should be almost as inevitable and difficult a problem of organisation, of social relations, is a vision confined as a rule to the expert who has to handle it…
>
> … A unique master stroke is required. There is to be no painful waiting, no lowering of standards, no difficult compromises, no social upheaval, but simply the adoption of the one perfectly simple, perfectly feasible PLAN…"

The attraction lies not just in the simplicity of the PLAN:

> "… the heretic is able to enlist support just because he is not an expert, just because he represents and expresses the common dislike against the expert. He is a plain practical man, proving to other plain practical men that the mysteries which these exalted intellects are alone suffered to understand are matters which can be made perfectly intelligible to the rest of the community. Thus he restores the public's self-respect."

Gaitskell denied any intention to suppress such heresies:

> "… it is of the utmost importance that every individual should be free to express himself on economic affairs. The plain man's instinct is in this case right. Economic experts can never be wholly trusted, and only with the utmost possible freedom criticism and construction can rapid scientific progress be made."[6]

Modern Money Theory presents an inversion of Gaitskell's definition of monetary heretics. The originators of the Theory are not amateurs, but a hedge fund manager and men and women with PhD's in Economics who offer to the "plain man" the ideas of Beslay. The political ambition for a better world, and revulsion against Robertson's "blind conservatism" of "practical bankers", are obvious. But is this enough?

The purpose of a radical economic policy is social and economic change, and not experiments in economic theory. Truly radical monetary theorists test their ideas against the possibilities of achieving that change, rather than using social and economic change to add radicalism to the thought experiments of academics and hedge-fund managers. Policies of environmental protection and improving the material conditions of working people through full employment and subsidy of workers' consumption (such as health, education and welfare)

[6] G.D.H. Cole (ed.) *What Everybody Wants to Know about Money, A Planned Outline of Monetary Problems* London: Victor Gollancz 1933, pp. 412-413. It was this phrase that Keynes echoed, perhaps unconsciously, in his *General Theory*, where he remarked that "the brave army of heretics", including Douglas, Bernard Mandeville, Thomas Malthus, Gesell and John A. Hobson "… following their intuitions, have preferred to see the truth obscurely and imperfectly rather than to maintain error, reached indeed with clearness and consistency and by easy logic, but on hypotheses inappropriate to the facts." (London: Macmillan, 1936, p. 371).

challenge the social and political interests that govern society. Brecht knew this, which is why he put his "modern money theory" into the mouths of Communards who had the naïve idea that the central bank has money, but no notion of the true place of central banks in the modern capitalist society. Modern Money Theory therefore represents a certain retrogression of monetary theory: a set of doctrines to reassure Gaitskell's "plain man" that the money is always there, rather than a theory explaining how money circulates in a capitalist economy. The doctrines are naïve and the radicalism lies in the purposes for which the money will be spent, rather than in any new thinking about money.

The Green New Deal and similar projects are worth having because they improve our lives and those of future generations. They are worth having and financing for the sake of those improvements and do not need the burden of crankish monetary ideas as an additional obstacle to the acceptance of social change, and a gift to those whose interests lead them to oppose social change. If we wish to be radical in our politics, we should look at how successful radicals in the past have succeeded in financing their programmes: Roosevelt's New Deal, the financing of the Second World War, and the reforms of Atlee's post-war Labour administration were all achieved without monetizing fiscal deficits. The flaws, discussed above, in Modern Money Theory indicate that more conventional monetary and fiscal policies may be more effective in financing radical reforms.

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Author contact: jt29@soas.ac.uk

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