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Working Paper

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FMM Working Paper, No. 44

Provided in Cooperation with:

Macroeconomic Policy Institute (IMK) at the Hans Boeckler Foundation

Suggested Citation: Palley, Thomas I. (2019) : What's wrong with modern money theory (MMT): A critical primer, FMM Working Paper, No. 44, Hans-Böckler-Stiftung, Macroeconomic Policy Institute (IMK), Forum for Macroeconomics and Macroeconomic Policies (FMM), Düsseldorf

This Version is available at:

<https://hdl.handle.net/10419/213401>

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FMM WORKING PAPER

No. 44 · March, 2019 · Hans-Böckler-Stiftung

WHAT'S WRONG WITH MODERN MONEY THEORY (MMT): A CRITICAL PRIMER

Thomas Palley*

ABSTRACT

Recently, there has been a burst of interest in modern money theory (MMT). The essential claim of MMT is sovereign currency issuing governments do not need taxes or bonds to finance government spending and are financially unconstrained. MMT rests on a triad of arguments concerning: (i) the macroeconomics of money financed budget deficits, (ii) the employer of last resort or job guarantee program, and (iii) the history of money. This primer analyzes that triad and shows each element involves suspect economic arguments. That leads MMT to underestimate the economic costs and exaggerate the capabilities of money financed fiscal policy. MMT's analytic shortcomings render it poor economics. However, its simplistic printing press economics is proving a popular political polemic, countering the equally simplistic and wrong-headed household economics of neoliberal austerity polemic.

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What's Wrong With Modern Money Theory (MMT): A Critical Primer

Abstract

Recently, there has been a burst of interest in modern money theory (MMT). The essential claim of MMT is sovereign currency issuing governments do not need taxes or bonds to finance government spending and are financially unconstrained. MMT rests on a triad of arguments concerning: (i) the macroeconomics of money financed budget deficits, (ii) the employer of last resort or job guarantee program, and (iii) the history of money. This primer analyzes that triad and shows each element involves suspect economic arguments. That leads MMT to underestimate the economic costs and exaggerate the capabilities of money financed fiscal policy. MMT's analytic shortcomings render it poor economics. However, its simplistic printing press economics is proving a popular political polemic, countering the equally simplistic and wrong-headed household economics of neoliberal austerity polemic.

Keywords: Modern money theory (MMT), budget deficits, job guarantee program.

JEL ref.: E00, E12, E40, E58, E60.

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March 2019

1. Introduction: a brief overview of MMT

Recently, there has been a burst of interest in modern money theory (MMT). MMT is associated with a small over-lapping group of economists at the University of Missouri, Kansas City and the Levy Economics Institute. Leading contributors include Warren Mosler, Stefanie Kelton, and Randall Wray. An early comprehensive statement of MMT is provided in Wray's 1998 book *Understanding Modern Money: The Key to Full Employment and Price Stability*.

The essence of MMT is that sovereign currency issuing governments, such as the US Federal government, are financially unconstrained. That is because government has the power to create money to pay its bills, including its debts. The only constraint on government is the availability of real resources. If the resources are available, government

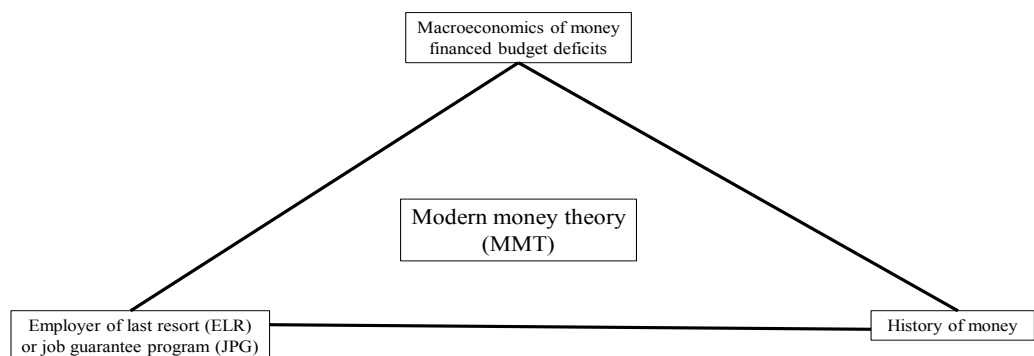
can buy them and pay for them by creating money. If they are not available, creating money to buy goods causes inflation.

According to MMT, a corollary implication of this is taxes are not needed to finance spending. Instead, the role of taxes is to drain money out of the economy after government has spent it, in order to manage aggregate demand and keep it in line with the available supply of resources.

As shown in Figure 1, MMT rests on a triad of arguments concerning:

- (i) the macroeconomics of money financed budget deficits,
- (ii) the employer of last resort or job guarantee program, and
- (iii) the history of money.

Figure 1. Overview of modern money theory (MMT).



The “meat and potatoes” component is the macroeconomics of money financed budget deficits. It describes MMT’s view of how government finance works, why taxes are not needed to finance spending, and why government is financially unconstrained.

The second leg of the triad is the employer of last resort (ELR) or job guarantee program (JPG). That component is the policy component, and it claims to show how the

economics of MMT can be harnessed by policy to deliver non-inflationary full employment.

The third leg of the triad is the history of money, which is invoked to enlist monetary history on MMT's side. The historical claim is that money's origins are chartal. That means modern money came into being because government issued it as a form of IOU token to pay for goods, and those tokens were accepted because they could be used to pay taxes.

This critical primer analyzes and dissects the three legs of the triad, and shows they all involve suspect economic arguments. MMT focuses on government's technical capacity to issue money, which seemingly renders government financially unconstrained. However, issuing money can have costly ramifications measured in terms of government's policy objectives, which can deter government from money financed deficit spending. MMT neglects those ramifications, leading it to underestimate the economic costs and exaggerate the capabilities of money financed fiscal policy. The primer also shows there are fundamental shortcomings in MMT's macroeconomic conception of capitalism.

The bottom line is MMT's analytic shortcomings render it poor economics. That said, its simplistic printing press economics is proving a popular political polemic, countering the equally simplistic and wrong-headed household economics of neoliberal austerity polemic.

2. The macroeconomics of money financed budget deficits¹

The "meat and potatoes" theoretical claim of MMT is that sovereign currency issuing governments are financially unconstrained and do not need taxes or bonds to finance their spending. That is because such governments can always pay by "printing" money. In

¹ Many of the arguments in this section are drawn from Palley (2015a, 2015b).

modern parlance, printing money means electronically creating money via central bank keyboard entries that credit agents with money claims against the central bank.

Additionally, MMT claims government spending is essential as it is the only way to get money into the system, and it is impossible to pay taxes without money in the system.

Given the above, MMT recommends that government should create money and spend until the economy reaches full employment and all workers who want a job are employed. At that stage, government can raise taxes and drain money from the economy to prevent inflation. That policy recommendation is an application of Lerner's principle of functional finance (Lerner, 1943, 1951). A corollary proposition is that the interest rate is discarded as a tool of stabilization policy and parked. The MMT recommendation is to park the interest rate at zero (Wray, 1998, p.87; Forstater and Mosler 2005).

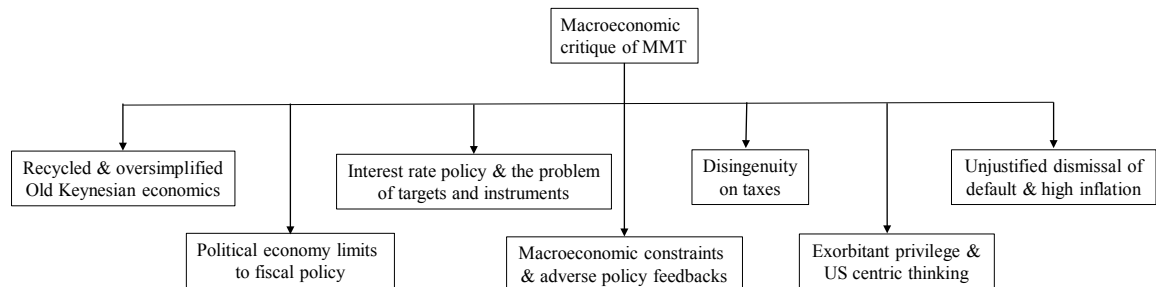
Essentially, MMT recommends that money-financed fiscal policy replace monetary policy for purposes of reaching and sustaining full employment. More specifically, government spending (including spending on guaranteed jobs) should be used to drive the economy to full employment, and thereafter taxes should be adjusted to prevent inflation.² Taxes are not needed to finance spending because money is unbacked fiat (so-called modern money).

Figure 2 provides a taxonomy of the macroeconomic critique of MMT which is the focus of the rest of this section. As can be seen, the critique is extensive and multi-faceted, and it identifies a mix of sins of omission and commission. MMT's simplistic construction

² Recently, MMT proponents have begun walking-back the idea that functional finance is central to MMT. The purpose of the walk-back appears to be to deny that taxes are needed at full employment to neutralize inflationary excess demand caused by excessive government spending. Three points follow. First, it is fundamentally dishonest to deny the long-standing central role of functional finance in MMT's argument (see for instance, Kelton, 1999). Second, removing taxes means MMT has now shifted to the arguing that inflation control should be conducted via rationing, price controls, and other administrative measures (Wray, comments at Eastern Economic Association, March 2019). Third, it illustrates the difficulty of understanding and debating MMT as its proponents constantly change their positions.

of the economy omits critical features that impact the economic cost and effectiveness of money-financed budget deficits. At the same time, its simplistic construction includes features and policy recommendations that are highly problematic.

Figure 2. Taxonomy of the macroeconomic critique of MMT.



2.1 Recycled and oversimplified old Keynesian economics

As regards the first column in Figure 2, the critique of MMT is that it “is a mix of old and new, the old is correct and well understood, while the new is substantially wrong (Palley, 2015b, p.45).” MMT’s main macroeconomic claim to fame rests on its declaration regarding government’s ability to finance spending without recourse to taxation by issuing money. In fact, government’s ability to create money to finance spending has long been widely recognized by all economists, who have also long recognized that ability gives government considerable extra financial and policy space.³ For instance, using a stock –

³ Keynesian economists tend to emphasize how the ability to create money provides fiscal policy space to manage aggregate demand. Classical macroeconomists tend to emphasize how it enables government to collect seignorage via inflation, thereby providing another source of tax revenue that can be an economically efficient way of raising revenue. In this author’s view, both groups are right.

flow consistent ISLM model with a fully specified government budget restraint, Blinder and Solow (1973) show how money financed budget deficits can move an economy to full employment. The logic is simple and compelling. Money financed budget deficits create financial wealth, which increases aggregate demand (AD) via the consumption wealth effect, thereby moving the economy to full employment.⁴

Old Keynesian economics clearly recognized the capacity of government to finance spending without taxes. That said, there are two “new” components to MMT. The first is the claim that government has to spend to inject state money into the system to pay taxes.⁵ The second concerns the macroeconomics of government finance, with MMT claiming that government’s ability to create money means government is financially unconstrained and can costlessly push the economy to full employment.

As regards injecting state money to pay taxes, MMT is strictly wrong with its claim that the public cannot pay taxes until government has first spent. In fact, the central bank is the source of such money. It can inject money into the system by buying existing government bonds, buying private sector assets, or by lending to private banks. Moreover, under the current system, the central bank can increase the money stock by paying interest on existing money balances. That means government spending is not the only way to get state money to pay taxes into the system. Furthermore, a central bank that is targeting interest rates is obliged to provide whatever money the private sector needs, including

⁴ Bond financed deficits are analytically slightly more complicated because the increase in bond supplies can potentially increase interest rates. That was the basis of the “crowding-out” debate of the 1970s, but it turns out even then the economy moves to full employment absent perverse effects. Moreover, it is a non-issue if the central bank targets interest rates, in which case the central bank implicitly monetizes the deficit to prevent the increase in bond supplies from raising interest rates.

⁵ For instance, Wray (1998, p.80) writes “In principle, then, the government first spends fiat money....Once the government has spent, then the fiat money is available to be transferred to the government to meet tax liabilities. As a matter of logic, the public cannot pay fiat money to the government to meet tax liabilities until the government has paid out fiat money to the public.”

money to pay its taxes, to prevent interest rates from rising. That is because the short-term interest rate is the price of state money, and a shortage of state money will place upward pressure on the short-term interest rate.⁶

As regards the macroeconomics of government finance, MMT focuses on accounting and stock-flow relations. There are two points to make. First, those accounting and stock-flow relations have long been understood by Keynesian and neo-Keynesian economists.⁷ Second, and more importantly, MMT's accounting framework has a static "moment in time" character and is bereft of behavioral content. That lack of dynamics and behavioral content leads to fundamentally flawed claims regarding the macroeconomic effects of money financed deficits and government's ability to use deficit finance to secure its policy goals (about which more below).

The point of departure of MMT's macroeconomic analysis is the government budget constraint, and MMT objects to its being called a constraint as if government were a household. However, that is a terminological objection. Moreover, Old Keynesians also recognized it was not a constraint and referred to it as the budget identity or budget restraint. Its significance is it tracks the impact of budget outcomes on stocks of inside money and government debt, and it holds for all governments.⁸

The critical theoretical question is what are the macroeconomic impacts of changes in those stocks and the changes in AD that they finance. MMT sees the effects of increasing government financial obligations as entirely benign, and policymakers can use the

⁶ Michell (2019) has recently made similar observations. However, he claims MMT does not say government spending is needed to pay taxes. That is contradicted by MMT's the written record (see footnote 2 above). The argument that spending is needed to pay taxes has been an important part of MMT's rhetoric claiming that taxes do not finance spending and government is financially unconstrained.

⁷ For instance, those accounting and stock – flow relations were at the heart of the Yale School macroeconomics research program developed by James Tobin in the 1960s (Tobin, 1969, 1982).

⁸ Sovereign governments can issue both money and bonds, whereas non-sovereign governments can only issue bond.

financial space to costlessly boost demand and push the economy to full employment.

There are no negative consequences from increasing government financial obligations; no conflicts with other policy objectives; and no policy implementation problems. In contrast, Old Keynesians had a more complicated view of the economy in which negative consequences, policy conflicts, and policy implementations problems are possible.⁹

As shown below, MMT's macroeconomic policy assertions follow from its oversimplified and incomplete Keynesian analysis. The lack of a dynamic economic model with behavioral content is a glaring professional failure. Unfortunately, instead of addressing that failure, MMT proponents have responded by claiming critics either do not understand it or have misrepresented it.

The difficulty of confronting MMT about those failings is compounded by its practice of walking back its positions and adopting those of its critics without acknowledgment. Examples include replacing the full employment threshold model of inflation (Wray, 1998) with the Keynesian Phillips curve model, and also recognizing that capital controls may be needed to contain international economic forces that can potentially disrupt fiscal policy. Recently, Kelton (2019) has slipped in another long-standing Keynesian argument that stability of the debt-GDP ratio requires that the nominal interest rate be less than the nominal rate of growth ($i < g$). In doing so, she tacitly admits another financial constraint on government and continues the walking back process. On one hand, the walking back process is reasonable: on the other hand, it undermines MMT's claims regarding government being financially unconstrained.

⁹ Indeed, it can reasonably be argued that Old Keynesians were too benign in their assessment of deficit financed policy. At the theoretical level, Old Keynesian models do a poor job of modelling private credit markets, which excludes one of the principal channels whereby adverse effects of budget deficits might show up. Likewise, the Keynesian Phillips curve approach to inflation can be argued to be too benign.

2.2 Political economy limits to fiscal policy

The second column in Figure 2 concerns the political economy failings of MMT. These political economy failings fundamentally challenge the viability of Lerner's (1947, 1951) functional finance approach and suggest an MMT policy regime could even create economic instability.

As noted above, money financed budget deficits drive the economy to full employment by increasing wealth and AD. That makes it critical there be institutional arrangements for closing the deficit once full employment is reached to avoid inflationary excess. However, MMT relies on a highly simplified and implausible political economy in its attempt to address that problem. Thus, it assumes taxes can be abruptly and precisely raised at full employment to contain excess demand, when the reality is taxes are politically contested and difficult to raise. Long ago, Friedman (1961) argued that fiscal policy was impractical for “fine-tuning” stabilization policy owing to inside (decision) and outside (implementation) lags. Those lags mean policy implementation is likely to be poorly timed, so much so that it could amplify the business cycle rather than dampen it.

The Friedman critique of fiscal policy concerns “timing” of policy actions. It can be augmented to include a “public choice” critique based on politicians aversion to raising taxes and cutting spending.¹⁰ That aversion stands to reinforce the problem of fiscal policy timing. Additionally, it stands to impart an inflationary bias and gradually ratchet up government spending as a share of GDP. That is relevant because MMT recommends increased spending to stimulate the economy below full employment, and higher taxes

¹⁰ The aversion to raising taxes is one reason why monetary policy is the preferred instrument of fine-tuning stabilization policy. Just as monetary policy is delegated to central banks to facilitate policy decision making, so too tax policy could be delegated to a board of tax experts, but that would be a profoundly undemocratic turn.

once full employment is reached. Over successive cycles MMT's policy frame is likely to be destabilizing.¹¹ Absent budget discipline, spending and deficits would tend to ratchet upward owing to the political attraction of money financed deficit spending and the political aversion to higher taxes. Yet, MMT reduces budget discipline by arguing the central bank should be under the direct control of the fiscal authority which is encouraged to use money financed deficits.¹²

Another political economy critique (Lavoie, 2014) is that central banks and fiscal authorities are institutionally separated in most economies, but MMT ignores this and treats them as a unified decision maker. The separation is usually justified on public choice grounds that politicians have an inclination to inflationary monetary populism, and separation of fiscal and monetary powers helps prevent that. MMT ignores the separation, invoking an "as if" argument.

Two implications follow. First, as Lavoie (2014) notes, the current system does not support MMT's policy claims as the system is not structured as needed. Second, if the system were changed and structured as required by MMT, financial markets would likely shift to expecting an increased likelihood of inflationary monetary populism owing to MMT's policy frame. That would cause asset prices to fall and interest rates to rise.

The latter critique links to MMT's comprehensive failure to take account of the impact of expectations of policy on economic behaviors and financial markets (about which more below). Expectations about the future impact current private sector decision

¹¹ Those features explain why it is difficult to use fiscal policy to "fine tune" the economy, except for tax and spending programs that operate automatically and counter-cyclically. That makes the ELR/JGP critical for MMT as it is a form of counter-cyclical automatic stabilizer but, unfortunately, it is fraught for other reasons.

¹² Ironically, proponents of MMT appear to be exhibiting exactly this type of ratchet spending effect. Initially, the focus of MMT's spending recommendations was provision of an ELR job guarantee program (Wray, 1998). To that has now been added Medicare for all, expanded Social Security, free college tuition (plus forgiveness of existing college debt), and a Green New Deal (Palley, 2019).

making, which implies the inflationary bias in MMT's fiscal policy assignment will impact present conditions long before inflation accelerates or full employment is reached. Given that, it is easy to envisage how an MMT regime could even generate economic instability. An untimely money financed fiscal stimulus could raise concerns about financial instability or inflation expectations, thereby raising current market interest rates and prompting need for further fiscal stimulus. That we do not see such patterns today may be because policy is not constructed according to MMT's institutional and policy recommendations.¹³

2.3 Interest rate policy and the problem of targets and instruments

The third column in Figure 2 concerns interest rate policy, which MMT advocates should park the nominal interest rate at zero. The above political economy critiques (regarding fine tuning and public choice biases) speak to the difficulty of using fiscal policy to stabilize the business cycle and deliver full employment. For those reasons, monetary policy (i.e. interest rate policy) is widely viewed as the preferred instrument for delivering on those goals, yet MMT discards it (Palley, 2015a, p.17-18).¹⁴

That policy assignment failing is compounded by MMT's specific interest rate policy which may also create an instrument shortage problem. In a static economy, policymakers aim to hit full employment but must also have a balanced budget to prevent an exploding money – output ratio. If fiscal policy is constrained by minimum spending requirements and maximum acceptable tax rates, it may not be possible to achieve both

¹³ Ironically, an MMT policy regime could breathe life into the notion of expansionary austerity. Thus, an MMT regime would tend to raise private sector interest rates. Abandoning the regime would tend to lower them. Note, it is the change of regime that is important rather than specific government spending cuts or tax increases.

¹⁴ Jayadev and Mason (2018) examine the assignment problematic in a dynamic context where output is growing and the budget challenge is redefined as maintaining debt sustainability. Once again, political economy considerations speak to assigning interest rate policy to the output target and fiscal policy to the debt sustainability target.

targets if the interest rate is off the table and set equal to zero (Palley, 2015b, p.53-54).

More generally, in a Tinbergen (1952) world economic policymakers have many targets and tend to be short of instruments. Those targets include full employment, business cycle stabilization, low inflation, government debt sustainability, financial market stability, the exchange rate, and the trade balance. Yet, MMT discards interest rate policy which is an important tool of macroeconomic management. Worse yet, by parking the nominal interest rate at zero, MMT would likely encourage financial instability and exacerbate problems that are already in play from printing money.

2.4 Macroeconomic constraints and adverse policy feedbacks

The fourth column in Figure 2 concerns macroeconomic constraints and adverse policy feedbacks which undermine MMT's claim that government is financially unconstrained. The critique of MMT's claim is though government has the formal technical ability to finance all spending by creating money, that technical ability is a will-o-the-wisp because government is constrained by the reality of potentially high economic costs of doing so. Using the "printing press" to finance spending can create subsequent problems that leave government worse off measured in terms of its objective function.

In the real world, economic policy and policy outcomes are subject to multiple economic concerns and constraints. Those include concerns about government bond and private credit market long term interest rates, concerns about financial market stability, concerns about the balance of payments and the exchange rate, the inflation constraint imposed via the Phillips curve, and policy implementation and policy credibility constraints. Those various considerations impact the economic costs and effectiveness of money financed fiscal policy. However, they are absent in MMT's over-simplified

theoretical framework. In particular, MMT's framework is static and has little to say about how policy affects expectations of the future, and how expectations of the future have important immediate consequences.

2.4.a Financial markets, the complex of interest rates, and asset prices

A government that financial markets believe engages in excessive money issue is likely to face significant financial market blowback. In particular, long term interest rates may rise if financial market participants anticipate risks of future financial turmoil or higher future inflation. Current financial market conditions are affected by expectations about the future, which means the future is always already here and in the present. Consequently, the inflationary bias in MMT's reliance on money financed deficits will creep into present financial market conditions long before full employment.

It is sometimes claimed that government can set the long-term bond interest rate, just as it sets the short-term money market interest rate. The argument is government can buy or sell long-term bonds to set the long-term interest rate in the same way it does for the short-term rate. However, if private agents deem the bond rate too low given inflation expectations created by money financed deficits, the government bond market will shrivel, in the sense of fewer private agents being willing to buy bonds. More importantly, bond market repression does not prevent interest rates rising in private credit markets, and they may even overshoot owing to unfavorable expectations caused by money financed fiscal policy. Consequently, the combination of money financed deficits and bond market repression can disrupt private credit flows, and thereby disrupt economic activity. Furthermore, owing to expectations, those disruption effects can emerge in advance of full employment. However, once again, such effects are absent in MMT because it ignores

expectations and treats private credit markets as irrelevant.

Increases in the money supply can also potentially cause asset price bubbles. That is because some of the money injected into the circular flow of expenditure and income leaks into the financial circuit via the process of saving (Palley, 1998), where it is directed to bidding up asset prices. Bubbles are unstable and subject to abrupt crashes owing to changes in sentiment and expectations. When they crash they can cause major economic disruption, as illustrated by the financial crisis of 2008. Bubbles can also develop independently of full employment. Those features give policymakers good reason to prevent them, which constrains policy. For instance, bond financing of deficits may be preferable to money financing to the extent that bond financing is less likely to promote financial market bubbles. However, bond financing raises its own concerns with adverse interest rate effects and debt sustainability. Such considerations are absent in MMT's analysis because it is silent on asset price formation, the effect of asset prices, and the impact of budget deficits on asset prices.

Interestingly, the effect of budget deficits on credit and asset markets can be expansionary or contractionary. The sign of that effect likely depends on the state of the economy (i.e. near to or far from full employment) and expectations of future outcomes, with expectations being influenced by the nature of the policy regime. This type of effect illustrates the importance of the Lucas (1976) critique for understanding financial market responses to deficit financed fiscal policy, which is also absent from MMT.

2.4.b Exchange rate and trade balance concerns

Money financed budget deficits can also have significant adverse exchange rate and balance of payments effects. Expansionary budget deficits bleed into the trade deficit

via their impact on income and the demand for imports. The deterioration of the trade deficit then tends to depreciate the exchange rate. The exchange rate will also tend to depreciate owing to adjustment of international portfolio positions. Exchange rate depreciation can then cause inflation, which further aggravates the depreciation problem. Additionally, under certain circumstances, exchange rate depreciation can trigger macroeconomic contraction (Krugman and Taylor, 1978).

Keynesian macroeconomics emphasizes international constraints, and they are often summarized in models via the idea of a balance of payments constraint. However, owing to its US-centric focus, MMT largely ignores such problems which are a first-order constraint on economic policy in most countries. Moreover, in the past the US has been subject to such constraints, and it could confront them again in the future.

To the extent MMT discusses international constraints, it dismisses them with the facile assertion that a floating exchange rate resolves them. However, a floating exchange rate is subject to its own adverse financial and inflation complications. The structural balance of payments constraint can also be unresponsive to exchange rate depreciation owing to either induced inflation effects or low import and export elasticities.

2.4.c Inflation and the Phillips curve

Another problem is that inflation does not work as MMT describes. According to MMT, government should run money financed budget deficits until all real resources are employed. At that stage, the economy becomes supply-constrained and policy should step on the budget brake to prevent emergence of inflation. Inflation is therefore presented as a “threshold” problem, but that is not how inflation develops in the real world. Instead, the economy consists of multiple sectors, and some hit the full employment barrier before

others. Consequently, inflation starts bubbling up before there is aggregate full employment, and government lacks the capacity to target its demand injections sector by sector and market by market. Contrary to the claims of Wray (1998, p.viii), it is not easy to have full employment without inflation, and policymakers confront an inescapable inflation - unemployment trade-off.

Replacing the threshold model of inflation with a Phillips curve introduces the familiar policy challenges of trade-offs and inflation expectations. As argued earlier, those expectations are likely to be significantly impacted by adoption of an MMT policy regime. Furthermore, in an economy with a backward bending Phillips curve (Akerlof et al, 2000; Palley, 2003), excessively expansionary money financed deficits could cause inflation expectations to jump to the positively sloped portion of the Phillips trade-off where higher inflation generates higher unemployment.

Interestingly, and not well advertised by proponents of MMT, such concerns prompted Lerner (1977, 1978) to significantly qualify his system of functional finance. In particular, Lerner was concerned about the problem of inflation posed by full employment, which prompted him to develop his Wage-Increase Permit (WIP) plan whereby the government would limit inflation by issuing tradeable permits allowing wage increases.¹⁵ Ironically, MMT proponents tend to be especially dismissive of the problem of inflation.

2.4.d Inflation, interest rates, and the policy mix

Section 2.3 criticized MMT from a targets and instruments perspective, arguing that the recommendation to park the policy nominal interest rate discarded an important policy instrument. Worse yet, parking the nominal interest rate actively creates

¹⁵ The scheme is modelled on the logic of tradeable pollution permits. Just as the aggregate issue of pollution permits limits the amount of permissible pollution, so too the aggregate issue of wage increase permits (WIPs) would limit the amount of aggregate permissible wage inflation.

macroeconomic problems.

Introducing a Phillips curve introduces inflation, and inflation affects the real interest rate. Consequently, MMT's nominal interest rate parking policy implies real rates would fall as the economy moves up the Phillips curve, potentially creating an unstable situation in which higher inflation drives lower real interest rates which in turn drives higher inflation. The converse problem would hold if the economy moved down the Phillips curve and real interest rates would rise with unemployment, potentially causing even higher unemployment.

Recognizing that interest rates matter introduces the familiar fiscal policy – monetary policy mix problem which was a central concern of Old Keynesians, and which is another concern that is entirely neglected by MMT. The greater the emphasis on fiscal looseness, the more the need to raise real interest rates to avoid excessive AD. However, higher interest rates negatively impact investment and growth. Consequently, a government that is concerned about growth and future living standards will be concerned about budget deficits and their implications for interest rates, which in turn means it is financially constrained and concerned about bond market sentiments.

The problematic of the policy mix also connects with another neo-Keynesian concern regarding portfolio crowding out (Tobin and Haliassos, 1990, p.893-894), which is different from monetarist crowding out. The latter concerns the impact of deficit financed fiscal policy on AD and output. The former concerns the impact of deficit financed fiscal policy on wealth composition. In particular, if the demand for wealth is finite and government financial obligations are net wealth, government deficits can crowd-out private capital accumulation by increasing the supply of government wealth that must be

held in private portfolios.

Restoring activist interest rate policy does not save MMT. Indeed, the opposite is true. If policy makers are concerned about interest rates, they need to be concerned about the state of the interest rate spectrum, which the policy rate is part of. That means they need to be concerned about financial market conditions, which implies government is not financially unconstrained. Furthermore, maintaining an interest rate target requires issuing government financial obligations, and government needs to be concerned about the impact of that issuance on AD and financial markets. Again, government is not unconstrained.

2.4.e Summing up

Putting the pieces together, the implication is that sovereign governments' ability to use money financed fiscal policy are limited by market constraints and reactions which impose costs on governments. The bite of those market constraints, market reactions, and induced policy costs varies according to economic conditions and policy regime, and they also vary by country (about which more below). That is not to say sovereign governments have no space to use money financed fiscal policy, but it does say governments are not financially unconstrained, which contradicts MMT.

2.5 Disingenuity about the role and necessity of taxes

The fifth column in Figure 2 concerns MMT's disingenuity about the role and necessity of taxes. That disingenuity has been emphasized by economists of the left (Henwood, 2019; Sawicky, 2019) and is succinctly summarized by Brueing (2019): "The real point of MMT seems to be to deploy misleading rhetoric with the goal of deceiving people about the necessity of taxes in a social democratic system."

That tax deception is facilitated by the MMT's static "moment in time" economic

analysis. At a moment in time, particularly when unemployment is high, it may look as if taxes are unnecessary as resources are available, financial constraints on government are currently non-binding, and government can create money. However, those conditions will change. Taxes become unavoidable as the economy moves along the Phillips curve and inflation increases owing to greater resource demands, and taxes may even be needed earlier if other economic constraints kick in earlier.

MMT's disingenuity about taxes is currently evident in US discussions about an expanded welfare state. MMT proponents are advocating for national health insurance (Medicare for All), expanded retirement income (Social Security), and free university tuition. Their claim is the program spree can be had because of government's ability to print money. The reality is the needed resources would far exceed available economic capacity (Palley, 2019). Consequently, the program spree would generate excess demand and inflation unless paid for by taxes and fees.

Taxes are needed to pay for on-going programs, and money financed deficit spending is at best a temporary free lunch.¹⁶ Moreover, as the proposed programs are intended to have a significant redistributive component, taxes are also needed to accomplish that redistribution. Consequently, taxes are unavoidable for both macroeconomic and microeconomic reasons.

More generally, it is pure semantics whether taxes raise money to finance government spending, or taxes destroy money in order to create the space for reissue of money to finance spending. Taxation and spending occur simultaneously, and taxes are an

¹⁶ As is widely known, in a growing economy there is always some permanent free lunch in that the money stock can grow at the rate of GDP growth plus inflation. As shown by Cagan (1956), inflation is a two edged sword. On one hand, faster inflation increases the free lunch by increasing the inflation tax rate on money holdings. On the other hand, faster inflation reduces the demand for money, thereby reducing the base on which the inflation tax is levied.

intrinsic part of the system and cannot be done away with. Even when the economy is far from the full employment/inflation target, taxes are needed to finance the vast bulk of spending. Money financed budget deficits provide some space at the margin for temporary additional spending, which eventually either has to be cut or be financed by some combination of taxes and borrowing when the economy's constraints bite.¹⁷

2.6 Exorbitant privilege and US centric thinking

The sixth column in Figure 2 concerns exorbitant privilege and the US centric nature of MMT's theorizing. MMT represents itself as a general theory applicable to all sovereign governments. However, the self-evident inability of most sovereign governments to pursue its policy recommendations promotes widespread skepticism among economists from those countries. In response, MMT tends to revert to justifying its claims by appeal to the US (and, to a lesser degree, to economies of other countries whose currencies serve as international reserve currencies). Here too MMT falls apart as the above arguments apply to all governments, albeit in differing degrees, including the US government.

That said, it is easy to misperceive the fiscal capacity of the US government as confirming MMT. That is because the US government superficially appears to have the power to conduct policy as prescribed by MMT. However, that appearance is false. The US conveys a misleading impression because it is the beneficiary of the fact that the world operates on a *de facto* dollar standard. That gives rise to the phenomenon of "exorbitant privilege" (Eichengreen, 2011), whereby the US benefits from issuing dollars to meet the global economy's dollar needs. That makes it look as if the US economy conforms to MMT when, in fact, a completely different phenomenon is at work. Moreover, retaining the

¹⁷ If the economy is away from steady-state and the inflation rate and the money-GDP ratio are both rising, then there will be additional temporary financial space along the traverse to the steady-state.

benefits of exorbitant privilege subjects the US to policy limits and responsibilities.¹⁸

The reality that the US is, in principle, potentially subject to the same type of constraints as other governments is evidenced by the economic history of the 1970s. That era was a period of dollar weakness, and it shows the US can also be subject to biting financial constraints.

2.7 Unjustified dismissal of default and high inflation

Lastly, column seven of Figure 2 refers to critique of MMT's treatment of default and high inflation. MMT proponents are keen on saying a sovereign government which issues its own money can never default on debt denominated in that money, because the government can always print the money needed to service and repay its debt. That claim is widely known. However, sovereign governments often tacitly default via unexpected inflation. The default is tacit in that it cannot be contested in court, but the debtor is still paid back a diminished real amount relative to the original loan and terms of agreement.¹⁹

Proponents of MMT are also dismissive of those who claim that MMT policies could lead to high inflation.²⁰ That dismissiveness is unwarranted. The basic dynamic of high inflation is too much demand chasing too few goods, with excess demand being fueled in significant part by money financed government spending.²¹ Even though the US has not experienced high inflation, it does not mean the economics of high inflation are

¹⁸ The requirements for being a reserve currency issuer are discussed extensively by Epstein (2019). The important implication is that the capacity to reap the benefits of currency issuance depends on special institutional circumstances and is not available to all sovereign currency issuers, in contradiction of MMT.

¹⁹ Alternatively, the tacit default can be interpreted as a tacit tax. Thus, instead of raising income taxes to equalize AD and full employment output, policymakers permit higher inflation which reduces (i.e. taxes) the value of money and bond holdings. That in turn lowers real wealth, thereby moving AD into alignment with output.

²⁰ Hyper-inflations are a slightly different economic animal. They generally happen in crisis conditions where the supply-side of the economy has taken a major hit. In terms of the simple model, full employment output has fallen catastrophically.

²¹ High inflation may also cause the supply-side to contract, thereby aggravating the excess demand problem. That possibility is obviously absent in the simple Keynesian model presented earlier.

irrelevant. The reason for the absence of high inflation is policy has not allowed it to develop. If policymakers were to adopt the policies proposed by MMT proponents without raising taxes, then high inflation in the US economy could easily emerge (especially given 2019 conditions with the unemployment rate less than 4 percent) .

That last observation connects with the earlier observations about the importance of expectations and the lack of attention to expectations in MMT. Economic behaviors and market outcomes depend on expectations, and expectations are influenced by policy rules and policy regimes. MMT proponents argue there is no relation between budget deficits and interest rates or between budget deficits and inflation. Shifting to an MMT fiscal policy regime could quickly generate those relationships via the impact of changed expectations about the future on financial markets. Furthermore, it could also reintroduce foreign exchange market constraints. That possibility further exemplifies the importance of the Lucas (1976) critique for macroeconomic policy analysis.

3. Employer of last resort (ELR) or job guarantee program (JGP)²²

The second leg of MMT's triad of arguments in Figure 1 is the proposal for a JGP, whereby the central government would offer work to any who applied (i.e. act as employer of last resort). In principle, the JGP is completely separable from MMT and can be considered as a stand-alone program on the basis of its own merits. However, for MMT, the JGP is central because it is the way via which policy is supposed to harnesses the power to create money so as to deliver productive non-inflationary full employment.

The employer of last resort JGP can be thought of as an attempt to create an automatic stabilizer in the spirit of Lerner's (1943, 1951) functional finance approach to macroeconomic policy. Lerner's approach has government engage in expansionary

²² Many of the arguments in this section are drawn from Palley (2018b).

“discretionary” fiscal policy until the economy reaches full employment, at which time policymakers are supposed to step on the fiscal policy brakes. The JGP aims to create an automatic stabilizer version of functional finance. That is because, theoretically, there should be no spending on JGP jobs at full employment since all workers are supposedly employed in the private sector. Consequently, spending would automatically taper off.

In theory, the proposal has significant macroeconomic benefits including generating a particular type of full employment, providing another automatic counter-cyclical stabilization mechanism, preserving the skills of unemployed workers by keeping them in jobs, and providing society with the benefits of the output produced by JGP workers.

However, it also has significant downsides that MMT neglects. One downside is the cost of a JGP, which could displace other needed programs (though MMT denies that by assumption because it asserts government is financially unconstrained). A second downside is the potential to displace private sector production if workers prefer JGP jobs. A third downside is JGP jobs can be used to undercut public sector unions and enforce workfare in place of welfare. In effect, a JGP could be used by a neoliberal government as a double-edged sword to undercut public sector employment from above, and undercut worker rights from below. A fourth downside is some JGP jobs might be characterized as “make work”, and that could be used as political fodder by the neoliberal right in its war on government.

The JGP proposal also augments inflation concerns that are already inherent in MMT’s money-financed approach to fiscal policy. The main problem is a JGP sets a real wage floor for the entire economy, thereby implicitly introducing inflation indexation. As

the economy approaches full employment, inflation will tend to rise in accordance with Phillips curve logic. That will trigger a higher nominal JGP wage, and raising the nominal wage floor will tend to spread inflation throughout the economy. If private sector firms fail to match the JGP nominal wage increase, workers will start to drift toward JGP jobs, causing a contraction of private sector output that could even potentially cause stagflation. The JGP is intended to be a non-inflationary automatic stabilizer. Yet closer inspection shows its implicit indexing may also render it an automatic destabilizer.²³

Furthermore, to the extent that a JGP delivers quasi-full employment, it will also tend to exacerbate income distribution conflict inflation which emerges at full employment (Kalecki, 1943). That is because it would remove or diminish the threat of labor pricing itself out of work, thereby potentially increasing wage demands. The problem of full employment conflict inflation is generic, but a JGP would exacerbate it. Indeed, a JGP could trigger such inflation even earlier by emboldening wage demands earlier in the business cycle. There is no easy solution to that problem, which explains Lerner's (1977, 1978) interest in Wage Increase Permits (WIPs). However, MMT proponents are wrong to claim that a JGP is not afflicted by the problem of conflict inflation, and they are doubly wrong to be dismissive of Lerner's later concerns that prompted his WIPs proposal.

These multiple adverse considerations suggest it may be better to use and strengthen existing policy modalities to secure stable full employment. Those modalities include structural measures to improve income distribution (e.g. restoring worker bargaining power and reinvigorating progressive taxation) so as to rebuild the aggregate demand generation process, combined with strengthened and improved counter-cyclical

²³ Note, this income distribution conflict problem is less present in an indexed real minimum wage because there is no guaranteed offer of a job at that real wage. A real minimum wage only affects the terms of labor supply. A real JGP wage affects both labor supply and labor demand.

stabilization policy (e.g. planned counter-cyclical infrastructure spending, counter-cyclical interest rate policy, and counter-cyclical asset and credit market policy based on asset based reserve requirements (Palley, 2010a)).

4. The history of money²⁴

The third leg of MMT's triad of arguments in Figure 1 refers to the history of money. That leg is essentially rhetorical and it is not as important as the arguments about either the macroeconomics of money financed budget deficits or the JGP. It is there to enlist monetary history in support of MMT's macroeconomic argument, which is why monetary history figures so prominently in MMT's narrative (Wray, 1998). The claim is the history of money is "chartal", by which is meant money is a token created and spent by government, that then circulates as money.

Unfortunately, monetary history does not support MMT's claim, and it is especially confounded by the fact that for most of the past two thousand years money has involved gold and silver bullion. Metallic money is the exact opposite of chartal money since government cannot create gold and silver money out of thin air. In a metallic system, government must first tax or borrow to acquire money to spend, which is completely contrary to MMT's fundamental macroeconomic logic.

The US only became fully chartal on August 13, 1971 when President Nixon suspended official convertibility (i.e. the right of foreign governments to convert dollars into gold). That suspension undoubtedly gave US policymakers an important additional degree of policy freedom. However, the other constraints on budget policy imposed by existing debts, existing large federal expenditures, financial markets, and the Phillips curve all carried over the day after suspension.

²⁴ The arguments in this section are drawn from Palley (2018a).

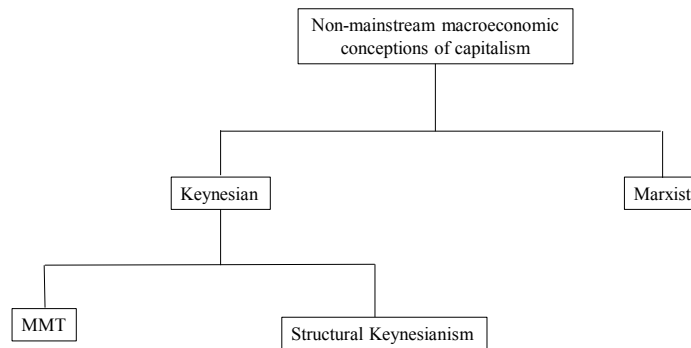
It is a faulty thought experiment to think a new monetary history began on August 13, 1971, whereby the US government was suddenly financially unconstrained and did not need taxes or bonds to finance its spending. Indeed, the financial experience after the suspension of official convertibility confirms the existence of those constraints. Thus, the 1970s weakening of the dollar and higher inflation can be partly attributed to financial markets' response to the end of dollar convertibility, which shows financial markets do respond to public finance developments.

5. Competing macroeconomic conceptions of capitalism

The above arguments focus on the analytic weaknesses of the three legs of the MMT triad. However, behind the scene lies a further deeper critique concerning MMT's macroeconomic conception of capitalism. That critique is illustrated in Figure 3 which describes competing non-mainstream (heterodox) conceptions of capitalism. Those conceptions are divided into Keynesian and Marxist.

Keynesians believe capitalism's tendency to exploitation and instability can be contained and managed by appropriately designed economic institutions and policies (Palley, 2010b). In contrast, Marxists (Foster and McChesney, 2010) believe capitalism is subject to systemic contradictions that can only be resolved by changing the system.

Figure 3. Competing macroeconomic conceptions of capitalism.



Within the Keynesian group, Figure 3 distinguishes between MMT and structural Keynesianism. MMT is firmly Keynesian in conception, and it holds that stable non-inflationary full employment can be achieved and sustained on the basis of money financed deficit spending alone. Money financed deficit spending can pump up aggregate demand to deliver full employment, at which time the deficit can be closed to head-off inflation. All that can be accomplished without induced financial market instability or exchange rate instability.

Noticeably absent in the MMT discourse are the issues of income distribution and class conflict. Consequently, from an MMT perspective there is no economic need to address income distribution, and nor does class conflict pose a problem for government's ability to do as it wishes regarding spending and taxes.

Marxist economists (see Henwood, 2019) have focused on MMT's blithe dismissal of the problematic of taxes. As noted above, if the economy reaches full employment (however defined), taxes become necessary to restrain AD and prevent inflation.

Consequently, the reality is government programs ultimately have to be paid for via taxes, and MMT's arguments are just an evasion of that reality. That makes MMT a new political strategy for finessing the politics of austerity rather than a new economic theory.

If taxes are ultimately necessary to finance government programs, delivering those taxes requires the appropriate politics be in place. Those politics inevitably involve class conflict. Viewed in that light, Marxists argue MMT is deficient on two counts. First, it fails to admit the ultimate necessity of taxes. Second, it fails to recognize that tax outcomes are ultimately shaped by class conflict and depend on power relations, which in turn are substantially determined by the economic fundamentals of capitalist economies.

Marxists, along with structural Keynesians (see Aspromorgous, 2000; Palley 2001, 2018c; Sawyer, 2003; Seccarecia, 2004), are also wary of MMT's employer of last resort job program for a range of reasons. For instance, an overly generous JGP wage package would have non-neutral impacts on private sector employment and output. More importantly, as noted earlier, a JGP that delivers quasi-full employment will likely exacerbate income distribution conflict inflation, a problem identified long ago by Kalecki (1943) as part of his analysis of capitalist economies.

Returning to Figure 3, the structural Keynesian perspective adds arguments regarding economic constraints on fiscal policy. In particular, financial markets discipline governments and deter them from undertaking policies that markets disapprove of. That deterrence operates via the threats of asset market sell-offs, higher private sector interest rates, and credit contraction. Corporations also discipline governments with threats of investment cutbacks and relocation of capital. The disciplinary power of financial markets and corporations is most clearly seen via international comparison of countries. The US,

with its exorbitant privilege, is the least subject to discipline. However, the discipline is omnipresent. Furthermore, the era of neoliberal financialization has entrenched and deepened those disciplines on policy via a process of lock-in of neoliberal economic arrangements (Palley, 2017/18).

A second concern of structural Keynesianism is income distribution, which has two major impacts. First, it impacts the AD generation process and the level of AD, and a deleterious income distribution can produce demand shortage and stagnation. Second, income distribution impacts the political system, which in turn impacts economic policy (both stabilization policy and policies affecting the structure of the economy).

From a structural Keynesian perspective, sustaining stable full employment requires attention to the structure of the economy, particularly income distribution and appropriate regulation of financial markets. Money financed deficit spending is an important policy instrument. However, absent the right structure, attempts to drive the economy to full employment with large money financed deficit spending will be undone over time. Moreover, in some economies such spending may not even be initially feasible because government is financially constrained.

The above differences in analytical perspective are evident in competing interpretations of the financial crisis of 2008. MMT proponents (e.g. Wray, 2009) interpreted the crisis through a purely financial lens, arguing it was explained via Minsky's financial instability hypothesis and the emergence of "money manager capitalism". In contrast, structural Keynesians (e.g. Palley, 2010b) argued there was also an important real economy dimension to the crisis, whereby wage stagnation and rising income inequality combined with financial sector developments to generate a path that led to the crisis. Wage

stagnation and rising inequality undermined the AD generation process. That was covered over by borrowing and asset price inflation which created AD that temporarily compensated for the structural AD shortage. However, that process of increasing debt and asset price inflation eventually exhausted itself, triggering the financial crisis of 2008.

The big implication of the structural Keynesian perspective is failure to attend to the structure of the economy means crises and unemployment will reemerge in due course despite money financed deficits. Furthermore, those deficits can be part of the reemergence story. That reasoning is a core part of the structural Keynesian critique of the policy response to the crisis of 2008. Money financed deficits have helped reflate asset prices and economic activity, but they have not resolved the underlying structural problems. There is a systemic problem that needs redress. Failure to remedy that systemic problem means it will reassert itself and, when it does, the accumulated financial legacy of past budget deficits can potentially have adverse effects. Such considerations are absent in MMT.

6. Conclusion: MMT as political polemic

The above criticisms reflect MMT's over-simplification of the macro economy and exaggeration of policy capabilities. All macroeconomic models are highly simplified representations of reality. MMT implicitly takes the Keynesian macro model and further assumes away the real world challenges of the economy and policymaking. The resulting over-simplified static model makes it look as if government is financially unconstrained and full employment without inflation is an easy reach for policy.

In contrast, Keynesian macroeconomic theory has long recognized the major positive policy significance of the power to issue state money, but the power to issue state money is not the economic panacea claimed by MMT. Structural Keynesian

macroeconomics further elaborates the economic constraints, adding concern with income distribution and financial market disciplinary powers.

Despite MMT's analytical economic deficiencies, it has made huge advances as popular political polemic. MMT's simplistic printing press economics has provided a counter to the neoliberal polemic of fiscal austerity which has dominated political discourse for the past thirty years. Neoliberal polemic claims government has no financial space. It uses the persuasive but false analogy of government being akin to a private household, so that government must tighten its belt if households have to tighten theirs. MMT's emphasis on the financial freedom provided by the power to create money exposes the falsity of the household analogy.²⁵

Unfortunately, like almost all successful political polemics, MMT exaggerates and stretches things. That should be no surprise. Political success requires message simplification, and simplification often involves cutting corners and details. Thus, the ability to create money is transformed into the notion of government being financially unconstrained and not needing taxes or bonds to finance spending.

MMT's political polemic works best in the US, where government is in a special position owing to strong current economic conditions, the current low inflation climate, and the unique position of the dollar as global reserve currency which diminishes the trade deficit and exchange rate problem.²⁶ However, the polemic is largely unpersuasive to economists in Latin America and emerging market economies. Those economies do not

²⁵ Other reasons why the analogy is false are (1) government can raise taxes to pay its bills while households cannot, and (2) government lives forever whereas householders do not, so that government's income stream is far longer.

²⁶ These favorable conditions which currently characterize the US economy have not always been so and may not always be so in future. In the 1970s, the US was subject to higher inflation and dollar weakness, and an MMT policy frame of lower taxes and large money financed deficits would likely have aggravated inflation and dollar weakness. MMT claims to be a general theory and a general theory should be good for all times, not just times which are favorable to its policy inclinations.

have the characteristics of the US, and their governments are visibly policy constrained by financial markets and foreign exchange concerns.

The success of MMT's polemic poses difficulties for progressive economists. On one hand, the polemic is useful for advancing progressive economic policy, so that undermining it would be a step back politically. On the other hand, MMT's economics is over-simplified and exaggerated. That creates a dilemma which often afflicts the middle ground, which gets squeezed by simplistic extremes that have persuasive traction in political discourse. In the fiscal policy debate, the extremes are MMT and austerity. The former argues government is financially unconstrained, while the latter argues government is akin to a household and has little financial space. Both are wrong.

References

- Akerlof, G.A., Dickens, W.T., and Perry, G.L. (2000), “Near-Rational Wage and Price Setting and the Long Run Phillips Curve,” *Brookings Papers on Economic Activity*, 1, 1 - 60.
- Aspromorgous, T. (2000), “Is an Employer-of-Last-Resort Policy Sustainable? A Review Article,” *Review of Political Economy*, 12 (2), 141-155.
- Blinder, A.S. & Solow, R.M. (1973), “Does Fiscal Policy Matter?” *Journal of Public Economics*, 2, 319-337.
- Brueing, M. (2019), “What’s the Point of Modern Money Theory?” People’s Policy Project, February 24, <https://www.peoplespolicyproject.org/2019/02/24/whats-the-point-of-modern-monetary-theory/>
- Cagan, P. (1956), “The Monetary Dynamics of Hyperinflation,” in M. Friedman (ed.), *Studies in the Quantity of Money*, Chicago: Chicago University Press, 25 – 117.
- Eichengreen, B. (2011), *Exorbitant Privilege: The Rise and Fall of the Dollar and the Future of the International Monetary System*, Oxford: Oxford University Press.
- Epstein, G. (2019), “The Institutional, Empirical, and Policy Limits of Modern Money Theory,” Working Paper No. 481, Political Economy Research Institute, University of Massachusetts, Amherst, March.
- Forstater, M. and Mosler, W. (2005), “The Natural Rate of Interest is Zero,” *Journal of Economic Issues*, 39, 535 – 542.
- Foster, J. B. and McChesney, R. W. (2010), “Listen Keynesians, It’s the System,” *Monthly Review*, April, 44 - 56.
- Friedman, M. (1961), “The Lag in Effects of Monetary Policy,” *Journal of Political Economy*, 69 (October), 447 - 466.
- Henwood, D. (2019), “Modern Monetary Theory Isn’t Helping,” *Jacobin*, February 21, <https://www.jacobinmag.com/2019/02/modern-monetary-theory-isnt-helping>
- Jayadev, A. and Mason, J.W. (2018), “Mainstream Macroeconomics and Modern Money Theory: What Really Divides Them?” Institute for New Economic Thinking, September 6. <https://www.ineteconomics.org/perspectives/blog/mainstream-macroeconomics-and-modern-monetary-theory-what-really-divides-them>
- Kalecki, M. (1943), “Political Aspects of Full Employment,” *Political Quarterly*, 1-9

Kelton, S. (1999), "Functional Finance: What, Why, and How?" Working Paper No. 287, Levy Economics Institute of Bard College, Annandale-on-Hudson, NY.

----- (2019), "Modern Money Theory is Not a Recipe for Doom," *Bloomberg*, February 21, <https://www.bloomberg.com/opinion/articles/2019-02-21/modern-monetary-theory-is-not-a-recipe-for-doom>

Krugman, P. and Taylor, L. (1978), "Contractionary Effects of Devaluation," *Journal of International Economics*, 8, 445 – 456.

Lavoie, M. (2014), "The Monetary and Fiscal Nexus of Neo-Chartalism: A Friendly Critique," *Journal of Economic Issues*, 47 (1), 1 -32.

Lerner, A.P. (1943), "Functional Finance and the Federal Debt," *Social Research*, 10, 38 – 51.

----- (1951), *Economics of Employment*, New York: McGraw-Hill.

----- (1977), "From Pre-Keynes to Post-Keynes," *Social Research*, 44 (3), 387 – 415.

----- (1978), "A Wage-Increase Permit Plan to Stop Inflation," *Brookings Papers on Economic Activity*, 2, 491 – 505.

Lucas, R.E. Jr. (1976), "Econometric Policy Evaluation: A Critique," in K. Brunner and A. Meltzer (eds.), *The Phillips Curve and Labor Markets*, Vol. 1, Carnegie-Rochester Conference Series on Public Policy, Amsterdam: North-Holland, p.19-46.

Michell, J. (2019), "Understanding MMT," Critical Macro Finance blog, February 6. <https://criticalfinance.org/2019/02/06/misunderstanding-mmt/>

Palley, T. I. (1998), "The Twin Circuits: Aggregate Demand and the Expenditure Multiplier in a Monetary Economy," *Review of Radical Political Economics*, 30 (September), 95 - 104.

----- (2001), Government as Employer of Last Resort: Can it Work?" *Industrial Relations Research Association*, 53rd Annual Proceedings, 269 - 274.

----- (2003), "The Backward Bending Phillips Curve and the Minimum Unemployment rate of Inflation (MURI): Wage Adjustment with Opportunistic Firms," *The Manchester School of Economic and Social Studies*, 71 (1) (January), 35 – 50.

----- (2010a), "Asset Price Bubbles and Monetary Policy: Why Central Banks Have Been Wrong and What Should Be Done," *Intervention*, 7(1), 91 – 107.

- (2010b), “The Limits of Minsky’s Financial Instability Hypothesis as an Explanation of the Crisis,” *Monthly Review*, April, 28 - 43.
- (2015a), “Money, Fiscal Policy, and Interest Rates: A Critique of Modern Money Theory,” *Review of Political Economy*, 27(1), 1 - 27.
- (2015b), “The Critics of Modern Money Theory (MMT) Are Right,” *Review of Political Economy*, 27(1), 45 - 61.
- (2017/18), “A Theory of Economic Policy Lock-in and Lock-out via Hysteresis: Rethinking Economists’ Approach to Economic Policy,” *Economics: The Open-Access, Open-Assessment E-Journal*, 11, 1 – 18.
- (2018a), “The Evolution of Money Debate: Functionalism versus Chartalism, Schumpeterian Dynamics, Gresham’s Fallacy, and How History Constrains Public Finance,” FMM Working Paper No. 24, Institute for Macroeconomics (IMK), Dusseldorf, Germany, October.
- (2018b), “Government Spending in the Income-Expenditure Model: Spending Composition, the Multiplier, and Job Guarantee Programs,” FMM Working Paper, No. 30, Institute for Macroeconomics (IMK), Dusseldorf, Germany, July.
- (2018c), “Job Guarantee Programs: Careful What You Wish For,” *Social Europe*, September 14,
<https://www.socialeurope.eu/job-guarantee-programs-careful-what-you-wish-for>
- (2019), “Macroeconomics vs. Modern Money Theory: Some Unpleasant Keynesian Arithmetic,” unpublished mimeograph.
- Sawicky, M. (2019), “The Best Way To Argue Against PAYGO,” *In These Times*, January 4.
- Sawyer, M. (2003), “Employer of Last Resort: Could it Deliver Full Employment and Price Stability?,” *Journal of Economic Issues*, 37, 881 – 907.
- Seccarecia, M. (2004), “What Type of Full Employment? A Critical Evaluation of the Government as Employer of Last Resort Policy Proposal,” *Investigacion Economica*, 63, 15 – 43.
- Tobin, J. (1969), “A General Equilibrium Approach to Monetary Theory,” *Journal of Money, Credit and Banking*, 1, 15-29.
- (1982), “Money and Finance in the Macroeconomic Process,” *Journal of Money, Credit and Banking*, 14, 171 - 204.

Haliassos, M. and Tobin, J. (1990), "The Macroeconomics of Government Finance," in Friedman, B.M. and Hahn, F.H. (eds.), *Handbook of Monetary Economics*, Vol. II, North-Holland: Amsterdam, 887- 959.

Tymoigne, E. and Wray, L.R (2015), "Modern Money Theory: A Reply to Palley," *Review of Political Economy*, 27(1), 24 - 44.

Wray, L.R. (1998), *Understanding Modern Money: The Key to Full Employment and Price Stability*, Cheltenham, U.K.: Edward Elgar.

----- (2009), "Money Manager Capitalism and the Global Financial Crisis," in E.Hein, T. Niechoj, and E. Stockhammer (eds.), *Macroeconomic Policies on Shaky Foundations: Whither Mainstream Economics*, Metropolis-Verlag, Marburg, Germany.

Impressum

Publisher: Hans-Böckler-Stiftung, Hans-Böckler-Straße 39, 40476 Düsseldorf, Germany

Contact: fmm@boeckler.de, www.fmm-macro.net

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ISSN: 2512-8655

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