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Eric Tymoigne and Randall Wray's (T&W, 2013) defense of MMT leaves the MMT emperor even more naked than before (excuse the Yogi Berraism). The criticism of MMT is not that it has produced nothing new. The criticism is that MMT is a mix of old and new, the old is correct and well understood, while the new is substantially wrong. Among many failings, T&W fail to provide an explanation of how MMT generates full employment with price stability; lack a credible theory of inflation; and fail to justify the claim that the natural rate of interest is zero. MMT currently has appeal because it is a policy polemic for depressed times. That makes for good politics but, unfortunately, MMT's policy claims are based on unsubstantiated economics.

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Abstract

Eric Tymoigne and Randall Wray's (T&W, 2013) defense of MMT leaves the MMT emperor even more naked than before (excuse the Yogi Berra-ism). The criticism of MMT is not that it has produced nothing new. The criticism is that MMT is a mix of old and new, the old is correct and well understood, while the new is substantially wrong. Among many failings, T&W fail to provide an explanation of how MMT generates full employment with price stability; lack a credible theory of inflation; and fail to justify the claim that the natural rate of interest is zero. MMT currently has appeal because it is a policy polemic for depressed times. That makes for good politics but, unfortunately, MMT's policy claims are based on unsubstantiated economics.

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JEL reference: E00, E02, E10, E12, E24, E40, E58, E62, E63.

1 The critics of MMT are right

Eric Tymoigne and Randall Wray (T&W, 2013) have written a response to modern money theory's (MMT) critics, with a substantial focus on my own critique of MMT (Palley, 2013). Unfortunately, their response is a lengthy (fifty-three page) restatement of MMT that largely fails to address the issues raised by critics.

MMT's central theoretical claims concern (1) the ability of sovereign governments to money finance government spending in a fiat money system, and (2) the role of taxes in supporting the demand for high-powered money. It is bewildering that MMT-ers think they have discovered or even just recovered these ideas.

The critical economic policy question is what does the power to money finance deficit spending mean for government's ability to promote full employment with price stability? This question can only be answered by placing that power within a theoretical model and exploring its implications. For the last seventy years the language of macroeconomics has been small scale simultaneous equation models with dynamic adjustment mechanisms attached to explore issues of stability. Proponents of MMT have a professional obligation to provide such a model to help understand and assess the logic and originality of their claims. Yet, T&W (2013) again fail to produce a model and instead engage in regurgitation. That is why they fail to advance debate. If MMT-ers did produce a model, I am convinced the issues would become transparent, but readers would also see there is "no there there".[1]

T&W (2013, p.3-4) also misrepresent their critics. The charge is not that MMT has produced nothing new. The charge is that MMT is a mix of old and new, the old is correct and well understood, while the new is substantially wrong. The sleight of hand is to claim the old as MMT's new contribution. As part of that deception, T&W seek to inoculate themselves with boilerplate language to the effect that MMT has always said it rides on the shoulders of giants and never claimed its thoughts were original (T&W, 2013, p.3-4).

A final introductory observation is that it is important to distinguish among MMT's critics. MMT has been criticized by Keynesians like myself (Palley, 2001, 2013),

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[1] Proponents of MMT tend to be against mathematical modeling. One reason is that economics has become over-mathematical, pushing it to the frontiers of nonsense. I agree with this sentiment, but refusal to model is not the right response. Indeed, by promoting confusion, refusal to model plays into the hands of those who model to excess. The right answer is to use good judgment so that modeling clarifies but resists mathematical excess. A second reason for MMT opposition to modeling is that proponents do not believe in models. That reason is entirely specious as textual arguments also embed models. However, the assumptions, logic, and implications tend to be less transparent.

Perry Mehrling (2000), Tony Aspromorgous (2000, 2011), Louis-Philippe Rochon and Matias Vernengo (2003), Marc Lavoie (2011), Brett Fiebiger (2012a, 22012b), Malcolm Sawyer (2003) and Mario Seccarecia (2004). It has also been criticized by orthodox mainstream economists like Scott Sumner (2011). I do not agree with the orthodox mainstream criticisms I have seen, but that does not make MMT right. It is still subject to the valid Keynesian criticisms that I and others have elaborated.

2. MMT assumes away the problem of fiscal - monetary policy conflict

Let me begin with the less important issues, which is where T&W's response also begins. A first issue concerns the institutional arrangements between the fiscal and monetary authorities and whether they are a consolidated entity or independent entities. MMT operates on the basis that they are a consolidated entity. T&W (2013, p.12-15) justify that assumption on the grounds that the institutional form is a political choice, and MMT aims to show what is feasible if the appropriate institutional choice is made.

That is a legitimate argument. In my view, the monetary – fiscal institutional form is not the central issue in the critique of MMT. Moreover, old Keynesian analysis of stabilization policy (for instance see Tobin and Haliassos (1990) and references therein) also used the consolidated entity assumption. Optimal policy was analyzed under the assumption of a benevolent public policy maker who controlled both monetary and fiscal policy so that they were coordinated. That said, it must be noted that if the consolidation assumption does not hold the claims of MMT are immediately voided.[2]

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[2] The debate over consolidation also raises a policy question. There is an orthodox macroeconomic literature (see Fischer, 1995) that claims independent central banks deliver superior macroeconomic performance. This is a literature I am not convinced by, but it does raise a yellow flag. MMT argues for a consolidated central bank that puts its ability to money finance spending at the disposal of a fiscal authority. If it turns out that such an arrangement does not deliver best outcomes owing to political economy problems in the conduct of fiscal policy, it is a problem for MMT because those political

2. MMT's obsession with the origins of money is a red herring

A second less important issue raised by T&W (2013, p.9-11) concerns the origins of money. The origins question is a red herring in the debate regarding the power of sovereign governments to achieve full employment with price stability in the current monetary system. That said, T&W's claims about money's origins warrant a reply, but rather than distract from the important arguments, the reply is relegated to the appendix.

3. The government budget restraint: MMT reinvents the wheel, part I

I now turn to the "meat and potatoes" of MMT, the central claim of which is that sovereign issuers of money are not constrained financially in the normal sense:

> "If a government can create at will the money that the public willingly offers goods and services (especially labor services, for our purposes here) to obtain, then the government's spending is never constrained by narrow 'financing' decisions (Wray, 1998, p.137)."

This claim is reiterated in the opening sentence of their response and described as one of MMT's "main contributions" (T&W, 2013, p.2). However, it has been known for decades by all macroeconomists worth their salt and it is fully captured in the consolidated government budget restraint relations defined as follows:

(1) $D = T - G$ $\qquad\qquad G \geq 0$

(2) $T = tY - R - W$ $\qquad 0 < t < 1$

(3) $D = H_D + B_D$

(4) $H = H_{-1} - H_D + Z$

D = budget deficit ($D < 0$) or surplus ($D > 0$), G = government spending, T = net tax revenues, t = income tax rate, Y = nominal income, R = interest and principal payments on privately held government debt, W = transfer payments, H_D = money financed

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problems are part of the real world. They are not going away and must figure in policy analysis that claims to be serious.

component of deficit or surplus, B_D = bond financed component, H = high-powered

money supply, H_{-1} = last period's high powered money supply, and Z = central bank open

market operations or payment of interest on reserves. All variables are in nominal terms.[3]

Equation (1) defines the budget outcome; equation (2) is the tax revenue function;

equation (3) determines the budget financing mix; and equation (4) determines the

evolution of the high-powered money supply. The change of sign between surplus and

deficit can be confusing. Money financed deficits ($H_D < 0$) increase the money supply:

surpluses ($H_D > 0$) reduce the money supply unless the government fully uses the surplus

to redeem bonds. Combining equations then yields

(5) $D = tY - R - W - G = H_D + B_D$

Equations (1) – (5) constitute the old Keynesian representation of the government

– central bank sector and there are several features to note. First, this representation

corresponds to a consolidated fiscal-monetary arrangement. Second, it is easy to show

that government can money finance any amount of money spending it wants. For

instance, setting $t = B_D = Z = 0$ yields

(6.a) $D = -R - W - G = H_D < 0$

(6.b) $\Delta H = H - H_{-1} = -H_D > 0$

Third, it is easy to show that budget surpluses destroy high-powered money

balances and lower the privately held high-powered money supply. Thus, setting $G = R = W = B_D = Z = 0$ yields

(7.a) $D = tY = H_D > 0$

(7.b) $\Delta H = H - H_{-1} = -H_D < 0$

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[3] Variables can be expressed in real terms by deflating with the price level.

Fourth, government spending and taxation occur simultaneously so creation of money via money financed deficits and destruction of money via taxation also occur simultaneously. It is a pointless exercise to try and determine which comes first. All that matters is that spending, taxes, new money issue, and the monetary operations of the central bank be properly accounted for in tracking the evolution of the high-powered money supply.

Fifth, it is easy to see that a sovereign government need never default on debt issued in its own currency. Setting $t = G = W = B_D = Z = 0$ yields

(8.a) $D = -R = H_D < 0$

(8.b) $\Delta H = H - H_{-1} = -H_D > 0$

A sovereign government can always pay debt obligations denominated in its own currency by issuing money.

Sixth, a government that gives up its power to issue money is reduced to the status of a province, and the budget restraint becomes a budget constraint similar to that of a household. This can be seen by requiring $H_D = 0$ so that

(9) $D = T - G = B_D$

Budget deficits must now be bond financed so that government is dependent on the bond market for its ability to finance deficits. Consequently, governments become potentially hostage to the bond market regarding availability and terms of bond financing. This is the situation with euro zone countries today. I explicitly made that point in a paper (Palley, 1997) titled "European monetary union; an Old Keynesian guide to the issues" published before the creation of the euro:

"However, it is also the case that governments will only be able to pursue such policies through fiscal policy since they will have surrendered control over monetary policy on

joining the EMU… (F)inancial capital may still be able to discipline governments through the bond market. Thus, if financial capital dislikes the stance of national fiscal policy there could be a sell-off of government bonds and a shift into bonds of other countries. This would drive up the cost of government borrowing, thereby putting a break on fiscal policy (Palley, 1997, p. 155-156)."

Two conclusions follow from the above analysis. First, the budget restraint - high-powered money supply relation fully captures the core monetary arguments of MMT. Second, since this relation is well understood and was fully incorporated in old Keynesian stock-flow consistent ISLM models (Tobin, 1982), it shows MMT adds nothing new to monetary theory. As claimed at the outset of this paper, the part of MMT that is correct is old and known. What is shocking is T&W (2013) and other MMT-ers are completely unaware of the fact that MMT's major propositions are fully contained in the budget restraint – money supply relation. Mention of the budget restraint and its relation to MMT is absent in Wray's 1998 book. T&W (2013, footnote 5, p.6) make a brief disparaging mention of the relation, but they brush aside the fact that it fully encapsulates MMT's claims regarding the special financial standing of government.

For the last fifteen years, Professor Wray and his MMT colleagues have been spilling ink with lengthy T-account expositions of the transactions underlying the government budget restraint that aim to show the special financial circumstances of sovereign governments. All they have done is unknowingly rediscover the consolidated government budget restraint in a process tantamount to reinventing the wheel. Now, T&W have shifted to drawing complicated "spaghetti" flow diagrams of transactions between government, the central bank, and the private sector (see T&W, 2013, Figures 4, 6, 7, and 8). Those diagrams regurgitate what is known and only obfuscate the issues by

unnecessarily introducing tangential and separable complexities related to transactions within the private sector.

Lastly, the budget deficit – high-powered money supply connection is one side of MMT: the connection between taxes and the demand for high-powered money is the other. This is also fully understood by old Keynesians. To avoid any misunderstanding let me again quote Tobin:

> "By its willingness to accept a designated asset in settlement of taxes and other obligations, the government makes that asset acceptable to any who have such obligations, and in turn to others who have obligations to them, and so on (Tobin & Golub, 1998, p.27)."

In sum, MMT makes three claims: Keynesian stock-flow consistent ISLM models are fundamentally flawed in their representation of the financial constraints on government; Keynesians did not understand the significance of taxes for money; and MMT provides new fundamental insights about these issues. All three claims are false. Old Keynesians fully recognized that government can finance itself by issuing money, budget surpluses reduce private sector holdings of high-powered money, and the demand for high-powered money is partly driven by the obligation to pay taxes.

4. Budget deficits and private sector saving: MMT reinvents the wheel, part II

Another claimed contribution of MMT is that it recognizes the proper accounting relation between government and the private sector, as if old Keynesian models did not (T&W, 2013, p.15-18). This MMT implication is false.

The national income accounting identity for a closed economy is given by

(10) $Y \equiv C + I + G \equiv C + S + T$

C = private sector consumption spending, I = private sector investment spending, S = private sector saving. Simplifying and rearranging yields

(11) I - S = T - G

This can be restated as

(12) I - S = D

This fundamental relation is built into the genetic code of every old Keynesian model, including the simplest income-expenditure model.[4] The basic story is that if the private sector in aggregate wants to save more than it invests, government must run a deficit. Conversely, if it wants to invest more than it saves, government must run a surplus.[5]

Financial flows can be added to the sector balance relations by incorporating budget deficit financing given by equation (3), which yields

(13) I - S = H_D + B_D

Equation (13) states if the private sector in aggregate saves more than it invests it must acquire a combination of high-powered money and government bonds: if it invests more than it saves it must disburse a combination of high-powered money and government bonds. These relations are present in every stock-flow consistent ISLM model, showing there is nothing new in this aspect of MMT which is another exercise in reinventing the wheel. Moreover, as can be seen from reading T&W (2013), the old Keynesian

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[4] There is an equilibrium and disequilibrium statement of this relation. Total investment consists of planned investment in equipment and structures (I_K), planned equipment in inventory (I_P), and unplanned inventory (I_U) so that I = I_K + I_P + I_U. Substituting in equation (12) yields D = S - I_K - I_P - I_U. In equilibrium, plans are met so that I_U = 0 and D = S - I_K - I_P. In disequilibrium plans are not met so that either I_U > 0 due to an unexpected demand shortfall or I_U < 0 due to an unexpected increase in demand. These disequilibrium effects induce firms to increase output if I_U < 0, and decrease output if I_U > 0.

[5] MMT-ers credit Wynne Godley's (Godley, 1999) sector balances approach with identifying this relation. In fact, the eminent old Keynesian economist James Tobin (1963) explicitly identified and analyzed this relation fifty years ago and decades of Yale students learned about it. It is also noteworthy that Godley (Godley and Lavoie, 2007) explicitly pay tribute to the stock-flow consistent ISLM model of Tobin (1982), whereas MMT-ers are vituperative about the ISLM model.

exposition is far clearer: all that is needed is the national income identities, the budget deficit equation, and the budget deficit financing equation.[6]

5. MMT has no model, is blind to the targets and instrument problem, and is policy naïve

The previous two sections have focused on MMT's claims regarding major new theoretical contributions and showed those claims are old and well understood. It is now time to analyze MMT's claims about having "full employment without causing inflation (Wray, 1998, p.viii)", where full employment is defined as a situation in which an increase in aggregate demand does not increase employment. This claim is the new part of MMT and is what makes it politically attractive, but it is also the part that is theoretically unsubstantiated.

I confess I was stunned by the claim (T&W, 2013, p.44) that MMT rejects counter-cyclical fiscal policy – what T&W call "fine-tuning". I had thought counter-cyclical fiscal policy was an essential element of the MMT argument, and that the recent recession and current stagnation called for large-scale money financed fiscal expenditures. Apparently, that is not the case.

As noted earlier, the budget restraint is an accounting relation. Whether government can use the financial powers implicit in the budget restraint to deliver non-inflationary full employment requires a theory. MMT fails to provide that theory and T&W's response does nothing to remedy that failure. Instead, they continue to assert the outcome rather than providing a coherent model that demonstrates it.

Given this lack of a model, I laid out a small macroeconomic framework in my critique of MMT (Palley, 2013) that I thought (and still think) reflects MMT's thinking. I

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[6] Similar relations can be derived for an open economy by using the national income accounting identity for an open economy and adding a trade balance financing equation.

constructed it as accurately and favorably as I could, with no intent of setting up a straw man.[7]

For a static economy, the MMT model should deliver full employment with a balanced budget and explain how it gets there. The best MMT story I could construct is the following. Starting from below full employment, government uses money financed deficit spending to cover employer of last resort (ELR) and other spending to increase aggregate demand (AD). A classical Pigou effect then moves the economy to full employment, and a balanced budget obtains if taxes are appropriately calibrated.[8]

T&W dismiss my model representation without offering an alternative. Moreover, they claim there is no need to have a balanced budget at full employment (T&W, 2013, p.18; T&W, 2014, p.13-15). I think they are wrong. It is true an economy can reach full employment with either a budget deficit or surplus, depending on the state of the private sector's investment - saving balance. However, in a static economy such as I explicitly modeled, persistent money financed budget deficits or surpluses would lead to inflation or deflation, absent very special and implausible conditions about money demand.[9]

In my initial critique (Palley, 2013) I also pointed out that there is an instrument assignment problem and that it is critical for stability that spending is adjusted to balance aggregate demand and output, while taxes are used to ensure budget balance. I believe the problem is actually worse. Policy needs to ensure that aggregate demand (E) is equal to full employment output ($E = y^*$) and that the budget is balanced ($D = G - T$). Now

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[7] Aspromorgous (2000) is another critic who has produced a Keynesian model-based analysis and finds MMT wanting.
[8] This, by the way is part of the old Keynesian ISLM story (Blinder and Solow, 1973), again showing how little there is to MMT. However, old Keynesians recognized there were additional constraints on policy which limited policy makers' ability to attain non-inflationary full employment.
[9] In a growing economy there can be persistent budget deficits, but to avoid inflation the high-powered money stock must grow at the rate of growth.

suppose there is a minimum level of government spending on public goods (G^{MIN}) needed to keep the economy functioning, there is a maximum tax rate the public is willing to bear (t^{MAX}), and that the policy interest rate is set equal to zero in accordance with MMT's policy recommendation ($i_p = 0$). The economy is described as follows:

(14) $y = E(y, G, T, i_p)$ $E_y > 0, E_G > 0, E_T < 0, E_{ip} < 0$

(15) $D = T - G$

(16) $G \geq G^{MIN}$

(17) $T = ty$ $0 < t \leq t^{MAX}$

(18) $i_p = 0$

There are again two targets ($y = y^*$, $D = 0$) and two instruments (G, t) but there may be no solution given the constraints on G and t. Moreover, this targets and instruments problem arises before issues of inflation, the trade balance, income distribution, and financial stability have been added to the mix.

Furthermore, in addition to the targets and instruments problem, there is the political economy problem of adjusting G and t to hit the targets. Adjusting policy instruments, especially fiscal instruments, is politically contentious and subject to unpredictable inside and outside lags (Friedman, 1961). T&W (2013, p.44) simply brush off all these problems with the blithe statement that MMT is "very different from the Bastard/IS-LM Keynesian approach that focuses on fine-tuning." Until proponents of MMT produce a coherent model their claims will lack credibility, and if they produce a model I predict it will look a lot like the framework I have outlined.

6. MMT has no theory of inflation

Not only does MMT lack a macroeconomic model, it also lacks a plausible theory of inflation. Based on my reading of MMT, I thought it assumed a discrete deflation – inflation regime switching model centered on full employment:

> "The key, then, is to ensure that government spending is at just the right level so that neither inflationary nor deflationary forces are induced (Wray, 1998, p.ix)."

However, T&W (2013) reject that formulation and they also reject the logic of the Phillips curve:

> "MMT rejects the traditional trade-off between inflation and unemployment (T&W, 2013, p.3; 2014, p.4)."

That rejection places them in direct contradiction of Mitchell (2013), who is another leading contributor to MMT and a strong advocate of the traditional Phillips curve.

I suspect if this contradiction is resolved, T&W will find themselves adopting traditional Phillips curve theory, which is the position of MMT's critics. However, adopting Phillips curve theory does not rescue MMT's claims about delivering full employment with price stability because lower equilibrium unemployment is always associated with higher equilibrium inflation according to Phillips curve theory.

One explanation of the Phillips curve is that it is due to variation in the distribution of bottlenecks in a multi-sector economy (Tobin, 1972; Palley, 1994, 2003, 2012). T&W (2013, p.9) mention bottleneck inflation but they are disparaging of the Phillips curve: "We are surprised that Palley still promotes a rather orthodox version of the Phillips curve trade-off (T&W, 2013, p.45)." They appear unaware of the Keynesian literature on multi-sector inflation theory, the fact that a multi-sector economy can generate a Phillips curve, and that the resulting Phillips curve is policy exploitable.

Another MMT claim is that an employer of last resort (ELR) program helps diminish the bottleneck inflation problem:

"In this way, the buffer stock program complements "market processes" to reduce, but not necessarily eliminate inflationary pressures (Wray, 2000, p.16-17)."

However, this assertion is not supported by an economic explanation of how ELR neutralizes the inflationary consequences of aggregate demand shocks and sector shifts of demand in a multi-sector economy. In my view, ELR would marginally aggravate the problem since wage spending by ELR workers would generate multiplier effects that ripple across sectors, including those at full employment.

Lastly, MMT gives no indication of how ELR reduces conflict inflation caused by inconsistent claims on income (Myatt, 1983; Dalziel, 1990; Palley, 1996, chapter 11). Indeed, here too it likely aggravates inflation by giving workers greater wage bargaining power that increases the extent of income claim inconsistency.

The above arguments show that MMT's claim of achieving full employment without inflation lacks credibility. That is because MMT lacks a credible theory of inflation that supports such a claim. Adopting Keynesian multi-sector Phillips curve theory can provide a theory, but it also forces recognition of the potential conflict between full employment and inflation.

7. Open economy: MMT reverses its position

It is time now to introduce open economy issues. Wray's (1998) benchmark statement of MMT made almost no mention of open economy concerns. In light of critics' comments about the exchange rate implications of money financed deficits, MMT-ers turned to emphasizing the role of flexible exchange rates as an insulating and stabilizing device (Mosler and Forstater, 2005).

What is bizarre about this defensive invocation of flexible exchange rates is that it does not work and it also puts MMT in the company of Milton Friedman (1953), who was the ultimate booster of flexible exchange rates. Friedman argued that exchange rate speculation was stabilizing because profit-seeking speculators would close the gap between the exchange rate warranted by fundamentals and the actual exchange rate. They would sell when the exchange rate was over-valued relative to fundamentals, and buy when it was below. Such arguments run counter to the destabilizing speculation logic of Minsky's (1992) financial instability hypothesis, with which MMT claims close affinity.

A major reason flexible exchange rates do not insulate economies comes from structuralist macroeconomics literature (Sunkel, 1958; Olivera, 1964), principally associated with Latin America. Exchange rate depreciation triggered by money financed deficits can cause significant disruptive imported-inflation effects in both developing and open-developed economies. Exchange rate depreciation can also be contractionary (Krugman and Taylor, 1978).

A third argument concerns the implications of covered interest parity (CIP), which is an established empirical regularity in international economics. CIP states there is no room for systematic arbitrage of cross-country interest rates. The relation is given by

(19) $i_\$ = i_f + [F - S]/S$

$i_\$$ = short-term domestic (US) interest rate, i_f = short-term foreign (euro) interest rate, F = current forward exchange rate (dollar/euro), S = current spot exchange (dollar/euro). Equation (19) says anticipated exchange rate adjusted returns should be equal across countries.

MMT recommends setting $i_\$ = 0$. If $i_f > 0$, the CIP relation implies $F - S < 0$. That implies steady nominal appreciation of the dollar to compensate for lack of interest income on short-term dollar holdings. How that would be brought about is difficult to understand. However, the combination of money financed deficits, positive inflation caused by full-employment, and steady nominal appreciation of the dollar implied by the CIP relation, is suggestive of contradictions that would generate financial instability and real economic disruption.

In response to these open economy concerns raised by critics, T&W (2013, p.43) now advocate some form of exchange rate pegging:

> "Open economies are more sensitive to fluctuations in exchange rates and may desire to curb exchange-rate fluctuations by pegging a currency."

That is sensible, but it is also an adoption of the critics' position. More importantly, the camel's nose of "hard financial constraints" is now inside the tent. Pegging limits the freedom of monetary policy, requires foreign exchange reserves, and is also subject to speculative attack which further constrains policy. Pegging therefore undermines MMT's main claim about sovereign money freeing governments from standard market disciplines and financial constraints, enabling governments to achieve non-inflationary full employment if they want.

8. MMT interest rate policy is un-Keynesian and promotes financial instability

The next issue to be addressed is interest rate policy and financial instability. MMT asserts that the natural rate of interest is zero (Mosler and Forstater, 2005) and the short-term policy interest rate should be set at zero (Wray, 2007). Such analysis is fundamentally un-Keynesian and the policy recommendation is likely to promote major financial instability.

With regard to the former, a core insight of Keynes' (1936) *General Theory* was that financial markets get interest rates wrong because of fluctuations in liquidity preference. MMT now says park the policy interest rate at zero regardless of economic conditions, which means government will get interest rates wrong by mispricing the interest rate on high-powered money.

As regards financial instability, inflation at high or full private sector employment will be positive. Under such conditions, setting the short-term nominal policy rate at zero becomes a recipe for encouraging financial speculation and asset price inflation driven by debt, which ends in financial crisis. Aspromourgos (2011) makes similar observations in connection with Keynes' policy recommendation of ultra-low interest rates. Lastly, in an international economic context, interest rate policy is subject to market discipline expressed through the CIP relation. The interest rate is also an important policy instrument for addressing instability that can arise from financial capital flows and flight.

In sum, a "park it" zero interest rate policy guarantees an incorrect setting of interest rates, promotes financial instability, and throws away a vital policy instrument in a world where policy makers already confront the challenge of having more targets than instruments.

T&W (2013, p.49) argue that financial regulation promoting Minsky "hedge financing" will head-off the problem of financial instability – at least, as much as is possible. In supporting financial regulation, T&W join MMT's critics who also argue for regulation promoting financial stability. For over a decade, and long before the financial crisis of 2008, I have argued for asset based reserve requirements (Palley, 2000, 2003b, 2004) as a constructive framework for stabilizing financial markets and dealing with asset

price inflation. However, while MMT recognizes the need for financial regulation, it fails to see that its interest rate policy recommendations promote financial instability.[10]

9. ELR: over-hyped macroeconomic claims and politically questionable

The final issue is the ELR program. In my initial critique (Palley, 2013) I described the "hiring off the bottom" microeconomics of ELR as sound. However, T&W (2013, p.46) now undermine that microeconomics by suggesting ELR jobs be paid "the current legal minimum wage". That puts ELR jobs in competition with private sector employment so that the ELR scheme is no longer a "hiring off the bottom" system. Consequently, it could have adverse private sector employment, output supply, and price implications.[11]

As regards macroeconomics, the question is does ELR deliver non-inflationary full employment? The answer is "No". It has already been shown MMT lacks a plausible theory of inflation that explains why inflation would be zero at full employment. It is also the case that ELR does not produce true full employment.

An ELR program would offer ELR jobs paying an ELR wage to unemployed workers. Existing unemployment insurance (UI) programs, paying an implicit UI wage, would continue being available for unemployed workers who did not want an ELR job. The wage structure would be as follows:

(20) Minimum wage $\geq$ ELR wage $\geq$ UI wage

ELR would directly reduce unemployment by reclassifying those unemployed workers shifting from UI to ELR jobs. Additionally, assuming unemployed workers spend all their income, it would also provide a small AD increase given by:

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[10] It is a pity T&W did not comment on asset based reserve requirements as it is a policy MMT-ers should endorse.

[11] If ELR jobs have superior characteristics to minimum wage private sector jobs, they would require a lower wage to compensate for these positive differences. Conversely, if ELR jobs have inferior characteristics, the compensating wage differential could theoretically be positive.

(21) $\Delta AD = [ELR\ wage - UI\ wage] \times ELR\ job\ takers$

That small increase in AD would increase employment but not produce Keynesian full employment. The Keynesian definition is when an increase in private sector demand produces no increase in private sector employment and output. Albeit unwittingly, ELR implicitly admits it fails to produce full employment with its "hiring off the bottom" logic that says workers will quit ELR jobs when better paying private sector jobs become available in response to increased AD in the private sector. In sum, ELR reclassifies unemployed workers by shifting them from UI to ELR jobs but that is not true full employment.

As regards political economy, ELR is a judgment call. My view is there are serious political economy downsides to the ELR proposal because of dangers that an ELR scheme would be used to undermine public sector wages and public sector unions (Palley, 2001, 2013; Sawyer, 2003; Seccarecia, 2004). It would also likely be used to undermine the UI system and force unemployed workers into ELR jobs. Furthermore, if government has the political support to establish an ELR scheme, it would also likely have the political support to implement a robust social safety net plus counter-cyclical monetary and fiscal policy targeting full employment. That is the route I prefer as it avoids the political economy problems that bedevil ELR.

10. Conclusion: MMT is a policy polemic for depressed times

MMT claims to provide new insights into monetary theory and macroeconomic policy possibilities. As regards monetary theory, there is nothing new. The ability of sovereign issuers of money to finance deficits by printing money, the role of taxes in supporting money demand, and the difference between the government budget restraint and the

household budget constraint were all well understood by old Keynesians. The notion that MMT has discovered or even just recovered these features is a fiction.

As regards macroeconomic policy, MMT's claims are unsubstantiated. The claim that government can easily obtain full employment with price stability (Wray, 1998, p.viii) does not stand up to scrutiny, and nor does the claim about the optimality of "parking" the policy interest rate at zero.

Given this, why is MMT attracting more attention? The answer is that it is a policy polemic for depressed times. A policy polemic that promises full employment and price stability at little cost will always garner some attention owing to the phenomenon of the demand for difference: controversial ideas garner attention. However, such a policy polemic will be especially attractive in depressed times. Furthermore, depressed times actually make MMT's claims more plausible. That is because the inflation constraint effectively vanishes and depressed animal spirits suppress immediate financial sector stability concerns.

Finally, it is also noteworthy that MMT appears more plausible to US audiences than to other country audiences. All countries face inflation and financial sector stability constraints, but the US is essentially free of a foreign exchange market constraint. However, that constraint is very visible in many other countries, which explains their greater intuitive skepticism about MMT.

Appendix: MMT's misunderstanding of the origins of money

No one knows the origins of money and nor is that the issue in the critique of MMT. Instead, as regards money, the question is what constitutes money in a modern economy and what are the implications? In my view, that question is best answered by viewing money and monetary arrangements as the product of interplay between state and market forces.

Contrary to T&W's claims, the market can spontaneously create money. Today, we are seeing the emergence of Bitcoin which has absolutely nothing to do with the state and cannot be used to pay taxes, but is acquiring moneyness. I do not know whether Bitcoin is for the long-term or is just a "tulip mania" bubble, but it has moneyness today. It is also noteworthy that governments are trying to suppress Bitcoin.

Another example of spontaneous money is dollarization. The sovereign government of Argentina does not issue dollars and nor does it accept them as tax payments, yet they have at times circulated spontaneously as means of payment. Of course, this is an instance where a country adopts money that is accepted as tax payment elsewhere.

A more trivial example of spontaneous money is the use of candy money when there are shortages of coin. I saw this in Italy in the 1970s and in Argentina in the 2000s. Another example of market generated money is the use of scrip in mining communities, and there are also the 18th and 19th century episodes of free banking in Scotland and the U.S. when private banks issued notes that were redeemable for commodity money (gold).

Selgin and White (1987) provide an excellent history of the role of competitive markets in endogenously shaping the evolution of money. However, I disagree with their characterization of free banking systems which they believe to be stable. Instead, theory suggests they would be vulnerable to "sunspot" runs, and history confirms their instability. I have also focused on competitive market forces in my discussion of the implications of e-money, which reduces demand for government money but never completely eliminates it because some is needed to pay taxes (Palley, 1999). Clearly, the market can produce money. However, it will be unable to produce money that can be used to pay taxes if governments insist on being paid in money they have created.

The above examples are not intended to address the question of the historical origins of money, though they are suggestive of forces that may have produced money. Instead, they illustrate the market's capacity to create money. That is the critical issue that MMT contests.

There are two aspects to the market's ability to create money. One is the market's ability to create media of exchange which means market money can displace government money. The second is the market's capacity to create liquidity to finance economic activity and financial market transactions which has huge implications for financial stability that can impact employment and output. Both aspects matter, and I think this was the focus of Mehrling's (2000) commentary on MMT.

The ability to create media of exchange reduces demand for government money, which in turn reduces the ability of government to issue money in a non-inflationary way. Just think how the demand for cash (government money) has collapsed as a result of the rise of credit cards, debit cards, and payment by electronic bank transfer. Once upon a time wages were paid in cash (that was how it was in my first job in the 1970s). Now, they are paid by electronic bank transfers that are netted out through the bank clearing system. These developments have enormously reduced the demand for government money, tightening the financial constraint on government.

The second aspect concerns the market's ability to endogenously create finance for both real and financial sector transactions. That capacity creates the potential for real sector inflation and financial sector bubbles. This complicates management of the economy and necessitates policy measures to guard against such outcomes, which has implications for both interest rate policy and financial regulation.

MMT is dismissive of these market driven aspects of money. For instance, Wray (2012, p.2-3) writes:

> "We all know the usual approach to money: it begins with a fantasized story about barter, the search for an efficient medium of exchange, the role of the goldsmiths, and then on to the gold standard, the deposit multiplier, fiat money, and monetary neutrality – at least in the long run…in my view the conventional story is wrong –"

That dismissiveness leads to schizophrenic incoherence. On one hand, MMT-ers accept the Post-Keynesian theory of credit-driven endogenous money and are avowed proponents of Minsky's (1992) financial instability hypothesis. On the other hand, their dismissal of the market's capacity to create money means they fail to recognize a fundamental source of instability and how that capacity complicates the task of ensuring full employment with price stability. That incoherence shows up in MMT's views about interest rate policy.

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