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Endogenous Money, Fiscal Policy, Interest Rates and the Exchange Rate Regime: A Comment on Palley, Tymoigne, and Wray[1]

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Introduction

One of the main *collective* contributions of the various heterodox schools of monetary thought, such as circuit theory, Post Keynesian theory, in both its horizontalist and structuralist versions, modern money theory (now known simply by its acronym MMT), and others, has been to stress the importance of the endogeneity of money *via* bank credit creation. This issue was hardly discussed at all in the economics mainstream after Keynes's death, not until the very end of twentieth century and the beginning of the twenty-first. Even then the so-called "new consensus" model, which emerged as the orthodox theory over the turn of the twenty-first century, tended to obscure rather than clarify the issues at stake. This was probably inevitable given that Wicksell (1898), whose own work was a hundred years old by this time, was explicitly or implicitly the inspiration for the new consensus (Woodford 2003). Neo-Wicksellian models carry a heavy load of intellectual baggage, including the bogus concept of the "natural rate" of interest, and also, which is fatal once the idea of endogenous money is admitted, a failure to recognise that there can be multiple sources of inflation and deflation.

It is necessary to stress the notion of a collective contribution because of the various claims and counter-claims to academic priority made in the literature. The recent exchange between Thomas I. Palley (2015a, 2015b), and Eric Tymoigne and L. Randall Wray (2015), in

the *Review of Political Economy*, provides a clear example of this. Wray and Tymoigne are writers directly associated with the MMT school, and Palley with Post Keynesian economics more generally. Palley first provides a critique of MMT from the point of view of what he calls "established Keynesian monetary macroeconomics" (Palley 2015a, 2). Tymoigne and Wray (2015) then respond sharply to these criticisms. Palley (2015b) makes a further rejoinder entitled the "The critics of MMT are right".

From my point of view, reading this exchange was not encouraging as a summary of the state of the academic debate in the early twenty-first century. I should explain that I have been following the works of both of the older generation of this group of writers for more a quarter of a century, with great interest. In the case of Eric, I have known about his work ever since he has been active in research, and well before he attained his current academic rank. Though I certainly do not think it possible to accept every claim made by each of the three, I have nonetheless learned much, from each of them, in developing my own approach to the various issues under debate. Indeed, I would go so far as to say that together their efforts have been indispensable (with others, of course) to anyone attempting to form a position on these important questions. This is also why it is of some importance to examine their differences in this dispute in more detail.

It should be said at the outset that one concept introduced by another member of the MMT school, namely, Bell's (2001) notion of the "hierarchy of money", might have been useful in reconciling some of these differences, but this idea was not much discussed.

Palley's Criticisms of MMT

According to Palley (2015a, 1):

> Modern money theory (MMT) is an approach to the origins of money, the source of value of *fiat* (sic) money, and the nature of the financial constraint on government.

However, he thinks that the claims about public finance are "nothing new", those about policy are "unsubstantiated", and the discussion of the origins of money is based on a "misunderstanding" (Palley 2015b, 57-61).

Tymoigne and Wray (2015, 24-44) re-assert what they take to be the central contribution of MMT, namely the idea that "monetarily sovereign" governments are not financially constrained in same way as non-sovereign governments (*e.g.*, provincial and municipal governments). They also point to the detailed institutional and conceptual insights provided by MMT scholars about the workings of fiscal, banking and financial systems in several different political jurisdictions around the world. Finally, they affirm the value of policy recommendations about price stability, full employment and financial stability, based on MMT reasoning.

Who is right on each of these issues? As usual in these sorts of disputes, the answer is that both camps are right to some extent, and also that they are both wrong.

"Money-Tree Economics"?

Palley (2015a, 21) ultimately dismisses MMT as "modern money-tree economics". This is presumably a reference to the homily in English that "money does not grow on trees". And, in fact, there would be nothing new or "modern" about this type of thing, as shown by the following quote from a lecture given by the "pre-Keynes" Cambridge economist Dennis

Robertson[3] as long ago as February 1928. (The lecture was therefore prepared and delivered well *before* either the stock market crash of late 1929, or the Great Depression of the 1930s.) According to Robertson (1940, 39):

> I think … our [chair] … will bear me out that one cannot set up, even in
> a modest way, as writer on monetary affairs, without becoming the target
> for a … stream of documents – manuscript, typed and printed – designed
> to show that the ills of the human race are all due to monetary mismanagement,
> and all curable by monetary manipulation. In the back streets of London suburbs
> and northern industrial towns, on the plains of India and the prairies of the Middle
> West, those who have Found the Light about Money take up their pens and write,
> with a conviction, … persistence … and … devotion otherwise only found among
> the disciples of a new religion. It is easy to scoff at these productions: it is not so
> easy … to see exactly where they go wrong. It is natural that practical bankers,
> vaguely conscious that the projects of monetary cranks are dangerous to society,
> should cling in self-defence to … tradition and accepted practice. But it is not open
> to detached student[s] of economics to take refuge from dangerous innovation in blind
> conservatism. [They] must assess with an equal eye the projects of the reformers and
> the claims of the established order … to this end … must [themselves] build up … a
> theory of money – a critical analysis of the nature and results of the processes by which,
> under a modern system of banking, money is manufactured.

The geographical references in this passage are fascinating. For example, India is mentioned, no doubt, because at Robertson's time of writing that country was still an integral part of the global British Empire.

The phrase "industrial towns" makes one think not only of the North of England, but also inevitably the Midlands, specifically Birmingham. One of several critical targets of Hayek at around the time Roberston was writing (Hayek 1994, 93) was the work of the "Birmingham inflationists" of the previous century, personified by Thomas Attwood. J.S. Mill was said to have commented, in Attwood's own time, that "Birmingham is not England" or words to that effect (Humphrey 1977). The response might have been "neither is the City of London", but whether anyone thought to make it is not recorded. Translated into the context of the USA, this simply

John Smithin: *Endogenous Money, Fiscal Policy, Interest Rates and the Exchange Rate Regime*

anticipates the perennial "Main Street versus Wall Street" divide.

Finally, with the reference to the "prairies of the Middle West" Robertson (seemingly) anticipates the arrival of MMT, *via* the University of Missouri at Kansas City, by a full 70 years. (The coincidence is, of course, not really that surprising to anyone familiar with the intellectual history of both the USA and Canada, especially as far as views on banking are concerned).

However, is this a fair comparison to make, on my or anyone else's part? Of course, it is *not*. I am sure that all economists who have ever put forward heterodox views on money (certainly including myself) have been subject to the charge of favouring "funny money". In the case of MMT, there is, very clearly, far more of substance in the institutional and historical analysis that they have conducted, than could ever justify their being tarred with that brush. Nonetheless, it is an obvious trap to fall *into* in the academic arena, and it *is* fair to say (as does Palley) that the MMT writers have done very little to avoid it. This applies, in particular, to the various unorthodox policy proposals that have been put forward, few of which seem to logically follow from the institutional analysis.

The Central Contribution of MMT? And Other Theoretical Disputes

The central contribution of MMT is, I think, precisely what its authors claim it to be. In the words of Tymoinge and Wray (2015a, 24-5)

> [A] … main contribution … has been to explain why monetarily sovereign governments have a flexible policy space unconstrained by hard financial limits.

> Palley is right, of course, that this is *not* new and also that MMT authors regularly fail to

give credit to the many others who have expressed similar views.[4] Nonetheless, they have been

uniquely successful in the *promotion* of these ideas over the past couple of decades, particularly

since the advent of the Euro-zone in 1999, which has been an important contribution in the

contemporary political environment.

As for the term "monetarily sovereign", it is of some interest precisely what is meant by

this. When Wray's (1998) book on *Understanding Modern Money* was first published, there was

a quote from Warren Mosler in the front-piece as follows:

> The achievement of zero unemployment, price stability, and a market economy
> for the long term, as advanced by Wray, is viable only with floating exchange rates.

This caught my attention as it was close to my own position at the time and I was pleased to see

such an unambiguous statement. However, Tymoinge and Wray (2015, 24) now seem to hedge

to some extent as follows:

> We use the term 'sovereign government' to indicate a government that issues
> its own currency… a monetarily sovereign government can choose among
> alternative exchange rate regimes – fixed, managed, and floating – which
> impact domestic policy space.

They go on to explain the nature of the constraint in the different cases. In fact, in a model of a

theoretical *closed* economy (with only one central government, and no trade with the rest of the

world), as in Smithin (2013, 221-33), it turns out to be a fairly straightforward exercise to

demonstrate the essence of the MMT case about the lack of financial constraint on that

government. [5] In the open economy, however, the nature of the exchange rate regime is indeed

the key factor. Moreover, following the argument in Smithin (2013, 221-38), it is now possible

to be more precise about how the results from a closed economy model translate into the

practical open-economy setting. As a "broad brush", we can identify four possible exchange rate

regimes:

1. A floating exchange rate.

2. A "fixed but adjustable" exchange rate.

3. An irrevocably fixed exchange rate or "hard peg".

4. An optimum currency area (OCA).

In an economy with *a floating exchange rate*, and in the context of a plausible model, we get qualitatively the same results as in the equivalent closed-economy model. All that would be needed for a more complete discussion would be to add results for the real exchange rate and the foreign debt position. In an economy with a *fixed but adjustable exchange rate* the results also resemble qualitatively those of the closed economy. This is an important finding, because it does allow for some domestic control over both monetary and fiscal policy even outside Mosler's preferred regime of a pure floating rate. However, it must also be said that there is no real benefit for the domestic economy in having this regime rather than a floating rate (Smithin 2013, 292-7).

On the other hand, a putative *hard peg* for the exchange rate (a metallic standard, a "credible" fixed exchange rate regime, a currency board with no loopholes, *etc*.) is actually an unstable regime - outright - and will eventually break down. There are numerous historical examples of this.

Finally, the idea of an *OCA* originally due to Mundell (1961) is an attempt to do away with exchange rates altogether, and has been (very negatively) influential in practical politics in the 21st century. It is now understood both from experience and *ex-post* analysis that when initially applied, the OCA will have many of the characteristics of a hard peg (as was the case in the Euro-zone). Therefore, there are really only two possible long-run outcomes either (a) break-

up, or (b) eventual evolution into a true federal state (the different countries literally become

"provinces", in the Canadian sense of this term).

Still on the topic of the open economy, Palley (2015b, 55) refers to the well-known

covered interest parity (CIP) condition, from international finance, as "raising legitimate

concerns about MMT policy recommendations". In a notation previously used elsewhere

(Smithin 2013, 274-7), this CIP condition may be written as:

(1) $i - i^* = (E - F)/E$

where i is the domestic nominal interest rate, i^* is the foreign nominal interest rate, E is the

current spot exchange rate - defined as the *domestic* currency price of one unit of *foreign*

exchange - and F is the forward exchange rate. It seems to be implicit in the discussion, however,

that the uncovered interest parity condition (UIP) also holds, so that;

(2) $lnF = lnE_{+1}$

which is similar to the result of a "rational expectations" or "efficient markets" analysis. In

reality, however, under floating exchange rates, and regardless of how expectations are formed,

UIP frequently does *not* hold. The forward rate differs from the expected future spot rate, E_{+1},

due to the existence of the so-called "risk premium", Z, (a true Keynesian would presumably

prefer to call this an "uncertainty premium"):

(3) $lnE_{+1} = lnF + Z$

Therefore, in general, under flexible exchange rates, domestic nominal interest rates can

deviate from foreign interest rates according to:

(4) $i - i^* = [(E - E_{+1})/E] + Z$

As mentioned, even in the case of a "fixed but adjustable" exchange rate the domestic

authorities can still retain some control over the domestic interest rate. In such circumstances, although it may well be the case that the exchange rate is not *expected* to change (that is, $E = E_{+1}$), nonetheless, it possibly could do so. This must be priced into all relevant financial contracts. Domestic nominal interest rates will still differ from foreign rates according to:

(5) $i - i^* = Z$

Note that this result does not rely on capital controls or other political impediments to the free flow of funds from one jurisdiction to another. Ironically it is the *lack* of firmness and resolution about exchange rates that provides the "policy space". The other two regimes provide no policy space, which is why they are unstable.

Returning to the absence of financial constraints for the sovereign government, Palley is also correct in suggesting that several other writers have anticipated the MMT school about this. (Lerner's notion of "functional finance" from the 1940s obviously comes to mind).[8] However, he (Palley) is surely *wrong* to include the so-called "Keynesians" of the neoclassical synthesis (henceforward "neoclassical Keynesians") as being among the precursors of MMT in this area. In the neoclassical Keynesian literature, including contributions by Christ (1968), Blinder and Solow (1973), Tobin and Buiter (1976), and Tobin (1982),[9] much was made of the contrast between the "bond financing" and "money financing" of deficits. The former was regarded as being acceptable while the latter was not. Contrary to both Palley's (2015a, 4; 2015b; 51) statements on this, it is a long stretch from this position to what the MMT group is trying to say.

If D stands for the government budget deficit, G for government expenditure, T for taxes and R for interest payments on the national debt, then, by definition:

(6) $D = G + R - T$

The usual argument that follows from this is that a deficit if one exists (*i.e.*, $D > 0$) can be financed one of two ways. Either the Ministry of Finance (the "Treasury" in the USA) can sell bonds, *B*, to the general public (bond or debt financing), or the Central Bank can buy bonds from the Ministry of Finance, in exchange for its own liabilities, *H* (money financing). The symbol "*H*" dates back to the heyday of monetarism in the 1960s and 1970s, when the monetary base was called "high-powered money". It is *not* a good descriptive term but it remains convenient to have a different symbol from the overall money supply, *M*, consisting mainly of the deposit liabilities of commercial banks.

The choices about how to finance the deficit can thus be characterized as;

(7) $\qquad D = \Delta B + \Delta H$

where ΔB represents the bonds sold by the Ministry of Finance to the general public and ΔH is the increase in the monetary base due to the Ministry of Finance directly selling bonds to the Central Bank.

Note that by bringing the two different branches of government into the discussion, we touch on another issue debated by Palley and Tymoigne and Wray (2015, 26-7), whether or not it is sensible to "consolidate" the accounts of the government and treat the Central Bank and the Ministry of Finance as one. (The actual answer to this conundrum is that this is convenient for some purposes but not others). In the present context, note that keeping the accounts separate, and then specifying the relations between them, is actually the move which gives rise to the concept of money finance *versus* debt finance in the first place.

The point that Palley (2015b, 48) makes about money *versus* bond financing is to say that the neoclassical Keynesians always recognized that a sovereign government could set $\Delta B = 0$

and that therefore the deficit *may* be 100% money financed. Equally likely, however, the opposite choice could be made, with $\Delta B > 0$ and $\Delta H = 0$, which was the preferred option for neoclassical Keynesians. Above all note that throughout this discussion the concept of "money finance" is restricted to the idea that it is the *monetary base* that increases to pay for the deficit.

This means that in order to make any more general statement about the endogeneity or exogeneity of money the neoclassical Keynesians would be forced back to another monetarist notion of the 1960s, that of the "money multiplier" (Friedman 1960, Goodhart 1989). For the purposes of monetarism at that time it had to be argued that there was a reliable connection between the growth of the central bank's own liabilities and that of the money supply itself. This was the role of the money multiplier, which was supposed to operate on the same principles as the "deposit multiplier" - an older concept which had been in the textbooks since the 1920s (Humphrey 1987). The money multiplier is given by (something like):

(8) $\Delta M/\Delta H \quad = \quad [(1+cd)/(cd +rr)]$

The idea was that if *H* changes by some given dollar amount the money supply, *M*, itself will change in the ratio $(1+cd)/(cd + rr)$, where *cd* is the cash-deposit ratio, and *rr* is the reserve ratio. Again, however, the argument simply does not work. In reality, all of *H, M, cd,* and *rr* are endogenous variables. In the real world commercial banks "keep in step" (Keynes 1930, 23), not by restricting themselves to loaning out "other people's money", but by adjusting their own lending and deposit rates whenever the central bank policy rate changes (Kam and Smithin 2012; Lavoie 2010). It is therefore reasonable to argue that the central bank can influence commercial bank lending rates (and thereby the nominal value of bank balance sheets) by changing the policy rate, but *not* that there is any direct numerical relationship between *H* and *M*. There is

therefore no connection between the value of ΔH in equation (7) and the much more meaningful

statement for a theory of endogenous money, that, given external balance and domestic

investment-saving balance:

(9) $\qquad D \ = \ G + R \ - T \ = \ \Delta M$

This relation is what is important in a theory of endogenous money, when focusing on the budget

deficit. There are also analogous expressions that can be derived when $D = 0$ combined with

imbalance in one or another of the remaining sectors.

Theory and Policy

In contrast to the attempted defence of neoclassical Keynesians and their concept of money

financing *versus* debt financing, Palley (2015a, 5; 2015b, 51) is on much stronger ground in his

critique of MMT for *no*t providing a coherent macroeconomic model. He complains that:

> MMT has no model ... [that is, it] ... has failed to provide a formal model
> that explicates (sic) its claims .... (g)iven this lack of formal modelling
> readers must fend for themselves.

 This is surely fair comment. It is precisely the lack of a formal model that leads to very many of

the misunderstandings and confusions that seem to prevail in this literature on both sides of the

debate. It is also the main reason why discussions of the various policy options suggested by

MMT theorists have been so unfruitful and inconclusive. For the most part there is no basis to

discuss the likely effects of the various policy initiatives. Palley unmistakably raises this issue in

the quote above, and is quite explicit about it elsewhere.

There is, actually, *one* particular policy proposal of MMT that might be thought to lead to

trouble in virtually any coherent model of an economy and Palley does highlight this problem. This is idea that the optimal value of the nominal policy rate of interest is zero, the so-called "Kansas City rule", sometimes expressed by saying that the "natural rate of interest" is zero (Palley, 2015b, 55-6).[10] As a proponent of an alternative *real* interest rate rule (Smithin, 1994, 2007, 2003, 2009), I do have to agree with Palley that the notion of a zero nominal interest rate is misguided, but *not* with his idea that "discretion" (rather than the sort of rule he dismisses as a "park it" policy) is the way to go for monetary policy (Palley 2015a, 17). In fact, I would argue that some kind of "park it" policy is precisely what is needed to avoid the problems that have been *caused* by misguided policy initiatives in the real world, including the periodic fads for various types of feedback rule. This point requires further discussion - in the section on "stabilizing the economy" below.

On the other hand the absence of a macroeconomic theory in MMT cannot, and does not, imply that the theory of the neoclassical Keynesians or "old Keynesians" is correct by default. Although they do not offer any viable alternative, Tymoinge and Wray (2015, 40) were rightly:

> " … surprised that Palley continues to promote a rather orthodox theory
> of the Phillips curve trade-off."

Palley (2015a, 11; 2015b, 53) does indeed strongly assert that "the issue of the Phillips curve is central to macroeconomics and policy", and even predicts that if MMT theorists "ever produce a model … it will look a lot like the [Old Keynesian] framework …". By now, the reader may well reasonably doubt whether either of these points (about the Phillips curve or an MMT turn to mathematical modelling), has any basis. I do think that MMT theorists are correct to reject the notion of the Phillips curve (the supposed trade-off between inflation and unemployment, or

unemployment and growth), but it is also true that "you can't beat something with nothing".

Here is what I said about the dubious notion of the Phillips curve in an encyclopedia

entry on the topic some years ago (Smithin (2002, 584-5):

> … any comprehensive theory of inflation and growth, should be able to
> explain equally convincingly, periods of high growth with high inflation, low
> growth with low inflation, low growth with high inflation, and high growth with
> high inflation. All of these have occurred in different times and different places.

These circumstances are what needs to be explained, rather than Phillips's contrived

exercise for a particular country (the UK) and a particular 91-year time period,1867-1958.[11]

Having decided *what* needs to be explained, there is still the task of actually providing the

explanation, and the MMT literature does not really do this. By contrast, two formal models

which reject the Phillips curve trade-off and yet can explain how all of the different growth and

inflation combinations occur are presented in Smithin (2009), and Smithin (2013). These

exercises differ in their treatment of suggested relationship between real interest and inflation,

the so-called "forced saving" effect or "Mundell-Tobin" effect (Kam 2005; Smithin 2013, 207-

11), but otherwise give similar results. I now think the latter (which contains a Mundell-Tobin

effect, but does *not* predetermine the results on inflation and growth) supersedes the former.[12]

This brings us back to the issue of social ontology. I would say that it is *precisely* on such

issues as rules versus discretion, the legitimacy of the Phillips curve and the merits of activist

fiscal policy, that these questions of the nature of money, the origins of money, the role of money

in capitalism and the economic sociology of money are most highly relevant. This requires yet

another intellectual re-alignment as these sorts of questions *are* addressed, at least to some

extent, in the MMT literature, but are brushed aside by Palley (2015b, 47) as "red herring[s]". To

the contrary, it can be argued that although not seeming, at first sight, to be closely related to matters of theory and policy, they are fundamental.

It has always been highly anomalous that, in Economics "101", no one is surprised to learn that sometimes price increases are associated with an increase in output (when demand increases), and sometimes with a decrease in output (when supply falls). This just seems to be the logical consequence of demand and supply analysis. However, all of this somehow goes out of the window in later courses on macroeconomics. At the macroeconomic level, mainstream theory attempts to rule out such common-sense notions by the appeal to "natural rates" of unemployment, output, growth and interest, and by the insistence that employment and output are ultimately determined *only* on the supply side.

How has this come about? The reason is that a basic research strategy in economics, from Adam Smith, through Menger, Robbins, Samuelson*, et al.*, and in every textbook, has been to invoke a hypothetical world without money, yet which nonetheless has a fully-fledged market economy (the barter economy). The idea is promoted that, even in an actual money-using economy, researchers should learn to look behind the "veil of money", because, on this view the barter ratios are presumed to reflect the true underlying preferences. Needless to say, there is no recognition that actual relative prices, expressed in money, and observed in the real world, are also influenced by all kinds of social factors. Indeed the barter equilibrium, even though it exists only as a sort of thought experiment, is traditionally regarded as the norm or ideal for the "optimal allocation of resources". In reality there would be no trade in the first place until someone hit upon the notion of money, and hence there is no factual basis at all to judge what an optimal allocation should be. Adam Smith's (1776, 65) original discussion of an "early and rude

state of society" with "one beaver ... naturally ... worth ... two deer" (if it takes twice as long to

catch the one as the other) was clearly disingenuous, both from the historical and anthropological

point of view, but has been remarkably influential.

Moreover, it is an article of faith in this approach that money is generated by the market.

Money itself is supposedly emergent from "market forces" - not the other way around. Among

our current authors it seems that Palley (2015b, 60) does accept this view, which means thinking

of money primarily as a *medium of exchange* rather a *means of payment* (of debt). This is attested

by the references to "Bitcoin", dollarization, scrip money, and so forth, in the appendix. To the

contrary, in my own view (Smithin 2003, 2009, 2013), if we correctly understand what is really

meant by such terms as "a market", "money", "credit", and so on, it is clear that the conditions of

a full-blown barter exchange economy have never existed in the past, do not exist today, and

cannot possibly exist in the future. In a similar vein, I note that the anthropologist Graeber

(2011), drawing on Innes (1913, 1914), Wray (1998) himself, and Ingham (2004), writes

explicitly of the "myth of barter". A typical response to this sort of argument is that if it can be

shown it is logically *possible* for a money economy to emerge from barter exchange then, even if

such a process did not occur historically, that is an adequate justification for using barter as a

template. However, it is *not* possible to show that a pure barter system would be viable if it ever

was established. All such attempts fail, by analogy to what used to be called the "realization

problem" (*e.g*., in early twentieth century Marxian economics). There will be further discussion

on this below.

An important example of a research strategy fatally compromised by the myth of barter is

that of Wicksell (1898, xxv), mentioned in the introduction as the precursor of the modern "new

consensus", who wrote of the "natural rate of interest". According to Wicksell:

> "This natural rate is roughly the same thing as the real interest of actual
> business. A more accurate, though rather abstract, criterion is obtained
> by thinking of it as the rate which would be determined by supply and
> demand if real capital were lent in kind without the intervention of money"

But, if barter is a myth, then the idea of a natural rate of interest must also be a myth. To put the

point as straightforwardly as possible, how can there be "actual business" without a money of

account and credit creation? There cannot be. Furthermore, if the natural rate of interest is a

myth, then it seems to follow from economic theory itself (Kam 2005; Smithin 2003, 2009,

2013), that all cognates, such as the natural rate of unemployment, the natural rate of growth, the

"NAIRU" (non-accelerating inflation rate of unemployment), and, even, the very notion of "full

employment" (in the sense of a threshold for inflation) are also myths. All the building blocks of

Phillips curve analysis are myths.

"Stabilizing an Unstable Economy"?

The above is a reference the title of a widely-read book by Hyman Minsky (1986), the originator

of the "financial fragility hypothesis". It is relevant here, because, as Palley (2015b, 56) says,

many contributors to the MMT literature are also followers of Minsky. It is therefore reasonable

to inquire whether some of their policy recommendations would help with the stabilization of the

economy, or the reverse. To explore this question in more detail, first consider the following

simple model of the demand for, and supply of, endogenous money;

(11) $M = \psi PY$ $0 < \psi < 1$

(12) $M = \phi W_{-1} N_{-1},$ $\phi > 1$

where M is total holdings of commercial bank deposits in period t, and $W_{-1}N_{-1}$ is the aggregate

nominal wage bill of the previous period. The idea that the money supply depends upon the total

wage bill (in equation 12) comes from circuit theory (Graziani 2003, 27). It is important to note,

however, that for the industrial system to be *viable* in the sense of generating positive monetary

profits, the coefficient, ϕ, must be greater than one. This represents all other types of borrowing

over and above what is needed to finance the aggregate wage bill (Smithin 2013, 228-30). There

is implicitly a one- period production lag, whereby the expression $Y = AN_{-1}$ maps lagged labour

input into current GDP. From (11) and (12), it is thus clear that the aggregate price level, P, must

be given by:

(13) $\qquad P = (\phi/\psi)(W_{-1}/A)$

Next, divide through by P_{-1} and take natural logarithms. The result is:

(14) $\qquad p = ln\phi - ln\psi + w_{-1} - a$

where lower case p is the inflation rate ($p = lnP_{-1} - lnP_{-1}$), $w_{-1} = lnW_{-1} - lnP_{-1}$, and $a = lnA$. Now

suppose that:

(15) $\qquad \phi/\psi = [(\phi_0/\psi_0)]e^{-\lambda(r - r_{-1})}$, $\qquad\qquad\qquad 0 < \lambda < 1$

This specification obviously contains a version of Keynes's (1936, 196) "speculative"

demand for money from the *General Theory*. However, as noted, there is a speculative supply of

money as well arising from bank loans for such things as (literally) financial speculation,

consumer spending, *etc., etc.* Taking natural logs again:

(16) $\qquad ln\phi - ln\psi = p_0 - \lambda(r - r_{-1})$

which introduces a new term, $p_0 = ln(\phi_0 - \psi_0)$. This can be thought of as representing the purely

psychological element of liquidity preference (rather than speculation about the future of interest rates, as such). It may perhaps be identified with the overall "bullishness" and "bearishness" of financial markets from Keynes's (1930, 128-31) earlier book, the *Treatise on Money*. Once again, both sides of the money market are affected and we have the following overall expression for inflation:

(17) $$p = p_0 - \lambda(r - r_{-1}) + w_{-1} - a$$

Finally, recall that by definition:

(18)   ` $$r = i - p_{+1}$$

Now suppose that the Central Bank just fixes the *nominal* policy rate at whatever level, which includes the MMT idea that it should be allowed to fall to zero. The main point is that the Central Bank is *not* following a feedback "rule" conditional on previous outcomes. The setting of the nominal policy rate (*e.g.*, the overnight rate in Canada), whatever it is, will be "passed through" to interest rates in general *via* the expression:

(19) $$i = m_0 + m_1 i_0, \qquad\qquad\qquad m_0 > 0, \ 0 < m_1 < 1$$

Therefore, letting $w = w_{-1} = w_{-2}$, *etc.*, in "real" equilibrium the following difference equation in inflation emerges:

(20) $$p = p_0 + w - a + \lambda(p_{+1} - p)$$

Lagging one period and re-arranging we obtain;

(21) $$p = [(1+\lambda)/l]p_{-1} + (1/\lambda)(p_0 + w - a)$$

As $0 < \lambda < 1$, then the term $[(1+\lambda)/\lambda] > 1$. Therefore under these circumstances – a *nominal* interest rate peg - there is inflationary instability. See Smithin (1994, 2007, 2009, 2013).

This confirms what Palley (2015, 55-6) has to say about MMT's interest rate policy.

On the other hand, suppose that the central bank pursues a real interest rule, such as;

(22) $\qquad i_0 = r_0 + p$

where r_0 is the inflation-adjusted "real" target for the overnight rate. This is also, *contra* Palley, a "park it" policy, but does pay attention to the observed inflation rate. This rule yields a stable difference equation, which is "convergent", meaning that the inflation rate does eventually settle down to a steady-state equilibrium value, whether high, low, or even negative. Given (22):

(23) $\qquad p = p_0 + w - a - \lambda m_1(p - p_{-1}) + \lambda(p_{+1} - p)$

That is:

(24) $\qquad \Delta p_{+1} = m_1 \Delta p - \lambda(p_0 + w - a - p)$

As $0 < m_1 < 1$, the difference equation in (24) is convergent. In equilibrium, $\Delta p_{+1} = \Delta p = 0$, and the inflation rate stabilizes to:

(25) $\qquad p = p_0 + w - a$

In principle this is a more-or-less comprehensive theory of inflation for an economy with endogenous money. Cost push and productivity changes are relevant, but so also are the parameters of the explicit money supply and demand functions.

The Ontology of Money, or, Where do Profits come From?

It is necessary to return to the ontology (nature of) money and its role in capitalism. The problems caused by the reliance on barter exchange and appeals to natural rates of unemployment, growth and interest were discussed above and we sided with Tymoigne and

Wray on these matters rather than Palley. But there is more that needs to be said.

Tymoigne and Wray (2015, 26) do, in fact, explicitly refer to the notion of the "monetary circuit" in their exposition of MMT, which is a term that originated in Marx. More directly relevant to Post Keynesian economics it is noteworthy that in some writings before the *General Theory,* Keynes (1933a, 1933b) did allude to the Marxian monetary circuit, which he (Keynes) wrote as $M – C – M'$. However, these references did not survive in the eventually published version of the *GT* itself in 1936. Nor did Keynes seem particularly confident about the concept in the debates about interest rate theory in the *Economic Journal*, and elsewhere, the following year (Graziani 1984). Writers such as Augusto Graziani (1990, 2003) and Alain Parguez (*cf.* Parguez and Seccareccia 2000) have since developed the theory of the monetary circuit in far more detail, arguing that to advance Keynes's idea of a *monetary theory of production* it is necessary to go well beyond the arguments of the *GT*. In short, this was another missing piece of the puzzle in Keynes, and is it important to inquire about its exact significance for an overall system of political economy. As shown by their use of circuit theory, their preference for institutional analysis and an interest in the origins of money, MMT scholars do seem to have an awareness of the underlying issues - even if they are not quite explicit about them. Palley (2015b, 60-1) however, as mentioned, does not show much interest at all and relegates the discussion of these matters to an appendix.

The essence of what is at stake is contained in a question that economic sociologists do sometimes ask (Collins 1986), but economists almost never, "where do profits come from?". A starting point for an answer is to write out the expression for the scheme set out *Das Kapital* vol.2, ch.1, in full, that is, $M – C ... P ... C' –M'$ (Marx 1884, 109) where " $... P ...$ " stands for

21

the details of the production process, and to try to explain precisely what $M' - M$, and $C' - C$, are supposed to represent. A simplified and stylized version of complete circuit, using symbols from the English translation, can therefore be written as:

(26) $M - C - C' - M'$

The entrepreneurs start with a sum of money (dollars) *M*. Then they buy some commodities *C* (including raw materials *plus* labour time). Next, they engage in production, using *C*, to make more (that is, "more valuable") commodities *C'*. The term $(C' - C)$ therefore corresponds to the real value-added in the economy. Entrepreneurs then sell the enhanced commodities, *C'*, for more *money M'*, and the difference $(M' - M)$ is what we will call the realized money profit. So, this is capitalism according to Marx, not dissimilar to the views of Weber, Schumpeter, Keynes and others.

To proceed any further with the argument we would first need to define "real value", a very old question in economics. In Marx, and some versions of classical economics, there was a labour theory of value. Later neoclassical, "Austrian", and modern mainstream, economics used the nebulous concept of utility. More to the present point, if the money supply is supposed to be fixed, how can it be p*ossible* for *M'* to be greater than *M* and, hence, for money profits to be realized? This is the crucial question, but neither Marx, nor the classical economists, nor the neoclassical economists, ever seemed to get around to asking it. Implicitly, however, modern accountants do ask it of modern businesses every day.

The point is that the system must generate positive aggregate profits in money terms, *before* any "real" profit or surplus can even come into existence for the different parties to dispute. Granted, even if $M' = M$ it would still be possible for some firms to make profits while

others make losses. This is the usual meaning of "competition". But this is *not* the answer. It is still impossible for firms on average (in aggregate) to be profitable. The system as a whole cannot function on the basis of zero aggregate money profit, as the expectation of success in any particular business is zero and, hence, there is no real incentive to act. The only feasible solution is that there must be credit creation (money creation) by the banking system.

In modern economics, "real value added" is no longer thought of as "embodied labour" (nor even utility – in practice) but as something like the standard definition of real GDP:

(27) $Y = C + I + G + (EX - IM)$

where *Y* where stands for real GDP, *C* for real consumption expenditure, *I* for real investment spending (firm spending), *G* for real government spending and (*EX – IM*) for real net exports.

For theoretical purposes these symbols should refer to real flows of funds (in money terms, deflated by an "ideal" price index as in Fisher) rather than the imputed values actually provided by the statisticians. This is because the actual GDP numbers are not "stock-flow consistent", a requirement endorsed by both Palley (2015a, 49) and Wray (2012). In practice, the GDP numbers are all we have for empirical work, but in no way are they 100% consistent or accurate. With this caveat, the circuit becomes:

(28) $M - Y - M'$

If *M' = M*, there is no *Y*. Why? (No pun intended). This is because there is no *incentive* to produce *Y*. Even if *M' > M,* it is still quite possible for there to be no *Y*. Then the circuit will be;

(29) $M – M'$

which is the case where all the borrowed money goes for financial speculation, *etc*., and nothing is actually produced.

If (M' – M) > 0, and also (roughly) = Y (or is consistently not much greater than Y) there

is a profit incentive for production, and prices will also be (roughly) stable (or the inflation rate

will be "low and stable"). If $Y > 0$ but (M' – M) is much greater than Y, there is production but

prices will be rising (*i.e.*, there will be a "high" inflation rate). It seems clear that both

macroeconomic policy and financial regulation should be working toward the first of the latter

two outcomes. (The case of outright instability has already been discussed above).

Conclusion

I would like to go back to the long quotation from Robertson (*op. cit*) above. This read in part:

> … it is not open to detached student[s] of economics to take refuge from
> dangerous innovation in blind conservatism. [They] must assess with an equal eye
> the projects of the reformers and the claims of the established order; and to this
> end … must [themselves] build up … a theory of money – a critical analysis of the
> nature and results of the processes by which, under a modern system of banking,
> money is manufactured.

Robertson did not himself succeed in this aim in the 20th century, any more than

Wicksell did in the 19th, or the modern neo-Wicksellians in the 21st – and for the same reasons.

Nonetheless, it is the right objective and is also ultimately the criterion by which the arguments

of our disputants, and this response, will have to be judged.

Notes

1. I would like to thank Marc Lavoie, Hana Smithin, Leo Zalmanowitz and A.N. Other for
making useful comments and criticisms which have helped improve this paper. Remaining errors
and omissions are the sole responsibility of the author.

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John Smithin: *Endogenous Money, Fiscal Policy, Interest Rates and the Exchange Rate Regime*

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3. In reality, Robertson started out as Keynes's student. "Pre-Keynes" here means pre-*General Theory*.

4. I am bound to mention such writings as Smithin (1991), Smithin and Wolf (1993), and Smithin and Smithin (1998). Granted, one of these was written in Czech, and meant as a warning for readers in the Czech Republic and diaspora about the perils of the Euro-zone.

5. This being the case, it is therefore quite a strange phenomenon, as Palley (2015a, 5) does not fail to note, that MMT theorists have consistently failed to provide any such model.

6. Palley (2015b, 50) claims that Tobin and Golub (1998) among neoclassical economists fully anticipated the main tenets of MMT but provides only a "one-liner" of a quote to substantiate this .This work cited is based on Tobin's graduate lecture notes over many years, but was only eventually published more-or-less simultaneously with Wray's book on *Modern Money* (1998). A decade or so earlier I remember attending a symposium on money involving Tobin, and including Hicks, Hollander, Laidler, MacKinnon, Tarshis, and the then Governor of the Bank of Canada, John Crow. Hicks was at that point preparing his later posthumously published *Market Theory of Money* (1989). I do not recall that the question of "taxes driving money" was even discussed, never mind being a central issue. However, it would surely have been front and centre at most heterodox meetings shortly afterwards?

7. This is another of Palley's criticisms of MMT (Palley 2015, 5-9) and is further discussed below.

8. Lerner (1943). See also the relatively more recent collection of papers edited by Nell and Forstater (2003).

9. Palley (2015a, 4) himself has provided these references.

10. This is idea that if the Central Bank did not actively intervene to set the nominal policy rate of interest rate it would fall to zero and, moreover, that this would be a good thing.

11. For most of which Britain was participating in the either the international gold standard 1873-1914, the restored gold standard 1925-1931, or the Bretton Woods system 1944-1973.

12. Given Palley's obvious admiration for the work of James Tobin, it should immediately be conceded that Tobin was prescient on this particular issue - the idea that there is a negative relationship between inflation and real interest rates in "normal" circumstances. That is, when the Central Bank is *not* enforcing its own counter-inflation preferences.

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