A Paradigm Lost, a Paradigm Regained - A Reply to Druedahl on Modern Monetary Theory

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Abstract

In this paper, we respond to Druedahl's (2019) critical engagement from a neoclassical perspective with the macroeconomic school of thought Modern Monetary Theory (MMT). We find that the confusion stems from different ontologies of the economic system. These divergences relate to whether capitalist economies are fundamentally demand- or supply-constrained, whether capitalism should be understood as a monetary production system where money is non-neutral rather than neutral at all times or in the long run, whether capitalism is an equilibrating or destabilising system, if the interest rate on government liabilities is a policy variable, and the role of the state in the monetary system. We note how MMT's divergence from core neoclassical axioms has rendered MMT economists able to predict and explain economic phenomena at odds with neoclassical reasoning. Nonetheless, neoclassical economics remains ever-amendable by ad-hoc additions to preserve core notions such as the 'natural rate of interest'. The theoretical differences lead to an epistemic divide over how to provide persuading academic arguments. We are therefore dealing with a paradigm shift driven by the unequal ability to make sense of observed reality.

The mind is its own place, and in itself
can make a Heaven of Hell, a Hell of Heaven.
- John Milton, 1667, *Paradise Lost*

1.0 Introduction

Modern Monetary Theory (MMT) has entered the Overton window of ideas circulated in public discourse since the election of Alexandria Ocasio-Cortez to the US House or Representatives in November 2018, stating that MMT "absolutely" needed to be "a larger part of the conversation" (Relman, 2019). MMT is an economic school of thought resting of the core observation that currency-issuing governments with a floating exchange rate and no debt denominated in foreign currency can never run out of money. They spend currency into existence and retire currency through taxation and issue bonds to assist the monetary authority

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in hitting its interest rate target. Taxation and bond issuance are not financing operations. This implies that government deficits and debts relative to GDP should not be a cause of concern with respect to solvency. MMT has reached the shores of Denmark and finally sparked a debate about conserved axioms and theories in economic practice and education. Jeppe Druedahl (2019), assistant professor at the University of Copenhagen's Department of Economics, has engaged MMT in a sincere, yet confounded, manner. Unlike various influential US economists, Druedahl has written a paper with quotes and references to MMT literature, thus seeking a sincere academic debate. We seek to bring qualified answers to Druedahl's questions and uncertainties with this paper.

Despite the recent occurrence of MMT in mainstream debates, MMT is not new. It has formed as a theoretical macroeconomic paradigm since the early 1990s by combining economic insights such as Knapp's (2013 [1905]) "State Theory of Money" (also known as 'chartalism'), Keynes' (2018 [1936], 2011 [1930]) original work and Minsky's (Minsky, 2008 [1986], 1982, 1975) financial instability hypothesis with studies of the operational reality of contemporary monetary systems and a new buffer-stock approach to stabilisation and employment policy. This financial point of departure enabled MMT economists to predict the failure of the Eurozone to maintain full employment and solvency (Bell, 2003), the unsustainability of the Clinton budget deficits (Godley and Wray, 2000), that quantitative easing would not spur inflation (Mosler, 2011), that Japan would not be subject to 'financial market discipline' despite the comparatively enormous public debt ratio, and the financial crisis that was in the making in the 2000s (Tymoigne, 2007). While the financial crisis was brewing, mainstream economics was distracted self-congratulating on the imagined "Great Moderation" (Bernanke 2004), believing that "[i]ts central problem of depression prevention has been solved, for all practical purposes, and has in fact been solved for many decades" (Lucas, 2003, p. 1). Despite this capacity to make solid predictions about significant economic events, MMT has not been let into the conversation in the 'top journals', as Druedahl observes (2019, 6), contributing to the journals' renowned image as echo chambers (Aistleitner et al., 2019; Heckman and Moktan, 2020).

Druedahl's concerns focus on the possibility of crowding-out of private investment by increased public debt, the government's ability to control price-adjusted interest rates and the risk of inflation (incl. political incentives to cause inflation). We will argue that these concerns stem from using a neoclassical, and thus non-monetary, underlying economic theory.

The general argument of this reply is that neoclassical deductive reasoning has been conserved in a benign academic environment to the degree that disagreement with conclusions based on neoclassical axioms appears outrageous. Faced with theoretical conundrums and anomalies such as the Great Financial Crisis, persisting unemployment and negative interest rates, the natural impulse of scientists is to bend the non-core beliefs of the dominant theory to make reality palatable (in the spirit of John Milton's quote above) and contained within the parsimonious framework through ad hoc adjustments (e.g. a high 'natural' rate of unemployment or a negative 'natural' rate of interest embedded in the unobservable structures of the economy). MMT approaches the world inductively, most importantly based on the operational reality of monetary systems. It arrives at vastly different conclusions with better explanatory and predictive ability regarding decisive economic developments. As we will review, the compatibility and indeed ex-ante ability to predict of MMT the observed reality posit MMT as a progressive research programme. This is contrasted with the ex-post ad hoc

adjustments of the neoclassical framework that characterise a degenerative research programme, where "theories are fabricated only in order to accommodate known facts" (Lakatos, 1978, 5). Crucially, the ontological divide over whether the long-run is a state of full capacity utilisation or rather a succession of short-runs subject to fundamental uncertainty and prone to both insufficient demand and unsustainable booms rather than equilibrium behaviour, gives rise to an epistemic divide about how to provide persuading arguments. The deductive-axiomatic core of neoclassical economics leaves economists prone to reject theory in coherence with observed reality if it rejects core assumptions, such as the nature of the long-run or the determination of interest rates.

An introduction to the core of MMT is presented below, followed by a presentation of Druedahl's critique and our response to Druedahl's outstanding questions.

2.0 MMT basics

MMT is a macroeconomic framework for understanding the macro dynamics of a monetarily sovereign state. 'Monetarily sovereign' implies a state which 1) issues its own currency, 2) demands taxes and other payments in this currency, 3) has no public debt denominated in a foreign currency and 4) a (relatively) free-floating exchange-rate. The central implication of this institutional setup is that the central government is free of financial constraints. It cannot run out of money and therefore has the ability to ensure a sufficient level and proper direction of effective demand to achieve the state's public purpose, incl. full employment and price stability. In a typical monetary system, the central bank pays the government's expenses by crediting the accounts of the receiving banks. Since the central bank is the monopoly supplier of currency, it cannot run out of money. Often, government is forced by laws to sell bonds to increase its account at the central bank, which is also increased by tax collection. Central banks only make payments for the government if the government's balance is still positive after the payment, with all payments reducing the government's account. This is a political rule. The only technical way of paying the government's expenses is through crediting bank accounts. Grubb (2018) describes how in the pre-Independence colony of Virginia tax income of the government was burned. This only makes sense if the currency issuer cannot run out of money, always being able to print or type it into existence at close to zero cost. In a modern economy, central banks are set up to carry out the payments by and to the government incl. taxes and bond purchases. While the rules set up to prevent direct financing by central banks gives the appearance that governments are financed by taxes and bond issue, MMT has shown that the regular operations of the monetary system ensures that governments are always financing themselves by issuing money. Yet, this self-financing happens indirectly through regular the implementation of the monetary policy and the liquidity management of the central bank to hit its interest rate target (Tymoigne, 2016, 2014). This confirms the logical temporal sequence that currency monopolists *must* spend or lend its currency into existence before it can be returned to the issuer in taxes or bond sales (Wray, 1998). Self-imposed obligations to issue bonds to match deficits are therefore not a financing operation but a liquidity drain to return the central bank money created by previous spending to avoid the money market interest rate to fall to the central bank's support rate (the interest rate on reserves if the central bank does not issue its own securities). Former Federal Reserve Governor Marriner Eccles confirmed this interpretation of permanent central bank finance of the federal government to the US Congress:

> The fact that they cannot go directly to the Federal Reserve bank to borrow does not mean that they cannot go indirectly to the Federal Reserve bank, for the very reason that there is no limit to the amount that the Federal Reserve System can buy in the market. … Therefore, if the Treasury has to finance a heavy deficit, the Reserve System creates the condition in the money market to enable the borrowing to be done, so that, in effect, the Reserve System indirectly finances the Treasury through the money market, and that is how the interest rates were stabilized as they were during the war, and as they will have to continue to be in the future. So it is an illusion to think that to eliminate or to restrict the direct borrowing privilege reduces the amount of deficit financing. Or that the market controls the interest rate. Neither is true. (Eccles in US House, 1947, p. 8 quoted in Tymoigne 2016, 1329).

MMT is therefore not a policy or reform a government can implement. It is at the core a description of the dynamics and operations of modern monetary systems and the implications for the policy space of governments according to their monetary institutional reality. The MMT framework can also be used in that regard to understand the economy of states with a lesser degree of monetary sovereignty by detecting the prevailing limiting factors. For instance, Ehnts (2016) discusses the Eurozone, where 19 Treasuries depend on a supranational central bank. In contrast to currency issuing governments where central banks *always* pay public expenses, the treasuries in the Eurozone are subject to deficit limits and lack support of the central bank when it comes to solvency. They are therefore currency users and more akin to municipalities than monetarily sovereign governments. However, with the Pandemic Emergency Purchase Programme (PEPP) the ECB has vowed to support the solvency of Eurozone member states as long as necessary. The European Council activated the general escape clause of the Stability and Growth Pact in March 2020 so that 'excessive' public deficits are not punished either. This leaves the national governments in a situation comparable to that of sovereign currency issuers. They can spend whatever they think necessary.

Currency-issuing governments create money through spending and destroy money through taxation. It cannot receive in taxes what it has not yet spent or lent into existence. Taxes do not serve to finance the government but to drive the demand for government money within the state. To avoid punishment for not paying taxes, citizens and companies seek to obtain the government's currency. This tax-led demand enables the government to spend its currency into existence. It can choose to issue bonds after spending to reduce the amount of currency in circulation to establish a risk-free interest rate. Bond issuance should therefore be viewed as an 'interest rate maintenance operation' (Wray, 2004, p. 258) rather than a financing operation. Private banks can issue their own debt certificates (bank deposits), which circulate on par with state-issued money thanks to the institutional reality of public deposit insurance, backing from a lender of last resort and states using banks as intermediaries for tax payments. MMT has thus always incorporated that banks create money when issuing loans, which the mainstream is slowly starting to recognise following numerous central bank confirmations (e.g. McLeay et al., 2014).

Since the government's imposition of tax liabilities creates the idle capacity in the economy, only governments are in a position to achieve and maintain full employment and price stability in the economy. Therefore, MMT advocates the introduction of a job guarantee programme to

ensure employment for anyone able and willing to work. This keeps the otherwise unemployed as an 'employed buffer stock' that can be released when the private sector demand for labour rises. This approach avoids many personal, social and economic ills such as lower criminality, loss of work skills and unemployment stigma that springs from policy based on a 'structural or natural rate of unemployment'. Ultimately, it is both a powerful automatic demand stabilisation scheme, a supply-side improving policy tool and a preventive way to save public resource use on remedying the social ills associated with unemployment (Mitchell, 1998; Tcherneva, 2018).

2.1 A brief history of thought

MMT has formed as a school of economic thought in the early 1990s when Mosler (1995) issued Soft Currency Economics and discovered chartalist insights from his work at Wall Street. Mitchell (1998, 1994) founded the MMT approach with Mosler and has focused on how full employment and price stability can be achieved through sufficient aggregate demand and the job guarantee buffer-stock employment policy. Wray (1998) researched into the history and ontology of money to discover that mainstream economics rested on a dubious theory of money and combined this with the work on financial instability by Minsky and Godley. Kelton, then Bell (1998), examined the operational reality of the US monetary system. Tcherneva (e.g. 2018) has worked to develop the job guarantee proposal and the government's role as price-setter, while Fullwiler (2003, 2006a, 2006b) and Tymoigne (2014, 2016) have developed the understanding of central bank operations and cooperation among monetary and fiscal authorities and the issue of 'debt sustainability'. Kaboub (2017, 2012) has extended the application of MMT to developing countries with less monetary sovereignty. Mitchell et al., (2019) published the first intermediate macroeconomics textbook for educational purpose.

The point of departure for MMT is Mitchell Innes' (1914) credit theory of money, insisting that all money things are debt instruments, and Knapp's (2013 [1905]) state theory of money (or *chartalism*) arguing that the nation's money of account is determined by what the state demands in payment of taxes, fines, tithe and tariffs. This view rejects *metallist* view of money originating as physical things through market exchange in barter economies. Money has for all recorded history been a political phenomenon, rather than a market phenomenon (Henry, 2004; Hudson, 2004; Ingham, 2004). Further, economic anthropological studies conclude that money did not originate from bartering (Humphrey, 1985, p. 48; see also Graeber, 2013). The chartalist theory of money, where payments to the government drives the demand for the country's currency, is corroborated by the monetary and fiscal dynamics in the early US colonies (Grubb, 2018) and in the monetisation of colonies (Forstater, 2005). These historical insights substantiate the chartalist view of the government as issuer, rather than user of the currency. In the age of 'independent' central banks, MMT studies have shown that treasury spending is still accommodated by the central bank's ordinary monetary operations (Fullwiler, 2017; Tymoigne, 2016, 2014; Voldsgaard Ruge, 2018).

MMT is based on the work of J.M. Keynes, A. Lerner, H. Minsky, and many others. In accordance with their work, there is no reason to expect market processes and price adjustments to generate full employment, as it is a matter of the effective demand relative to the available productive capacity. Following Keynes, private investment is a crucial source of oscillating demand given that the private sector operates under radical uncertainty about the future. Only government has the capacity to counter these demand deficiencies resulting in a state of high unemployment. Household saving is viewed as a demand leakage, not a funding mechanism

for investments. Thus, MMT underscores the importance of the state to accommodate the net savings desire of the private sector to avoid Keynes' paradox of thrift, where unmet individual desire to save leads to demand contraction and lower aggregate income and saving.

Minsky further developed Keynes investment theory of the business cycle with a financial theory of investment, outlining the financial considerations firms and lenders face when choosing to finance and invest in long-lived capital equipment under uncertainty. This analysis led to the development of Minsky's financial instability hypothesis, stating that financial capitalism generates destabilising forces from situations of stability due to the spread of 'Ponzi finance', where interest payments cannot be met by the entity's cash flow. Instability is thus endemic to capitalism and an ever-lasting challenge for public policy and regulators (Minsky 1982, 2008 [1986]). This view of endogenous financial instability is notoriously difficult to model satisfyingly, thus prompting MMT economists to look for financial imbalances that will eventually have depressing effects on demand unless addressed by policy.

The methodology used by MMT can be described as a balance sheet approach to macroeconomics (Ehnts, 2019). MMT examines how money is created and destroyed. Balance sheets are the method of choice when discussing microeconomic issues like bank lending, the payment system or government spending. Aggregating individual units leads straight to the sectoral balances approach. A simple mathematical model, adding only little behaviour, can then be used for scenario analysis (Ehnts, 2014). The model is based on macroeconomic accounting and does not arrive at an (macroeconomic) equilibrium through optimization of microeconomic agents. Equilibrium is understood as money flows adding up. Therefore, MMT will not be mapped into the (so-called) New Keynesian approach, incl. DSGE (dynamic stochastic general equilibrium) and HANK (heterogeneous agent New Keynesian) models of the kind that are still prevalent in mainstream economics. The New Keynesian approach is axiomatically based on viewing the economy as an inherently equilibrating system, where sufficient demand and the 'natural rate of unemployment' are assumed to be realised based on relative price adjustments, with ad-hoc frictions added to impose a short-term policy space for the impatient who cannot wait for the adjustment process. The financial sector is usually added as a modifier of exogenous chocks – not an endogenous source of instability. They are essentially still neoclassical supply-side models. While Keynes temporarily succeeded in showing the supply-constrained theory being a 'special case' in need of a *general* theory, after his death mainstream economics gradually flipped the general theory to be a *special* short-run case of the perceived general supply-constrained world in the *long-run*, which ultimately dominates the course of the economy. The profession is slowly bending existing models to arrive at core conclusions of post-Keynesian economics. Unfortunately, it rarely does so with appropriate recognition of the preceding history of thought (Summers and Stanbury, 2019, is a recent exception).

MMT rejects the assumption that relative price changes and/or interest rate adjustments will ensure adequate demand. Fundamental uncertainty will render the economy prone to fluctuations and endogenous instability, as theorised by Minsky (2008 [1986]). In other words, the long run is just a series of short-runs with uncertain demand. From the perspective of MMT, stock-flow consistent (SFC) models are the logical choice if one would develop macroeconomic models. While accounting consistency is also found in neoclassical models, SFC models are distinguished by being demand-led and including a more realistic treatment of

the financial sector (Nikiforos and Zezza, 2017)[3]. The trouble with DSGE models has been well understood for many years and high profile economists have called for them to be abandoned (Buiter, 2009; Romer, 2016; Stiglitz, 2017). In short, DSGE models are consistent, but do not resemble reality and therefore lack explanatory power (Mitchell and Muysken, 2008, 114 f.). Druedahl (p. 16) advises proponents of MMT to change the mainstream view by at "[t]he minimum [formulate] a long-run forecast of [nine macroeconomic] aggregate variables", but we believe that this is not how science works. MMT is a scientific paradigm that can only replace the New Keynesian paradigm, not change it using its own methodology. Rather than a sudden shift based on a crucial experiment or a scientific revolution, "what normally happens is that progressive research programmes replace degenerating ones" (Lakatos, 1978, p. 6). Economics must use methodologies that take radical uncertainty, the institutional reality and non-equilibrium dynamics seriously. The following discussion is therefore a reply to Druedahl's arguments that is based on our balance sheet approach. The goal is to persuade readers that the MMT paradigm is more useful for understanding the economy of the 21st century than the New Keynesian paradigm.

3.0 Druedahl's remarks

Druedahl (2019, 22-24) identifies five issues with MMT from a mainstream perspective:

1. Interest rate management is a "powerful tool" to affect aggregate demand. Therefore, an independent central bank with a dual mandate to ensure low inflation and high employment is a suitable policy setup.

2. "Controlling inflation with e.g. tax policy is problematic". One consideration is the benefit of stable tax rates for planning. Another is "lags and credibility", therefore the distrust in both the ability and willingness of politicians to prevent inflation.

3. The level of public debt to GDP does matter (incl. in 'sustainable scenarios' with higher growth than interest rates) as it can cause crowding-out of private sector investments and thus lower capital accumulation, which causes real interest rates to increase.

4. "A high level of public debt imply [sic] a risk for inflation due to the risk that a government up for election might decide to pay interest payments through printing money instead of by raising taxes or increase the debt even further." This point is thus connected to point no. 2 on lack of credibility.

5. The job guarantee proposal has "many weaknesses". It is not exactly clear where these many weaknesses lie, but Druedahl appears to believe Scandinavian labour market policies with training and monitoring have better individual and macroeconomic impact.

[3] In Denmark, this modelling approach is advanced by economists at Aalborg University (e.g. Randrup Byrialsen and Raza, 2020)

Furthermore, Druedahl claims that the "confusion" over MMT stems from four alleged sources; that much is already mainstream economics, that MMTers use a different vocabulary and that there is a lack of explicit distinction between short/long-run analysis and a lack of mathematical models. In order to cut through this confusion in mainstream departments arising from MMT arguments, Druedahl (Ibid. 14) asks four questions he believes MMT has not provided clear answers to:

1. Do they believe that $r < g$ (interest rate lower than growth rate) is the only relevant scenario?

2. Do they accept that high government debt at full employment can crowd out private capital accumulation increasing the long-run real interest rate *r*?

3. Do they think government debt relative to GDP can be increased forever?

4. Do they accept that high government debt gives an incentive to the sitting government to create surprise inflation to pay it off without raising taxes and that this could result in an inflation risk premium?

In section 4, we will first address the monetary theories underpinning MMT and neoclassical economics, respectively, as this is where the divergence of thought begins. In section 5, we will address question 1 on the ability to control interest rates. In section 6, we address the implications of public debt, including question 2, 3& 4. Section 7 concludes.

4.0 Money

Although Druedahl (2019, 20) avoids the question of the origins of money, as he does "not think it is important for the policy questions of today", we insist on the importance of having a valid theory of what money is and where it comes from as these beliefs shape the economic theories that influence economic research and policy advice.

4.1 Money and neoclassical economics

Neoclassical economics is founded on a non-monetary vision of the economy. As Walsh (2010, 33) states in his intermediate textbook on monetary policy:

> "The neoclassical growth model is a model of a nonmonetary economy, and although goods are exchanged and transactions must be taking place, there is no medium of exchange — that is, no 'money'— that is used to facilitate these transactions".

Money is thus forced into the model afterwards ad hoc, as everybody knows money exists. At the core, the economy has 'real' properties, such as marginal productivities and the interest rate, that are revealed under perfect competition through relative price adjustments and money only serves as oil to make this real system work smoother by reducing transaction costs. The evolution of economics in this direction stems from the metallist theory of money, where money originates in a barter economy (Goodhart, 1998). As Mankiw (2009, 81-83) states in his globally used textbook:

> "To better understand the functions of money, try to imagine an economy without it: a barter economy. In such a world, trade requires the double coincidence of wants—the unlikely happenstance of two people each having a good that the other wants at the right time and place … It is not surprising that some form of commodity money arises to facilitate exchange: people are willing to accept a commodity currency such as gold because it has intrinsic value. The development of fiat money, however, is more perplexing.
>
> What would make people begin to value something that is intrinsically useless? To understand how the evolution from commodity money to fiat money takes place, imagine an economy in which people carry around bags of gold … The government might first get involved in the monetary system to help people reduce transaction costs. … To reduce these costs, the government can mint gold coins of known purity and weight. … The next step is for the government to accept gold from the public in exchange for gold certificates … because the bills are lighter than gold (and gold coins), they are easier to use in transactions. Eventually, no one carries gold around at all, and these gold-backed government bills become the monetary standard. Finally, the gold backing becomes irrelevant. If no one ever bothers to redeem the bills for gold, no one cares if the option is abandoned. As long as everyone continues to accept the paper bills in exchange, they will have value and serve as money. Thus, the system of commodity money evolves into a system of fiat money. Notice that in the end, the use of money in exchange is a social convention: everyone values fiat money because they expect everyone else to value it."

To sum up, money is a market phenomenon. It is not needed for the economy to function, but reduces transactions cost. Governments have infringed upon the natural market domain at some point in history to further reduce market transaction costs. Eventually, fiat money with "no intrinsic value" circulates, as people trust others to accept something worthless in pay. In other words, you will allow yourself to be fooled, if you expect another fool to come along: a greater fool theory of money. Beside this infinite regress argument, the problem with the quasi-historical account is that it is *a*historical:

> "No example of a barter economy, pure and simple, has ever been described, let alone the emergence from it of money; all available ethnography suggests that there never has been such a thing" (Humphrey, 1985, p. 48).

On the contrary, debt and monetary units of account appears at least 2000 years before the first coinage (Graeber, 2013; Wray, 1998). Based on cooperation with archaeologists on Bronze Age Mesopotamia, Hudson (2004, 122) concludes, "Rather than originating with private individuals trucking and bartering, money was created as a medium to denominate and pay obligations to the large public institutions". Consequently, teachers should refuse to teach the barter theory of money to students as empirically or historically grounded. Likewise, economists should be weary of economic models that add money *ad hoc* rather than as a foundational economic institution. Druedahl (p. 20) acknowledges "money might not have grown out of an exchange economy due to the double coincidence of wants", yet he finds that the origin of money "is [not] important for the policy questions of today" and that the barter

theory of money is "helpful in explaining why money is a very productive technology". As money is the most central economic institution of modern economies, neglect of the nature of money opens a wide path for economic reasoning at odds with the dynamics of monetary economies. In the context of our debate, it leads to non-monetary theories of the rate of interest, which are taken to constrain monetarily sovereign governments' ability to conduct sound economic policy.

4.2 Money in Modern Monetary Theory and the consolidated government view

To MMT, money is what it has been for at least 4000 years (as Keynes (1930, 4) put it): A unit of account determined by a central political authority and its corresponding debt instruments demanded in payment. MMT advocates the *consolidated government view* for analytical and pedagogical purposes, where the balance sheets of the central bank and the rest of the state are added together (Tymoigne and Wray, 2015). The money in government's account at the central bank disappears, as it is merely a financial claim on another branch of the state itself. Consequently, money should not be viewed as an asset to the government, but as a special type of debt in addition to the bonds regularly considered the public debt. As Danish central bank governor Lars Rohde has stated about the central bank's relation to the rest of the state: "We are the agent of the state. In this way, one can also consolidate the state's balance and our balance" (Voldsgaard Ruge 2018, 61). This is why Warren Mosler contends that the government at the same time neither has nor has no money. When it spends it simply adds currency to the economy via the banking sector, which the private sector desires for net savings, transactions with each other and tax payments.

Table 1: Non-consolidated government sector

Central bank (CB)		Treasury (TSY)		Domestic private sector (DPS)	
Assets	Liabilities	Assets	Liabilities	Assets	Liabilities
A1: Foreign exchange reserve A2: Other assets	L1: TSY reserves L2: DPS reserves	A1: CB reserves A2: Other assets	L1: DPS Bonds	A1: CB reserves A2: TSY bonds	L1: Net financial wealth

Note: Stylised balance sheets. Inspired by Tymoigne and Wray (2015).

Note the implication for economic analysis of what happens to the public sector balance sheets when analysed as a consolidated sector. Table 1 shows the assets and liabilities of the public finances viewed separately. Here the treasury has an account with reserves at the central bank, which gives occasion to public discourse about the 'public coffers'. Most public discussion about public finance takes place within this partial view of the public sector. In table 2, the two branches of the government are consolidated. What becomes clear from this perspective is that the government is not in possession of its own currency. The treasury account with the reserves effectively does not exist, as it is a claim of one branch of government on another. The nation's currency is not an asset of the government – it is a liability. This underscores why taxes and bonds do not finance government spending; the two operations destroy currency permanently and temporarily, respectively.

And crucially, there is no financial limit on the government's ability to create new liabilities.

Table 2: Consolidated government sector

Government (G)		Domestic private sector (DPS)	
Assets	Liabilities	Assets	Liabilities
~~$A1_{TSY}$: CB reserves~~ A1: Foreign exchange reserve $A2_{CB+TSY}$: Other assets	~~$L1_{CB}$: TSY reserves~~ L1: DPS Bonds L2: DPS reserves	A1: G reserves A2: G bonds	L1: Net financial wealth

As all state money is debt of the state, it must be financial assets to others in the economy. Due to the recurring tax liability, we should view these private sector assets as 'tax credits' that enable later tax payment. These tax credits are definitely not something 'intrinsically worthless', as nothing is certain in life but death and taxes. This is why MMT states that 'taxes drive money'.

Building on Minsky (1986), MMT theorises a *hierarchy of money* of the IOUs ('I-owe-you' or debt instruments) of different actors in the economy stratified by acceptability in payment (Bell [Kelton], 2001). The government's IOU is the most sought after as it settles payment to the state, incl. taxes and purchases of bonds. At lower levels one finds banks, which have unique access to state money through their accounts with the central bank and government guaranteed liabilities. This special position in the monetary system allows banks to issue money because households and corporations access state money via the private banks. Banks therefore create money through the act of lending, while bank debt repayment destroys bank money. Because of the operational reality of this system, MMT rejects the *loanable funds* model of the financial system where money and finance is thought to be exogenously limited. Money is contrarily viewed as *endogenous*. The central bank creates state money whenever the government spends and if private banks desire more state money in order to maintain the interest rate on target (unless it is willing to allow the interest rate to drop to the rate paid on reserves or its own securities such as 'certificates of deposit' issued by the Danish central bank). Banks create bank money when they lend and do not have to seek out funds from lenders (or the central bank) before creating a loan. MMT therefore also rejects the monetarist money multiplier-theories where the central bank-issued base money controls the amount of bank money. Banks are not financially limited, only limited by regulation and profit considerations.

As we will develop below, we believe much of the confusion stems from mainstream economists clinging to the idea of an underlying real, or natural, economy with 'real' properties that can be understood equally well with and without monetary relations. On the contrary, MMT is grounded in theories of monetary production economies rather than money-less barter economies.

Furthermore, the mainstream view has not appreciated the insights of the consolidated government view and that monetarily sovereign governments must necessarily spend money into existence before it can be returned through taxation or bond sales. When Druedahl (2019, 2) defines "the total income of the state" as "the sum of the taxes it receives and the money it 'prints'", he uses a regular mainstream expression that is clearly at odds with the consolidated government view. It is categorically wrong to define the issuance of debt as income, which the Cambridge dictionary defines as "money that is earned from doing work or received from investments" (our highlighting). Income either removes debt or adds assets. Likewise, statements like "If the government increase [sic] the growth rate of money to pay for the deficit then inflation will eventually increase" (Ibid. 13) obscure how government finances work, as governments do not "pay for" a deficit as it only pays by crediting bank accounts in the central bank. Deficits are ex-post results from the spending (money creation) and taxation (money redemption) over an arbitrary period of time (usually one Earth orbit of the Sun) and constitute a statistic that is not known at the time when government actually spends.

Druedahl claims MMT creates confusion by using different terminology, though it would rather help clear up economic discussions if such financially invalid statements were avoided. Yet, his language helps to underpin the Government Budget Constraint (GBC) literature, which further gives the impression that the government is financially constrained by income streams, especially given the claimed uncertainty of future interest rates and causal relations between so-called monetary financing and high public debt.

In sum, MMT is grounded in theories of monetary production economies rather than money-less barter economies. This sets up MMT to arrive at different conclusions than the mainstream regarding the interest rate, the effect of public debt and deficits and what makes effective stabilisation policy. It also explains any different use of vocabulary.

5.0 The interest rate

By exercising regular debt arithmetic, Druedahl shows that if the government debt (bonds) or money outstanding (which also government debt instruments) is growing faster than the growth rate of the economy for infinity, the debt to GDP ratio will be infinitely large. These growth rates can be deflated by price changes to obtain the price-adjusted interest rate r (or 'real' interest rate) and the real GDP growth rate g. The relationship among r and g is of great importance for conventional evaluation of 'debt sustainability' and Druedahl asks:

Q1: Do they believe that $r < g$ (interest rate lower than growth rate) is the only relevant scenario?

5.1 A monetary theory of interest rates

The short answer is no. The nominal interest rate is a policy variable that must necessarily be set by the monopoly issuer of currency. The monetarist experience of targeting the money stock failed miserably, as the central bank must provide reserves at some interest rate to ensure the smooth functioning of the payments system (Fullwiler, 2017). As long as governments let their currencies float, they can decide what interest rate they prefer. This entails two political risks, mainly stemming from pressure from the rentier and capitalist class. Those with many financial

assets have strong incentives to press for higher interest rates to increase their risk-free income. Furthermore, owners of large portfolios of financial capital have incentives to promote fixed exchange rate arrangements to reduce risks of capital losses on foreign investments in domestic terms from exchange rate movements. Also, fixed exchange rate regimes are popular among exporting firms, as it reduces their uncertainty and transaction costs – at potential expense of domestic policy space.[4] Lastly, the axiomatic belief in neoclassical economics on the potency and accuracy of interest rates as a tool for fine-tuning the economy prompts monetary policy makers to cyclically raise interest rates. These scenarios are the results of the political economy and the dominant body of knowledge, and not strictly economic processes.

Longer interest rates on government bonds are generally determined by arbitrage with the short-term rate depending on the expectations of future short-term rates and inflation, while entirely free of default risk (Fullwiler, 2016). These longer risk-free rates of interest can equally be determined by the monetary authority if it pleases, as the Bank of Japan has demonstrated with its 'yield curve control' (Bank of Japan, 2019). Moreover, monetarily sovereign governments do not have to sell bonds with either short or long maturity to fund it itself. If it stops to sell bonds after spending currency into existence, the nominal interest rate in the inter-bank market would fall to zero (unless a rate is paid on reserves). This is why MMT states that *the natural rate of interest is zero* (Forstater and Mosler, 2005). It is post-spending government actions that raise the risk-free rate of interest, upon which other interest rates in the economy are formed based on risk assessment and liquidity preference. This means that monetarily sovereign governments can set the nominal interest rate at zero if they want to avoid public debt dynamics that generate inflation through the interest income channel.

5.2 A non-monetary theory of interest rates

It is certainly not mainstream to believe that low interest rates will lower either economic growth (g) nor prices, as this has been the macroeconomic go-to policy for stimulation since the formation of the New Monetary Consensus in the 1990s (Goodfriend, 2007; Wray, 2007). This framework is neo-Wicksellian as it assumes that inflation is caused by deviation between the so-called (unobservable) "natural rate of interest" that would prevail in equilibrium with flexible prices and the actual interest rate that may lag due to price frictions (Woodford, 2003, p. 51-52). In this framework, central banks are assumed to be potent at managing the economy by using interest rate adjustments to align actual and 'natural' interest rates inflation, when 'so-called' real factors (saving and investment desires) change the natural rate of interest. The effect of rate adjustments are believed to be so powerful and dependable that economists can design mechanic adjustment rules, such as the 'Taylor rule'. This view is perceived to underpin Druedahl's claim that monetary policy is a "powerful tool" for affecting aggregate demand. The inability of monetary policy to spur inflation with even extreme monetary policy configurations (such as negative interest rates that were previously regarded an impossibility) the past decade has spurred a large discussion about the difficulty of aligning the interest rate to the natural rate of interest, which must deductively be concluded to be negative to preserve the framework. This debate is framed within the ideas of the 'zero lower bound' and 'secular stagnation' due to supply side malfunctions (Wray, 2020). While neoclassical economists are ready to double down on the power of interest rates, US Federal Reserve economists ponder why "a large body of empirical research offers mixed evidence, at best, for substantial interest-

[4] In one of the few developed countries with fixed exchange rates, Denmark's peg to the euro leaves decent prospects for continued low interest rates, given the designed inability of political authorities to ensure full employment in the Eurozone (Mitchell, 2015)

rate effects on investment" and based on a survey of CFOs (i.e. rigorous micro foundations) they point to ample cash reserves, the low level of interest rates and the steadiness of hurdle rates (Sharpe and Suarez, 2015).

On one hand, it is obvious that the 'real' rate of interest is just the nominal interest rate subtracted by the prevailing nominal price changes. In this view, one's theory of inflation is crucial for understanding the development of the real rate of interest (as the nominal rate is a policy variable). On the other hand, the neoclassical foundation of the mainstream school of economics urges economists to think of the real interest rate as a property of the capital equipment – its marginal product – as firms will obtain funds from savers, which raises the interest rate until it equals the marginal product of capital. We believe the disagreement between Druedahl (and others in the mainstream) and MMT originates in the mainstream belief that the price-adjusted (or 'real') rate of interest is a 'real' (i.e. non-monetary) phenomenon corresponding to the intrinsic 'marginal product of capital'. As this is theorised as a naturally occurring phenomenon inherent to the properties of the technical conditions and the factor ratio in the economy, the government must necessarily adjust itself to this fact of the markets.

5.3 Aggregating capital

Economics students (and others) are taught the foundational neoclassical theory that the production in society is determined by the production function $Y = F(K,L)$, where Y is production output, L is the quantity of labour and K the quantity of capital. Furthermore:

> "Because the factors of production and the production function together determine the total output of goods and services, they also determine national income" (Mankiw 2009, 49).

> "Competitive, profit-maximizing firms hire labor until the marginal product of labor equals the real wage. Similarly, these firms rent capital until the marginal product of capital equals the real rental price. Therefore, each factor of production is paid its marginal product … The real interest rate adjusts to equilibrate the supply and demand for the economy's output—or, equivalently, to equilibrate the supply of loanable funds (saving) and the demand for loanable funds (investment)" (Ibid. 75).

Obviously, this approach assumes sufficient effective demand to employ all available factors. Their mere availability allows them to "determine the total output". Robinson (1953, p. 81) criticised the production function framework for aggregating what cannot be aggregated during the 'Cambridge Capital Controversy':

> "[the student of economic theory] is instructed to assume all workers alike, and to measure L in man-hours of labour … and then he is hurried on to the next question, in the hope that he will forget to ask in what units C [i.e. K for capital] is measured. Before ever he does ask, he has become a professor, and so sloppy habits of thought are handed on from one generation to the next."

Robinson and Sraffa, two economists located in the British Cambridge, showed that the value of specific capital equipment depends on the uncertain demand for its specific output and that:

> "in reality the state of trade is the dominant influence on investment. The situation which promotes the mechanisation of production is full employment and full order books, that is to say, a scarcity of labour relatively to effective demand, but the equilibrium assumptions do not permit us to say anything about effective demand" (Ibid. 99).

In this view, it is rather the distribution of income, which determines prices rather than prices that determine the distribution of income through marginal productivities inherent to the factors of production. And the distribution of income is an on-going social struggle (Keen, 2001, 136).

The view of interest rates as a technically determined phenomenon is thus a consequence of neoclassical economics' assumption of a (soon, if not yet) prevailing point of equilibrium obtained by relative price-adjustments incl. in the market for loanable funds (by the real interest rate). The assumption of sufficient effective demand was the reason for Keynes describing neoclassical economics as describing 'a special case' within his 'general theory', while warning that advice given on this basis for economies not exhibiting full employment may be counter-productive. To analyse financial capitalism (and not a hypothesised barter economy without long-lived capital equipment) one must integrate the implication of uncertainty about the future, which may cause effective demand to fluctuate with changes in the propensity to consume and the expectations of entrepreneurs. As Robinson (1953, 84) stated: "To abstract from uncertainty means to postulate that no such events occur". As capital equipment cannot be added together in a physical unit due to its heterogeneity, the value summation of this capital equipment depends on the monetary income it is expected to generate during its life span, which is subject to uncertainty and fluctuating demand. In short, the profit rate does not depend on the amount of capital, but, conversely, the measured amount of capital depends on the rate of profit, in the absence of a single physical unit of measurement (Keen 2001, 135 f.). This justifies a deeply sceptical attitude towards quantifying capital, as Sraffa noted: "What is the good of a quantity of capital ... which, since it depends on the rate of interest, cannot be used for its traditional purpose ... to determine the rate of interest[?]" ([1962, p. 479] as quoted in Cohen and Harcourt, 2003, pp. 203–4). Due to the circularity involved in aggregating capital, as the measured amount of capital is both caused by and simultaneously believed to be the consequence of profit rates, Robinson (1953, 81) described the production function as "a powerful instrument of miseducation".

Paul Samuelson from the oppositional Cambridge, Mass. (incl. fellow MIT economist Robert Solow) involved in the 'capital controversy' eventually conceded that Robinson and Sraffa were right (Samuelson, 1966). Cohen and Harcourt (2003, 206) note that the use of production functions became discredited, "until their revival with endogenous growth and real business cycle theories". New Keynesian models build upon the latter tradition.

Nonetheless, the economic discipline failed to take notice and did not move away from the production function foundation and its implications, incl. in regards to the real rate of interest. Like other branches in the post-Keynesian research tradition, MMT builds on the work of Robinson and Sraffa and therefore rejects the notion of capital equipment as both a single physical and monetary unit and as a consequence neither ascribe to it a determining factor over the interest rate.

5.4 The impact of interest rates

The real interest rate is determined by the nominal interest rate policy and the rate of price changes. Not every price change should be viewed as inflation. Rather, inflation should be considered "the continuous rise in the price level, so the price level has to be rising for a number of time periods. A one-off price rise is not an inflationary episode" (Mitchell et al., 2019, p. 255). Prices rise because firms decide to raise prices and they may have various reasons to do so. Diverse supply-side factors may cause prices to rise, such as rising import prices, which induce firms to raise prices to preserve their mark-ups, or exercise of pricing power in certain industries to raise profit margins. From the demand side, inflation occurs when an increase in effective demand cannot be translated into further output due to lack of idle capacity, in other words, in a state of full employment. The existence of bottlenecks can lead to inflation before full employment is reached (or semi-inflation as Keynes termed it). MMT economists advocate for a permanent job guarantee buffer-stock scheme to automatically create jobs for those looking for employment until private sector demand has recovered (rather than crude aggregate demand management).

MMT maintains a context-contingent view on the effects on interest rate changes. A higher interest rate policy may increase the measured inflation by increasing mark-up prices as financing costs rise, while demand can be increased through the interest-income channel on the existing stock of government bonds. Conversely, rising interest rates stress the non-government financial commitments of the system, thus risking instigating a financial crisis. Moreover, interest rate changes reshuffle income among creditors and debtors that are characterised by different propensities to consume out of income. Changes may also induce different spending and investment behaviour, although the MMT maintains these effects are minor in comparison to the state of effective demand. The mentioned effects of interest changes affect the balance sheets and income flows of the entire economy and is therefore a blunt and unpredictable, rather than accurate, tool for steering the economy, despite the possibility of changing it marginally. From the MMT perspective, it was not surprising to see the increasing interest rates set by monetary policy in the 2000s accompanied by increasing demand and inflation culminating in a financial crisis.

So, $r < g$ is the only relevant scenario insofar as the government in power decides to use its policy tool of the interest rate to achieve its public purpose, incl. the prevention of inflation. For monetarily sovereign governments, so-called 'unsustainable public debt' where the debt ratio to GDP goes towards infinity does not imply a higher cost of borrowing and ultimately a risk of default, as is the case for households and corporations. The implication of accelerating deficits would be inflation from the stimulation of private sector income through the interest income channel. However, if governments want to avoid inflation, the rational course of action is to reduce interest rates and stop issuing debt instruments with maturity of more than e.g. 3 months for liquidity management purposes and to facilitate non-bank access to safe assets. Alternatively, it could stop issuing securities and manage the interest rate with the rate it pays on central bank balances, as increased liquidity will push down the interbank rate to the central bank's support rate. Consequently, the preference for low interest rates for preventing inflation should also be the choice of 'independent' central banks with a mandate to prevent inflation in the context of a public sector with a large outstanding debt.

While the real interest rate is a policy variable influenced by price changes, Druedahl argues contrarily that governments must interpret what the interest rate signals about the state of the economy:

> "In many economic models (in particular those with over-lapping generations), r < g is a sign of dynamic inefficiency, where a market failure imply that private capital is over-accumulated, and the social optimum contains less accumulation of private capital. A low interest rate on government bonds is therefore typically not just a sign of low financing costs of public investment, but also a sign of low welfare costs of public investment" (pp. 23).

The divergence of opinion again seems to originate in the belief that the real interest rate is ultimately an inherent property of capital, the theorised marginal productivity of capital, i.e. the benefit gained from adding 'one unit of capital' to the firm (again, recall here the non-existence of physical units of capital). The real interest rate is taken as the 'marginal productivity of capital', since firms are assumed to add capital by borrowing loanable funds to the point where the real interest rate is equal to the marginal product of capital. r<g is taken as a sign that the economy is 'saving' too much consumption for the future in the shape of investments, yet lowering aggregate consumption through time since this capital equipment must be maintained by additional investment at the cost of contemporary consumption (Geerolf, 2018, p. 2).

However, when one understands the economy as demand constrained, money as endogenous, that investment creates saving, the future as fundamentally uncertain and that firms often face economies of scale, r<g takes another meaning. Low real interest rates are primarily a sign that the government has chosen nominal interest rates that happen to be close to the rate of price changes in the economy. Since inflation rates are assessed ex-post while interest rates are set in each moment, central banks cannot set real interest rates. Other interest rates and asset prices fluctuate above the safe policy interest rate based on arbitrage with the policy rate, expectations to future monetary policy (Fullwiler, 2016) and varying degrees of liquidity preference based on speculation about the uncertain future (Wray, 2006). Firm investment is generally constrained by a lack of customers and existing idle capacity (Sraffa, 1926), which are both ameliorated by increasing effective demand. As new investment generally provides more capacity than it injects demand into the economy, a capitalist economy is likely to remain demand-constrained (Wray, 2020, 171).

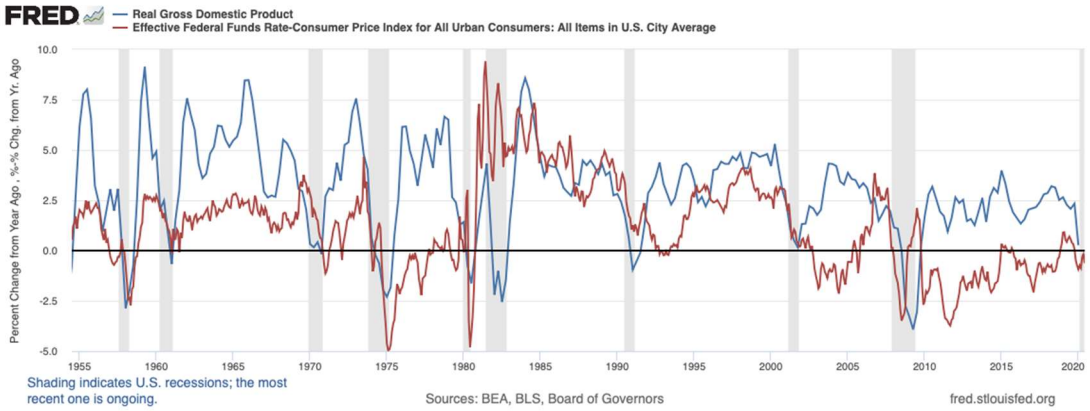
If the government's own policy is perceived as signals from 'the economy' to economic policy-makers, economic policy is certain to be poorly done. r<g means that the government is providing cheap financing conditions while the economy is growing. A preference for having the interest rate at or above the growth rate is at the core not a preference for optimising society's aggregate welfare, but a preference for supporting the relative importance of rentiers in the income distribution.

Importantly, MMT claims that government cannot run out of money regardless whether $r < g$ or vice versa. The government's ability to spend money is a monetary question of institutional operations, not a question of the real economy. The whole notion of 'fiscal space' that discussions around *r* and *g* imply is rejected by MMT in the case of sovereign currency issuers. Ehnts (2016) describes the details for the Eurozone where *r* and *g* do play a role because political rules establish deficit and debt ceilings. The Danish government has wisely preserved monetary sovereignty by abstaining from joining the Euro and negotiating an exemption from the Maastricht Treaty that exempts the Danish state from being fined for not adhering to the deficit ceiling. Yet, the government's fixed exchange rate policy can constrain the Danish

policy space if the sizable balance of payment surpluses of the recent decade shift into persistent deficits or if the Eurozone substantially changes monetary policy. Thus, forecasts of the trajectory of Danish public debt should be grounded in a political economic analysis of the Eurozone.

Looking at US data in chart 1, we find that the growth rate was higher than the real interest rate in the Post-War era until the 1980s, when $r > g$. Since the 1990s, the growth rate has been higher than the real interest except during recessions. The period from 1979-1983 where r>g was a period of vast unemployment leading to both lower consumption and investment than would otherwise have been the case. The implication has therefore been a massive drag on both contemporary and later consumption potential. Therefore, Druedahl's remark quoted above that "r < g is a sign of dynamic inefficiency, where a market failure imply [sic] that private capital is over-accumulated" seems rather peculiar. The two periods of 1950-1968 and 2010 until today both display r < g but have not much in common. Economic growth was much faster in the former period than in the latter, the first being characterised as 'the golden age of capitalism' and the latter as 'secular stagnation'. From an MMT perspective, the stark difference between the two periods can be explained by an institutionalised restrictive demand regime embedded in the fiscal procedures to attain balanced budgets and 'sustainable' public debt levels.

Chart 1: Real GDP and the effective federal funds rate



It is especially interesting that Druedahl implies real interest rates ought to be higher today (to bring about an efficient, or 'golden', intergenerational consumption path) while there is a widespread mainstream understanding that the current macro economic condition is a "long-lasting period of secular stagnation, in which large negative safe interest rates would be needed for demand to equal potential output but monetary policy is constrained by the effective lower bound" (Blanchard, 2019, 1224). This was previously known as the 'Zero Lower Bound' (ZLB) until reality showed that there was no lower bound at zero. Sub-zero interest rates are perfectly compatible with understanding interest rates as a monetary variable rather than a price that clears a market of loanable funds. Accordingly, the Swedish Riksbank targeted and maintained negative interbank market rates at almost 1 percent in the 2010s. In mainstream theory, the lack of further decreases of the interest rate is taken to have created a 'savings glut' as the desired levels of saving and investment are unable to meet and create full 'potential' employment. This corresponds to Druedahl's belief that "the nominal interest rate is a powerful tool" (p. 22) – albeit, a powerful tool that is limited by a lower bound. How does Druedahl square this systemic

problem of too low investment and too high interest rates with the claimed need to reduce private investment and increase interest rates to achieve 'dynamic efficiency' across generations? In mainstream theory, a lower interest rate would exacerbate the alleged private over-investment taking place, yet also increase total output and consumption. Would the Harberger Triangle reduction from higher interest rates and less investment fill the Okun Gap? (Tobin, 1977, p. 17) I.e. would the efficiency gains compensate for the current output losses? To us, this appears like a neoclassical contradiction caused by mistaken assumptions about the nature of the rate of interest and excessive belief in interest rate changes as an accurate tool for macroeconomic adjustment.

As stated above, MMT rejects both these conflicting theories as they are grounded in a non-monetary theory of the interest rate and the (perhaps implicit) loanable funds framework that underpins it. As Bank of England researchers remark about economic models that see banks as intermediaries of loanable funds: "Model economies that are constructed in this way are therefore *entirely fictitious representations of reality*, as such institutions simply do not exist" (Zoltan and Kumhof, 2015, p. 11, emphasis added). Modern economies have endogenous money. Interest rates are determined based on the policy interest rate, arbitrage with the policy rate, expectations about future policy rates and fluctuating liquidity preference (Wray, 2006). Consequently, public investments should not be valued or undertaken based on a perceived signal from the economy through the interest rates. Monetarily sovereign governments face no 'cost of capital' as they create money by spending. They should invest based on a strategy to pursue the public purpose. As long as there are idle resources no or low opportunity costs exist.

In the next section, we will address Druedahl's suggested consequences of public debt on private investment, interest rates and inflation.

6.0 Debt implications

This section will address Druedahl's two questions regarding the economic impact of public deficits. Section 6.1 addresses the suggested crowding-out of private investment, while section 6.2 attends to other possible consequences of public debt.

6.1 Crowding-out of private investments

Druedahl (2019, 14) asks:

> Q2: "Do they accept that high government debt at full employment can crowd out private capital accumulation increasing the long-run real interest rate, *r*?"

The short answer is no. There is no reason to believe the stock of capital affects the prevailing price-adjusted rate of interest. Furthermore, as "high government debt" is a stock of private financial wealth, it is unclear why more wealth should lower investment. It is more proper to say that the private sector's increasing desire to consume may crowd out investment. Yet, increased consumption relative to income would increase the profits in the consumption goods sector and attract investment in new capital equipment, leaving the net result uncertain. Moreover, there is no reason why larger public debt should increase the monetary policy rate. Since the wealth-induced spending carries an inflation risk, it is more likely that the real (price-

adjusted) interest rate will fall as a consequence of larger public debt. Lastly, it is quite difficult to analyse the effect of policy against a baseline scenario of full employment as this has hardly occurred in Western economies since the 1970s. We regard this as a thought experiment for a *special case* rather than analysis of the *general case*, which we inhabit.

In order to discuss how MMT and mainstream economics arrive at such disparate conclusions, we will first lay out the theory behind the crowding-out hypothesis and then engage with the arguments.

6.2 The crowding-out hypothesis and the loanable funds myth

Druedahl (2019, 5) writes:

> "The interest rate, r, and the growth rate, g, are endogenous parameters. Many economic models implies [sic] that r increases as government debt increases because it lowers capital accumulation increasing the marginal productivity of capital. In models with long-run uncertainty it might be very dangerous to accumulate a large debt when there is a small risk of r > g in the future".

It is apparent that this crowding-out argument is built on the basic neoclassical axiom of the production function with income distributed to the productive factors according to their marginal productivity. It is important to note that it is the government's debt and not its use of real resources that is claimed to crowd out private investment. In other words, it is a claim about the impact of public debt and deficits on the financial system. Naturally, if the government decides to purchase a larger share of the economy's output, less productive capacity is available for the private sector's spending desires in the form of consumption and investment. But that is not the financial point Druedahl makes.

Mankiw (2009) describes succinctly how the crowding-out process is supposed to take place through the loanable funds market in the neoclassical framework and arrives at the same conclusion as Druedahl:

> "To induce investment to fall, the interest rate must rise. Hence, the increase in government purchases causes the interest rate to increase and investment to decrease. Government purchases are said to crowd out investment. To grasp the effects of an increase in government purchases, consider the impact on the market for loanable funds. Because the increase in government purchases is not accompanied by an increase in taxes, the government finances the additional spending by borrowing—that is, by reducing public saving" (pp. 69). "[A] budget deficit raises interest rates and crowds out investment; the resulting reduction in the capital stock is part of the burden of the national debt on future generations" (pp. 231).

It is thus a foundational axiom of neoclassical economics to assume that the real interest rate adjusts to equilibrate the supply and demand of loanable funds. Loanable funds are supplied by household savings and demand for loanable funds is determined by investing firms. As saving is always equal to investment per accounting identity (S=I), the adjustment of the real interest

rate is theorised as the price adjustment that ensures this to hold up. Since S is always equal to I, the interest rate must always be adjusting the loanable funds, so the line of thought goes. If the rate is too low, households will consume instead of providing finance to investing corporations. According to this view, if the interest rate is permanently low then why should households forego consumption today and how would corporations then get hold of finance?

This underpins the view that government debt and deficits will drain the limited pool of loanable funds that firms also use. The reduced supply of loanable funds therefore raises the cost of funds (i.e. the interest rate), which in turn leads to fewer investments. The trouble with this internally consistent model is that it is not reflecting how the banking sector works, as further elaborated below (Ryan-Collins et al., 2017; Wray, 1990).

Druedahl reiterates the view that the government must allow the real interest rate to be "consistent with the return on private investment":

> "Wray seems to assume that the nominal interest rate is kept fixed implying that the real interest rate is falling permanently. In all economic models I know of this is not possible because it would not be consistent with the return on private investment. Accumulating debt normally implies a higher real interest rate due to reduced capital accumulation" (Ibid. 10).

The absence of mainstream models allowing low real interest rates and continued private investment (contrary to "reduced capital accumulation") is obviously not an argument against its possibility in reality. Economic models need to reflect reality, not vice versa. In the same vein, Sharpe (2013) finds that monetary sovereignty has been a neglected institutional variable in economic theory, as public debt and deficits only raise interest rates in monetarily non-sovereign countries, such as in the Eurozone. Even there, deficits do not automatically increase interest rates and yields, as the European Central Bank (ECB) can act as a backstop to Eurozone governments (Ehnts 2016, 200). The ECB established its Pandemic Emergency Purchase Programme (PEPP) in March 2020. Yields have fallen since then, with spreads becoming narrower instead of wider even though deficits of countries like Italy and Spain are predicted to be much higher than those of, say, Germany. We need economic theory to reflect institutional implications rather than theoretical deductions based on the impossible aggregation of capital in one physical unit.

The crowding-out-view is led astray by the idea that the interest rate is the mechanism that persuades households to save and supply loanable funds to the firms through banks that allocate the savings to borrowers. The interest rate is believed to maintain the equality between saving and investment (S=I), which is an accounting fact. Yet, how the loanable funds model has survived is perplexing, as one of Keynes' (2018 [1936], 56) primary contributions was to show that the parity of S=I is not caused by a market-driven adjustment of the interest rate but that "whilst, therefore, the amount of saving is an outcome of the collective behaviour of individual consumers and the amount of investment of the collective behaviour of individual entrepreneurs, these two amounts are necessarily equal, since each of them is equal to the excess of income over consumption". Or, as Moore (2006, 156) put it: "Saving is the Accounting Record of Investment".

In addition, the loanable funds model, and the implied crowding-out of private investment, has been thoroughly discredited by the Bank of England's recent publications. The 2014 publication "Money Creation in the Modern Economy" (McLeay et al. 2014) confirmed the basic post-Keynesian conclusion, that money is endogenous as banks create new money as they make loans, while bank money is destroyed when loans are repaid. This was also confirmed by the Danish National Bank in 2014 (Bang-Andersen et al., 2014). Banks are constrained by the availability of creditworthy borrowers and regulations, not a theorised pool of national savings. Furthermore, the money multiplier model in textbooks (e.g. Mankiw 2009, ch. 4) is invalid, as changes in the amount of base money do not cause changes in the amount of bank money (or broad money). Rather, endogenous expansion of the amount of broad money in the banking system raises demand for base money, which the central bank must supply in order to maintain its desired interest rate (unless willing to leave excess reserves in the system) (Fullwiler, 2017). The implications for economic theory was further explored by the Bank of England in the 2015 paper "Banks are not intermediaries of loanable funds – and why this matters" (Zoltan and Kumhof, 2015):

> "In the [intermediation of loanable funds] model, bank loans represent the intermediation of real savings, or loanable funds, between non-bank savers and non-bank borrowers. But in the real world, the key function of banks is the provision of financing, or the creation of new monetary purchasing power through loans, for a single agent that is both borrower and depositor. The bank therefore creates its own funding, deposits, in the act of lending, in a transaction that involves no intermediation whatsoever … Furthermore, if the loan is for physical investment purposes, this new lending and money is what triggers investment and therefore, by the national accounts identity of saving and investment (for closed economies), saving. *Saving is therefore a consequence, not a cause, of such lending. Saving does not finance investment, financing does*" (our emphasis).

In conclusion, money in a monetarily sovereign country is endogenous. Banks create new money balances for firms' investment if they can present a profitable business case. This means that finance is not scarce, but creditworthy borrowers are. Furthermore, money is endogenously created when governments spend and subsequently removed by taxation. Bonds are issued subsequently to assist the central bank in managing the liquidity resulting from deficit spending. These are not trivial ontological facts. The elastic nature of the financial system means that government debt issuance cannot constrain the private sector's ability to purchase capital equipment. Governments can claim a larger share of the *physical* productive capacity through its spending decisions, thus leaving less for the private sector, but this is not a financial mode of crowding out, as proposed by Druedahl. The Danish Central Bank governor Lars Rohde supports the rejection of financial crowding out (Voldsgaard Ruge (2018, 43). Conversely, if there is idle capacity in the economy, larger government spending may indeed increase rather than reduce private spending by boosting effective demand.

At odds with crowding out theory, the public debt provides the private sector with safe assets, which it can put up for collateral to obtain new funds for investment. In the real world where defaults cannot be assumed away, the availability of safe assets for collateral is an important issue. This is also why governments decide to continue bond issuance despite running fiscal surpluses (Voldsgaard Ruge, 2018, pp. 48–49). Furthermore, public debt contributed the high

degree of post-war financial stability due to the considerable stock of safe assets emitted by governments during WWII, which left the private sector with low gearing and assets that could be put as collateral for capital investment (Papadimitriou and Wray, 1998, p. 205). The possession of public debt made them creditworthy borrowers and crucial in 'crowding in' private investment, paving the way for the post-war 'golden age of capitalism'.

In case it is modelled or observed that central banks raise the interest rate when production gaps are closed by increasing demand, this is clearly not a result of crowding out but part of monetary policy, which seeks to limit inflation (although the effectiveness should not be taken for granted). It is therefore a political outcome, not an economic one.

Yet, Druedahl (2019, 5) does ascribe "some control" to governments over the real interest rate through supply-side policy:

> Economic policy might also affect both r and g through affecting incentives (social security, taxation, market design etc.) or investment (infrastructure, education, research etc.). The government thus have some control over the long-run real interest rate, but it can not choose it independently of the debt level it chooses. If it chooses a high debt level implying a high interest rate above the growth rate, it will be forced to run primary surpluses on average to avoid an exploding debt ratio".

Consequently, in this view, the presence of public debt adds to the arguments for fiscal tightening, although often combined with lower of tax rates on top and capital income, as this is taken to increase growth through supply-side effects. This has been the mantra of economic policy in Western states since the 1980s when aggregate demand policy was shunned for supply side considerations.

6.3 Crowding out through the stock market

Druedahl (2019, 23) ascribes much power to the stock markets in setting the real interest rate, as rates supposedly must "be consistent with the return on private investment". He continues:

> "The level of public debt relative to GDP does matter even in the long-run, also if $r < g$. If the government sells bonds, some households must be the ultimate purchasers (though perhaps through e.g [sic] pension or investment funds). A no arbitrage argument implies that the interest rate on these bonds must equal the risk-adjusted return on stocks. More importantly, when the households save in government bonds, it can crowd out their saving in stocks (again, perhaps indirectly hold [sic] through pension or investment funds). Lower capital accumulation, [sic] will naturally lower private sector production and normally increase the real interest rate (because capital becomes more scarce) and lower the wage rate (because labor becomes less productive)".

In the passage above, the purchase of government bonds is taken as draining funds otherwise available to private corporations, which in turn will "lower capital accumulation" and then the

wage rate. Household purchases of stocks seem to be taken as a source of funds for corporate investment. As long as the purchase is not a part of a stock emission, these purchases amount to portfolio reallocations where previous holders of stocks exchange them for the monetary assets of the new owner. This does not provide corporations with purchasing power, although the reallocation of stocks might affect the measured value of the floating stocks.

Do monetarily sovereign governments need to align themselves with the prevailing rates of returns to get their bonds sold and thus finance their spending? If monetarily sovereign governments decide to not indirectly control the yield on their bonds by private actors' arbitrage with the short-term policy interest rate, it can determine the entire yield curve as it is the monopoly issuer of both the bonds and the monetary instruments that are being promised. Japan is currently doing this with the Bank of Japan's 'yield curve control policy' (Bank of Japan 2019). If done on a quantity rather than explicit price principle, such quantitative easing (QE) policies reach similar outcomes, when central banks conduct asset swaps to lower the long-term risk-free interest rates. As the Bank of England maintains, this has purposefully led to rising asset prices to stimulate spending as a wealth effect (McLeay, et al., 2014, p. 1):

> "QE initially increases the amount of bank deposits those companies hold (in place of the assets they sell). Those companies will then wish to rebalance their portfolios of assets by buying higher-yielding assets, raising the price of those assets and stimulating spending in the economy"

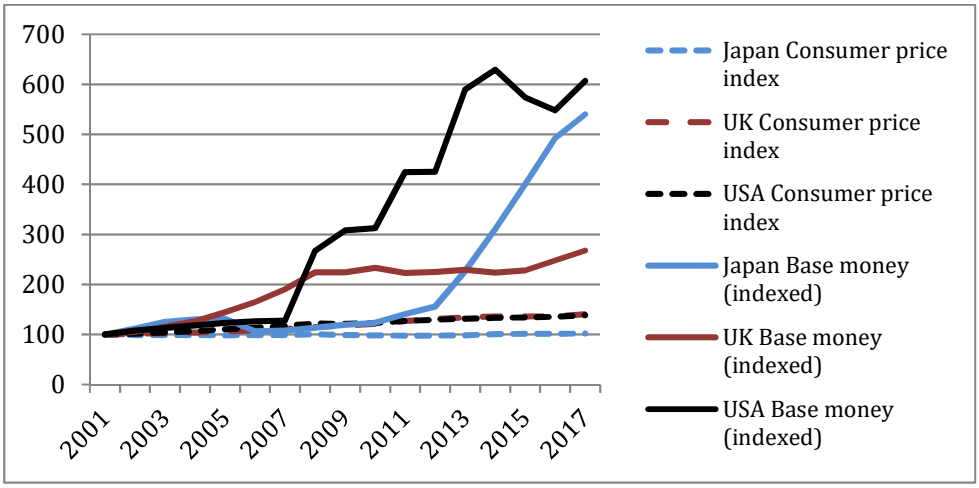
Consequently, it is more reasonable to think of stock prices adjusting to the availability of the government's debt that make up the non-government sector's net financial assets and the government's willingness to provide risk-free interest on these assets. The less risk-free interest income to obtain from the government, the more attractive is stock ownership. Ultimately, monetarily sovereign governments may decide not to issue other liabilities than monetary instruments. Government bonds are monetary policy instruments issued to withdraw the liquidity that the spending adds to the interbank-market, although this is not the only way to control the interest rate. If the government stops the issuance of securities, the interest rate in the money market will drop to the central bank's rate on central bank balances, which will then be the main monetary policy lever. As this is the outcome of *absence* of government intervention, Mosler and Forstater (2005) argue that the natural interest rate is *zero*. This also sheds light on why Druedahl (2019, 13) is mistaken when he states that:

> "When the government chooses the target for the nominal interest rate it basically ties down the amount of money which should exist. If the government then runs a deficit (in excess of the seigniorage income) it needs to issue government bonds."

This is mistaken as governments could just stop issuing bonds to absorb the liquidity they provide through spending. This would cause the interest rate to fall to the support rate and nothing else in regards to the public finances. This is indeed the result of quantitative easing policies (QE) where central banks retire treasury debt and leave excess reserves in the system. The same result would prevail if governments spent without issuing bonds in the process. The implication of a liquidity injection to the interbank market when liquidity demand is satisfied in the absence of a liquidity drain is excess liquidity, which pushes interest rates towards the floor rate (Fullwiler, 2016).

Druedahl (Ibid., 4) comments that he has "never seen a model where continued growth of base money in excess of nominal GDP did not result in inflation". This is once again a backwards way of arguing; models need to reflect the real world. And what is the real world trying to tell us about the influence of base money (i.e. central bank money) growth and inflation?

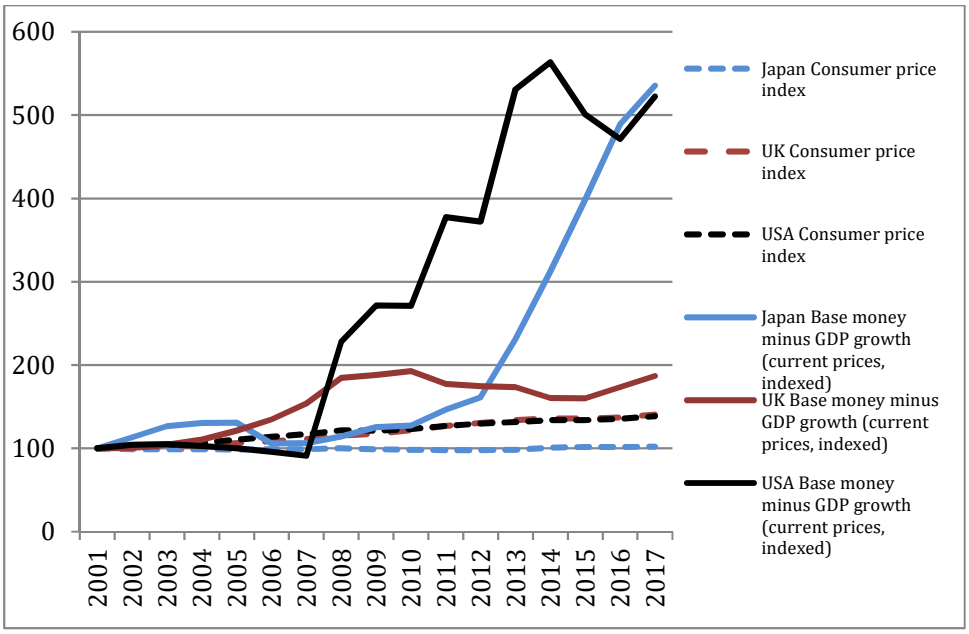
Chart 2: Base money & price index



Note: Index 100 = 2001. Source: IMF (International Financial Statistics & World Economic Outlook)

Chart 3 reflects monetary consequences of the adoption of quantitative easing policy in USA, Japan and the United Kingdom. By swapping government bonds (and other securities) for base money, the growth of base money has dramatically increased, especially in USA and Japan, with no consumer price increases in proportion to the monetary expansion. This is unsurprising from an MMT perspective, since banks do not lend reserves to the real economy; they create new bank money by advancing loans. Banks use reserves to make payments to banks and the government (and abide regulation in the case of reserve requirements). The absence of exploding inflation is supporting evidence of MMT and may have been the most positive outcome of the QE crisis response. Chart 3 shows that inflation is neither correlating with base money growth when GDP growth is subtracted to show "growth of base money in excess of nominal GDP". The pattern remains intact and so does the need for theory and models to explain on a non-ad hoc basis why such a dramatic build-up of reserves has not caused inflation to jolt. It is basic MMT that spending (both public and private) carries an inflation risk based on the availability of idle resources to purchase. There is nothing intrinsic to the existence of money that raises consumer prices.

Chart 3: Base money minus GDP and price index



Note: Index 100 = 2001. Source: IMF (International Financial Statistics & World Economic Outlook)

6.4 Public debt dynamics

Druedahl asks:

Q3: "Do they think government debt relative to GDP can be increased forever?"

In short, no, because of the private sector's eventual reactions to the government deficits that will tend to stabilise or even reduce the debt ratio, although a monetarily sovereign government would never non-voluntarily miss a payment in its own currency if the debt were to increase perpetually. Indeed, Japan's experience with ever-increasing public debt signifies that the debt-to-GDP ratio in and of itself is not unsustainable or generating a negative market judgement from 'bond vigilantes' that the state must abide. The point is that ever-increasing debt levels are unlikely due to dynamic processes in capitalist economies, although Japanese macro-policies have hindered these adjustments e.g. through premature fiscal tightening (Wray, 2020). However, since the interest rate on public debt is a policy variable to monetarily sovereign governments, "forever" increasing government debt to GDP must be understood as a policy preference – not a malign outcome. A central bank that targets low inflation would therefore lower its interest rate as it has dominating influence on the long-term rate through arbitrage (Fullwiler, 2016).

Wray (2015, p. 65-66) rejects that it is wise to extrapolate current fiscal deficits permanently into the future as capitalism is a dynamic system. Wray explains what is likely to happen in the

dynamic reality we inhabit in case of sustained deficits: they are reduced or even disappear. He lays out several adjustments that are plausible to occur to alter the debt trajectory.

Druedahl (p. 10) takes issue with Wray's introduction of second-order consequences that may alter the claimed 'unsustainable' course of events. Druedahl states that if that is the case, "we are no longer studying the effect of a persistent deficit, but only a temporary deficit". It is difficult to understand the point of Druedahl's insistence of permanent deficits as an assumed fixed parameter rather than an initial scenario from which it is interesting to analyse the economic consequences. Again, this underscores the epistemic divide resulting from understanding capitalist economies as either demand or supply constrained.

6.4.1 More spending, growth and inflation

Wray (2015, p. 65) points out that the obvious consequence of too large deficits over too long a period is inflation, not lack of confidence in the government's ability to finance its spending. The constraint on public finances is the availability of productive capacity to absorb increased spending. If deficits continue to inject more net financial assets to the private sector than it desires to net save, it will try to spend more and push up prices, as output cannot expand more in this state. This will cause demand-pull inflation, which will tend to increase tax income and also lower the real (price-adjusted) interest rate, possibly into negative territory. This will "reverse the dynamics so that the deficit ratio declines and the debt ratio stops growing".
Druedahl (p. 10) accepts that for tax systems that are sensitive to inflation (such as with nominal tax brackets), real taxation can change with increased spending, but states "we are no longer studying the effect of a persistent deficit, but only a temporary deficit". Indeed, this seems to be the most relevant issue in the real world. An eternal fixed deficit, on the other hand, a thought experiment. Druedahl is also critical of the idea that the interest rate can remain fixed in the presence of public deficits. He argues that Wray must assume "the real interest rate is falling permanently", which appears to assume permanently accelerating inflation, which we do not find warranted. The possibility of increasing public debt and negative real interest rates are rejected with implied loanable funds reasoning:

> "In all economic models I know of this is not possible because it would not be consistent with the return on private investment. Accumulating debt normally implies a higher real interest rate due to reduced capital accumulation".

As explained above, government deficits add liquid financial assets to the private sector. Without offsetting actions, this decreases interest rates (to the central bank support rate). If bonds are sold to absorb the liquidity, the interest rate is unchanged. If one, explicitly or implicitly, reasons based on a loanable funds framework, exact opposite conclusions are reached (as in the quote above). However, with an endogenous monetary system, more public debt is conducive to more spending, incl. fixed investment.

Wray (2015, 65-66) explains the changing spending patterns with the wealth effect of public deficits on private spending:

> "If government continually spends more than its income, it will be adding net wealth to the private sector, and its interest payments will add to private sector

> income… In other words, government debt is private wealth and as private wealth grows without limit this will eventually cause spending to rise relative to private sector income, reducing government deficits as tax revenues rise".

However, Druedahl (p. 11) takes issue with the accounting:

> "Government debt need not increase the net wealth of the private sector. If the private sector buys government bonds instead of investing in capital the net worth is unchanged, and income is unchanged because the interest income on the government bonds just replaces the return the private sector would have earned on its real investment."

This is seemingly a stock-flow inconsistent proposition, since the deficit adds to the assets of the private sector, while it is left unexplained why the reception of a financial asset should deter an otherwise profitable investment. Only insofar as the public debt is created on the occasion of sale of non-government assets to the government (e.g. the government's purchase of a building), the net wealth gained to the private sector is zero. However, any deficits unmatched by asset sales accumulate as net wealth of the private sector. This is an accounting fact[5]. Furthermore, as argued above, purchasing government bonds is not an either-or decision for private sector vis-à-vis investment in capital equipment. As money is endogenous in modern economies, there is no financial reason to believe that when a bank has its central bank account debited in a purchase of a government bond it will be less able to extend in its balance sheet with a loan to a firm. On the contrary, since government deficits provide net financial assets to the private sector, investment becomes more likely due to the increased portfolio of safe liquid assets and the increasing demand from the wealth effect. The bonds (if issued) can either be sold or leveraged to finance investment. In case non-banks prefer not to purchase government bonds, it will still be attractive for banks to swap their excess reserve balances for bonds with a slighter higher yield than the return on reserves. Again, bond sales are for interest rate maintenance in monetarily sovereign states and serve to alter the composition of the non-government sector's existing net financial assets.

6.4.2 Austerity

Wray further argues that austerity policy is unlikely to improve a government's debt/income-ratio as government spending contributes to national income and less spending thus lowers income, while its debt may be unchanged due to less taxable income. It is basic macroeconomics that spending determines income, yet to Druedahl "[t]his does not make sense. Naturally, there will be no problem with a persistent deficit if the fiscal policy is changed such that there is no persistent deficit." This misses Wray's point that governments cannot determine their own balance and debt levels, as they are dependent on the spending and saving decisions of the private sector. If governments try to achieve a surplus that is inconsistent with the private sector's desire to net save, a paradox of thrift will eventually play out that will lower income and thus tax revenue and raise social expenses, thus restoring the deficits. Of course, single countries can achieve both stable demand and government surpluses if foreigners are willing to spend and net import in accordance with private savings desires, but this is obviously not a

[5] The domestic private sector may subsequently choose to transfer some of this financial wealth to foreigners in the case of an open economy.

global option. Nonetheless, such mercantilist strategies should be questioned since exports are real costs and imports are real benefits.

6.4.3 Growth rate effect

Wray argues that government deficits may increase the growth rate of the economy and thus alter the relation between r and g. Druedahl contends that mainstream economists accept this although they are at the same time "sceptical that this is possible in general, except for specific investment projects" (p. 12). While specific investment projects may be beneficial, the point is macroeconomic. First of all, there may be idle capacity in the economy which, if activated, can temporarily raise GDP growth. More importantly, under the influence of uncertainty, increasing demand will increase capacity utilisation of firms and spur new real investments that expand capacity further and improve productivity. In contrast to neoclassical growth models where productivity is predominantly a supply-side phenomenon, MMT embraces the ever-important role of effective demand in causing corporations to invest and innovate.

6.4.4 Political economy

Finally, Druedahl considers the politics of public debt by asking:

> Q4: "Do they accept that high government debt gives an incentive to the sitting government to create surprise inflation to pay it off without raising taxes and that this could result in an inflation risk premium?"

Druedahl (p. 23) is basing his argument on government spending being financed by either taxes, bond issuance or the fear-stoking third option 'money printing':

> "A high level of public debt imply a risk for inflation due to the risk that a government up for election might decide to pay interest payments through printing money instead of by raising taxes or increase the debt even further".

Again, this is mistaken an ex-post accounting identity (all government spending that is not taxed away accumulates in the non-government sector as either bonds or central bank reserves) with financing – which is always monetary for monetarily sovereign governments. MMT rejects that politicians should be 'tempted' to cause inflation to 'pay off the debt' as monetarily sovereign governments face no need to reduce the outstanding debt. MMT incorporates Lerner's functional finance (Lerner, 1943), which stipulates the government should use fiscal policy to achieve full employment and price stability and not worry about the public debt. MMT advocates reinforcing functional finance with a job guarantee to efficiently target the spending at the unemployed, thus deploying the right size and distribution of fiscal support for the economy. As the public debt is not a financial burden on the monopoly issuer of the currency, this does not give politicians any incentive to cause inflation. More likely, as citizens despise the hassle of inflation, politicians face electoral incentives to avoid inflation. If one assumes that government spending is financed by taxes and bond sales and that the interest rate might increase beyond the control of the government, one might see the incentive for politicians to cause inflation. However, when one rejects these notions based on the operational reality of the modern monetary systems, the logic makes less sense.

7.0 Conclusion

In this paper, we have dealt with an academic critique of MMT by Druedahl (2019). It has been argued that the observed confusion about MMT stems not so much from the lack of math or long run models as from differences in ontology, namely regarding the understandings of the monetary system and whether demand or supply is the constraining factor in the economy. Mainstream economics is founded on neoclassical axioms of production functions and markets for loanable funds that do not reflect the institutional reality in modern financial economies. It was shown how this is rooted in a misspecification of the nature of money, which paves the way for a non-monetary understanding of the rate of interest and hypothesised crowding-out effects of public debt on private investment that do not transpire in monetarily sovereign economies.

This view was contrasted with the post-Keynesian contributions of Robinson, Sraffa and Minsky that are incorporated into macroeconomic framework of MMT. This provides a realistic framework for understanding economics with heterogeneous capital, endogenous money, radical uncertainty, financial instability and different classes. Crucially for this paper, the framework in combination with institutional studies of how governments spend enable MMT to reject the crowding-out hypothesis as a product of non-monetary reasoning, ultimately emanating from the core neoclassical belief in the workings of a money-less barter economy. We conjecture that the lack of common understanding Druedahl points to is a product of the dominance of neoclassical economics in the academic sphere, which crowds out other theoretical perspectives. While we think the neoclassical paradigm is lost, with MMT economics regains a powerful paradigm that connects to the older institutional and Keynesian economic schools of thought and thus provide us with a map to understand the dynamics of modern economies.

Economists that aspire to realise full employment and price stability should assist politicians in understanding that the government is not financially constrained and help them activating idle productive capacity to improve the welfare and capital development of the country (in the widest sense). While Druedahl rightly points to certain benefits of the training opportunities in active labour market policies, these activities do not provide demand for labour (besides the programme staff). A job guarantee to anybody willing and able to work would allow all currently unemployed to provide a useful contribution to their local community (Tcherneva, 2018). Furthermore, this employed buffer-stock approach would make the unemployed more employable to firms as involuntary periods of unemployment are highly stigmatising in the labour market and cause numerous social ills (Tcherneva, 2017). Job guarantee employment would therefore benefit the individual as well the macro economy by preserving and improving the employability of the work force.

MMT as a paradigm shifts the attention back to the way money moves resources in a non-neutral manner. It highlights the ability of the state to provision itself by routinely using its monopoly over money creation. This puts the state at the core of the economic system and the public finances at the heart of macroeconomic analysis. MMT brings democracy as a mode of decision-making back into economics with its focus on the concept of public purpose (Ehnts and Höfgen 2020). By shining a light on how the monetary system operates, MMT enables citizens to shed nonsensical debt and deficit rules that have caused Western democracies to

suffer vastly from insufficient demand and call for monetary arrangements with larger economic policy space in countries that have voluntarily reduced their monetary sovereignty, such as the Eurozone. The absence of financial constraint on monetarily sovereign governments in their own currency does not necessitate a big public sector but removes the question of 'affordability' from the consideration and shows that unemployment is a policy choice.
It is all about political priorities.

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