

Watts, Martin J.; Juniper, James

## Article

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## The contribution of MMT to modern macroeconomics

Martin Watts

Emeritus Professor of Economics, Newcastle Business School and Research Associate, Centre of Full Employment and Equity, The University of Newcastle, NSW, Australia

James Juniper

Honorary Lecturer (Economics), Newcastle Business School and Research Associate, Centre of Full Employment and Equity, The University of Newcastle, NSW, Australia

*This paper draws on nearly 25 years of modern monetary theory (MMT) scholarship to provide an assessment of the critique of MMT by Drumetz/Pfister in their 2021 working paper. The present paper commences with a review of methodology. It then pursues a thematic approach, initially exploring the issue of currency sovereignty and the nature of modern monetary systems before addressing the specific criticisms that Drumetz/Pfister have raised about MMT's approach to monetary and fiscal policy.*

**Keywords:** *institutional practice, fiat currency, monetary policy, fiscal policy*

**JEL codes:** B22, E42, E52, E62

### 1 INTRODUCTION

The corpus of theoretical, institutional and empirical work in macroeconomics known as modern monetary theory (MMT) draws on a wide range of theoretical perspectives, including Chartalism (see, *inter alia*, Knapp 1924; Keynes 1930; Ingham 2019), Marx's theory of crisis (Marx 1981) which influenced the development of the Keynes principle of effective demand (Keynes 1936), and in turn functional finance principles (Lerner 1943) and post-Keynesian monetary theory (including Moore 1988; Lavoie 2020). MMT advocates mainly examine the operation of modern monetary systems which adopt a fiat currency.

Following the endorsement of MMT by New York Democrat Alexandria Ocasio-Cortez in early 2019 and the subsequent Republican motions in the US Senate criticising MMT principles, MMT advocates have been subject to a series of hostile critiques from a range of theoretical perspectives, including orthodoxy and Marxism. Typically, it is claimed that what is correct in MMT writing is already known and what is new is incorrect (Buiter/Mann 2019).

Drumetz/Pfister (2021a), hereafter DP (2021a), and the published article (Drumetz/Pfister 2021b) are characteristic of these critics' *modus operandi*.<sup>1</sup> Claims are made following a very limited reading of MMT publications, which are mainly working papers,

1. Our paper refers to DP (2021a), the longer paper, which enables a more thorough exegesis.

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despite over 25 years of scholarly work in refereed journals, and the publication of the textbook by Mitchell et al. (2019). These claims are often buttressed by reference to extant, but problematic, critiques of MMT. Also, numerous unsubstantiated assertions are made.

In this response, we commence with a discussion of methodology in Section 2, followed in Section 3 by the central issue of currency sovereignty and in Section 4 by the common characteristics of modern monetary systems. MMT principles are outlined in Sections 5 and 6, and criticisms put forward by DP (2021a) are assessed based on a thematic approach. Section 7 provides a brief conclusion.

## 2 METHODOLOGY

Ehnts (2022: 3) is critical of DP (2021a: ii) for starting off with a series of claims as to the implications of MMT ‘theory’ for policy prescription, rather than by first assessing key propositions of MMT. MMT is a lens for understanding the operations of a modern monetary economy. Certainly this understanding informs the feasibility of different macroeconomic policy options, but recommended policies will reflect the values of the researcher.

An appropriate starting point for understanding MMT principles is by reference to institutional practice, that is, the operations of the central bank and Treasury, in particular, within a modern monetary economy. Here we are referring to what these institutions claim to do,<sup>2</sup> as opposed to arcane theories of how they operate which are still found in textbooks (Juniper et al. 2021). These practices are informed by the illustrative use of balance sheets (Ehnts 2022).

MMT is often lambasted for the absence of a formal mathematical model (Palley 2015; DP 2021a: 15), yet critics often rely on problematic assertions by way of rebuttal of MMT propositions (see Palley 2020; DP 2021a) without providing clear guidance as to the theoretical framework being employed.<sup>3</sup> Formal modelling is just one way of conveying economic ideas and certainly important insights can be gained, but caution needs to be exercised. For example, Franke (2019) shows that a model represented by the integration of two stable sub-models may be unstable. There is the danger that by manipulating deterministic models, the practical difficulties of achieving desired policy outcomes can be underestimated (Keynes 1936: 297).

Wray (2020) cites works that he co-authored with Godley emphasising the compatibility of MMT’s balance-sheet approach with the stock–flow consistent (SFC) modelling framework presented in Godley/Lavoie (2007). An early example of MMT–SFC modelling is Godin (2012) and later Carnevali/Deleidi (2020). Both papers examine the inflationary consequences of the implementation of a job guarantee (JG), although the crucial role of spatial ‘bottlenecks’ is difficult to accommodate.

‘Ordinary discourse’ can also convey economic concepts and theories. MMT advocates take a ‘horses for courses’ approach to the way that both institutional practice and behavioural theory are expressed.

2. Central banks are now more forthcoming about how they behave; see, for example, the Bank of England (Joyce/Tong 2012; McLeay et al. 2014; Jakab/Kumhof 2015), and also the writings of the former European Central Bank (ECB) Vice-President Constancio (2011). Ehnts (2022) also cites German central bankers.

3. Alternatively ad hoc assumptions are formalised but are not substantiated (see Palley 2015; and discussion in Section 6.3 in the present paper).

Finally, while MMT depicts in general terms the type of monetary system that is characteristic of most developed economies in the twenty-first century, DP (2021a: 1–4 and 10–13) resort to reproducing the critiques of Knapp (1923) and Lerner (1943), when their propositions about Chartalism and functional finance, respectively, were first developed, rather than assessing their appropriateness in the development of key MMT propositions.

### 3 CURRENCY SOVEREIGNTY

Adopting Chartalist principles, MMT advocates argue that the state ordains the money of account and that the requirement to pay taxes in this fiat currency gives it value and acceptability and that network efficiency can explain why it is used for private-sector transactions (DP 2021a: 5).

Davidson (2002: 75) acknowledges that '[l]egal tender laws determine what will be acceptable, as deemed by the courts, in the discharge of contractual obligations' (Juniper et al. 2014/2015: 289), but, of course, not all countries are subject to legal tender laws so the acceptability of a currency is not predicated on their existence (Wray 2003; Juniper et al. 2014/2015).

DP (2021a: 3) recognise that integral to Chartalism is the notion that if the state did not accept the fiat currency in the payment of taxes, it would ruin the credibility of the legal currency. DP (2021a: 4) also argue correctly that parity between commercial-bank and central-bank (that is, state) money requires that banks keep sound balance sheets. Thus, bank regulation could be viewed as the *quid pro quo* for the state's acceptance of deposit money and the central bank's role as lender of last resort.

Currency competition is discussed widely by MMT authors, including Mitchell et al. (2019: 136) who note that even in the presence of legal tender laws there have been instances when the designated currency has not been accepted in private transactions (cf. DP 2021a: 3).

MMT advocates argue that nations such as the United Kingdom (UK), the United States of America (USA), Australia and Japan exhibit *currency sovereignty*, whereby the government issues its own fiat currency, which is subject to a free-floating exchange rate and there is minimal foreign-currency debt exposure (see, for example, Mitchell/Muysken 2008).<sup>4</sup> Orthodox luminaries, including Feldstein (2011), Draghi (2014) and Stiglitz (2014), all recognise that being able to issue fiat currency at will and hence repay debt denominated in that currency means that a sovereign economy cannot suffer bankruptcy.

### 4 MODERN MONETARY SYSTEMS

Through its focus on institutional practice, MMT advocates recognise that, while modern monetary systems across developed economies exhibit differences which largely reflect the imposition of voluntary constraints, they share a number of common features. An example of a voluntary constraint is that some central banks have limited capacity to purchase government bonds in the primary market.

Some MMT advocates discuss consolidation of the central bank and Treasury, without always identifying actual institutional practice. Mitchell (2019) emphasises that governments had 'erected elaborate voluntary constraints on their operational freedom to obscure the intrinsic capacities that the monopoly issuer of the fiat currency possessed ... . These

4. Australia no longer issues and sells foreign-currency-denominated debt.

accounting frameworks and fiscal rules are designed to give the (false) impression that the government is financially constrained like a household', quoted in Lavoie (2019: 105).

Mitchell (2019) argues that MMT identifies two levels of reality, which is analogous to Marx who 'considered the exchange relations to be an ideological veil obscuring the intrinsic value relations in capitalist production and the creation of surplus value'. The general case removes 'the veil of neo-liberal ideology that mainstream economists use to restrict government spending', allowing the reader 'to understand that such a government can never run out of the currency it issues and has to *first* spend that currency into existence before it can ever raise taxes or sell bonds to the users of the currency – the non-government sector'<sup>5</sup> (quoted in Lavoie 2019: 105, emphasis added).

In most countries, however, the central bank is independent in terms of policymaking but there are restrictions (voluntary constraints) on the practices of both central bank and Treasury (Pantelopoulou/Watts 2021). For example, in developed economies, including the UK and Australia, the Treasury must fully fund its projected fiscal deficit via debt issue and sale (see Section 6).

Tymoigne (2016) notes that post-Keynesian economists, including Dow (2006) and Lavoie (2006), have made a major contribution to understanding the operation of the monetary system, but via the work of Wray (1998) and Mitchell/Muysken (2008), MMT has integrated the monetary consequences of fiscal policy into this framework, thereby enhancing it (see Section 6).

## 5 MONETARY POLICY

### 5.1 Transmission mechanisms and regulations

MMT advocates and post-Keynesians more generally have long rejected the quantity theory of money (QTM) and the money-multiplier (MM) model, arguing that the money stock is endogenous (for example, Lavoie 1984; Mitchell/Muysken 2008). The level of excess reserves does not drive bank lending, which is argued by reference to the MM, because causation runs from loans made by banks (based on the perceived creditworthiness of prospective borrowers) to new deposits. This argument is now accepted by the Bank of England (BoE) (McLeay et al. 2014: 15–20; Jakab/Kumhof 2015).<sup>6</sup> Clearly, MMT contributes insights regarding money creation by banks (cf. DP 2021a: 5).

Nonetheless, DP (2021a: 6) offer the hysterical claim that, under MMT, central banks have limitless capacity to expand the monetary base, 'thus waiving any limit to the monetisation of public deficits', which is in addition to 'the absence to physical limits to the creation of bank money'. Banks are profit seekers, but they are subject to regulation. The advent of the global financial crisis (GFC), which orthodox economists failed to anticipate, can be attributed in part to weak regulation of financial institutions, which some free-market economists now acknowledge, yet MMT advocates have long advocated greater financial regulation.

Also, DP (2021a: 6) claim that MMT advocates fail to discuss the conduct of monetary policy or to outline the monetary transmission mechanism. When reflecting on the

5. The latter point concerning taxes and bonds has to be understood in an historical context when the state announced that taxes had to be paid using the fiat currency, which it had ordained, thus imposing the requirement for this currency to initially be spent into existence. Now, of course, the private sector can finance its payment of taxes or the purchase of bonds by borrowing.

6. Initially the BoE employed a MM argument when discussing the channels through which quantitative easing (QE) operated (see Joyce/Tong 2012; Sharpe/Watts 2013), but this claim has now been dropped (Fiebiger/Lavoie 2021: 48–50).

respective merits of monetary and fiscal policy, any self-respecting economist would both outline the transmission mechanisms associated with each policy and its capacity to achieve specific macroeconomic objectives.

A clear example of such discussions about transmission mechanisms can be seen in the debate among MMT advocates and post-Keynesians about the removal of central-bank discretion through the implementation of a fixed interest-rate rule, as in Watts/Pantelopoulou (2022) and references therein, including Forstater/Mosler (2005), Wray (2007), Aspromourgos (2011) and Lavoie/Seccareccia (2019).

Unnamed MMT advocates are accused of arguing that law should determine the objectives and conduct of monetary policy and possibly the details (DP 2021: 6). This is common practice in the developed world, with the BoE having statutory responsibilities for monetary and financial stability and the Reserve Bank Board setting interest rates in Australia to achieve the objectives set out in the *Reserve Bank Act 1959* (RBA 2022).

The central bank and the Treasury share information and coordinate their actions, but DP (2021a: 7) provide no support for their claim that MMT advocates argue that the Treasury should instruct the central bank about the amount of liquidity that should be provided or withdrawn. The central bank must always supply sufficient liquidity to the banking system so that the target inter-bank rate is achieved and must act as a lender of last resort to the banks. The provision of liquidity would be affected by Treasury spending since it leads to a rise in the bank deposits of suppliers of goods and services, and hence reserves.

## 5.2 Quantitative easing

DP acknowledge that some central banks have broadened their arsenal of monetary policy instruments by purchasing Treasury liabilities on the secondary market, as well as engaging in forward guidance. The Federal Reserve (Fed), the BoE and the eurozone adopted quantitative easing (QE) in the aftermath of the GFC, whereas the Bank of Japan first adopted QE over the period 2001–2006 (Sharpe/Watts 2013). MMT advocates are well aware that asset purchases through QE do not target liquidity, but instead aim at directly influencing longer-term interest rates (see, for example, Sharpe/Watts 2013; cf. DP 2021a: 8). Again, DP's limited reference to MMT scholarship leads to incorrect claims.

Bussiere et al. (2020: 2), which is referenced in DP (2021a), note that liquidity injections via QE are inflationary, due to their effect on the central bank's balance sheets, which in turn increases the money supply. This analysis is predicated on both the MM and the QTM. Yet, drawing on euro area and US data, the authors find no support for either MM or QTM in the short run.<sup>7</sup>

# 6 FISCAL POLICY

## 6.1 An increased fiscal role?

The exclusive reliance on monetary policy following the GFC led to both the UK and the USA suffering from their slowest recorded recoveries from recession (see, for

7. The former vice-president of the ECB is clear: 'Central bank reserves are held by banks and are not part of money held by the non-financial sector, hence not, per se, an inflationary type of liquidity. There is no acceptable theory linking in a necessary way the monetary base created by Central Banks to inflation' (Constancio 2011: 5).

example, IMF 2013).<sup>8</sup> The impacts of monetary policy continue to have long and variable lags, despite the inter-bank rate now being the favoured instrument, as opposed to the monetary base (see, for example, Batini/Nelson 2002; Atkin/La Cava 2017<sup>9</sup>). Thus, the effectiveness of monetary policy based on the capacity to rapidly adjust the target inter-bank rate is largely nullified.

Scholars and central bankers, including Mark Carney (UK) and Philip Lowe (Australia), as recently as 2019, advocated an expanded role for fiscal policy to counter the risk of deflation and promote real GDP growth. Also, the COVID-19 pandemic necessitated short-term financial relief for households and firms and revealed the inadequacies of public services, including health and aged care, in many developed economies.

MMT advocates argue that government spending is only constrained by fiscal space, that is, the availability of unutilised real resources, but a more nuanced statement acknowledges the importance of an appropriate spatial distribution of spending, given the uneven and persistent spatial distribution of labour underutilisation (Mitchell/Juniper 2005; Mitchell/Bill 2006).

In the UK, '[a]n overarching requirement of debt management policy is that the government fully finances its projected financing requirement each year through the sale of debt' by the Debt Management Office (DMO) on the primary market (HM Treasury 2017: 6). This rule is claimed to fulfil 'principles of transparency and predictability' consistent with 'the institutional separation between monetary policy and debt management policy' (HM Treasury 2017: 6–7).<sup>10</sup> This form of institutional practice clearly represents a voluntary policy constraint.

Net spending by the Treasury (that is, a fiscal deficit) leads to a higher level of bank reserves and additional balances in the accounts of sellers of goods and services. Thus, loanable-funds/crowding-out theories are rejected, since, *ceteris paribus*, there is downward pressure on the overnight interest rate. However, in the UK (and other countries) the debt management agency 'does most of the "heavy lifting" in ... that the impact of the fiscal deficit on the volume of excess reserves held by commercial banks under a corridor system is reduced via the debt sales' (Pantelopoulos/Watts 2021: 237).

Then, under full funding, a fiscal deficit leads to a commensurate increase in the stock of debt, *ceteris paribus*, since the debt management agency sells the debt to the non-government sector in the primary market.<sup>11</sup> If the full funding rule is relaxed, then the increase in debt can be reduced through debt monetisation, which is outlined below.

## 6.2 Debt monetisation

The ability to monetise debt is dependent on the central bank being able to purchase government debt on the primary market. Debt monetisation is also referred to as overt monetary financing (OMF) and was advocated by Adair Turner, the former chair of the UK

8. The OECD and the IMF both promoted fiscal austerity which was alleged to promote private-sector spending (Sharpe/Watts 2012). The IMF later conceded that the fiscal multiplier was higher than they had been claiming.

9. Their estimates suggest that lowering the cash rate by 100 basis points leads to an increase of GDP of  $\frac{1}{2}$  to  $\frac{3}{4}$  percentage points over two years, whereas inflation typically rises marginally less than  $\frac{1}{4}$  percentage point per year over two to three years.

10. The USA, Australia and many other countries also have this mandate with respect to debt issue.

11. In the UK the main market participants 'are known as "Gilt-Edged Market Makers" ... , and includes prominent institutions such as Barclays, BNP Paribas, and Goldman Sachs (UK DMO 2020)' (Pantelopoulos/Watts 2021: 236).

Financial Policy Committee, for countries including the UK, the USA and Japan, and also eurozone members, to address post-GFC economic stagnation (Turner 2013). OMF is an intra-governmental procedure whereby the Treasury instructs the central bank that it needs to spend, and the latter ensures that the funds are available in the Treasury's deposit account for this purpose.<sup>12</sup> This means that the Treasury is no longer reliant on private bond markets to support its deficit spending (Mitchell/Fazi 2017: 183–187). Thus voluntary constraints on the quantum of Treasury debt which have been adopted by the eurozone and the US Treasury can be sidestepped.

The adoption of a floor system means that, when Treasury net spends, liquidity management (and specifically the sale of Treasury debt) is not needed to soak up some or all of the additional reserves held by commercial banks.<sup>13,14</sup>

In contrast to loose monetary policy and QE, OMF is likely to be more effective, because it injects new demand 'into the current income stream' (Friedman 1948: 251), 'rather than relying on the indirect transmission mechanisms of QE', that is, a portfolio effect (Turner 2015: 6).

DP are hostile to a reliance on fiscal policy by policymakers and to the 'monetisation' of Treasury deficits, but do not define monetisation. Also, they note that 'the traditional orthodox opposition between monetisation, whose use could lead to spiralling inflation, and bond sales, which are deemed to reduce the inflation risk of public spending, is viewed by MMT as a false dichotomy' (DP 2021a: 14).

The MMT argument is based on the view that the savings decision (which reflects the level of income and potentially wealth) is separate from portfolio choice and hence the decision to purchase bonds. Thus, bond sales do not reduce aggregate demand as compared to debt monetisation.

Total spending could be too large, relative to the availability of real resources, in which case it is the spending that causes inflation – not the 'choice' between borrowing and monetisation (see also Mitchell 2020, quoted in DP 2021a: 14). However, DP complain that 'even a temporary monetized fiscal stimulus could trigger expectations, especially from the government, that a one-time use could easily become permanent'. In this context, they claim that 'a permanent recourse to monetary issuance would lead to a flight from the currency and to hyperinflation' (DP 2021a: 14). The reference to the government is curious. Also, DP have wheeled out a monetarist theory of inflation grounded in the quantity theory of money and fixed real output. MMT advocates and post-Keynesians focus on demand–pull and cost–push explanations of inflation.

DP (2021a: 14–15) claim that a fiscal deficit may lead to a rise in longer-term rates if financial markets expect high future inflation, at less than full employment. Also, the failure of the market to purchase the extant debt and the government's resort to financial repression would cause interest rates to rise in private credit markets, thereby threatening monetary and financial stability (De Bandt et al. 2021: 262–263).

12. For accounting purposes, the Treasury could issue liabilities in the form of perpetual zero-coupon bonds, which would be sold to the BoE (see Dyson et al. 2016: 49; and also Constancio 2017, both cited in Pantelopoulos/Watts 2021: 234).

13. An alternative form of liquidity management, which would not require a floor system, is the sale of central-bank securities.

14. On the other hand, under QE, purchases of government debt by the central bank occur in the secondary market, which do not reduce the extant stock of government debt, despite the change in ownership of a portion of this debt. Thus QE which is designed to impact on long-term rates is compatible with the full financing of the prospective deficit, as discussed above.



Lavoie (2019: 103) draws on a stationary-state SFC model incorporating endogenous interest rates to argue that, depending on parameter values, fiscal deficits can lead to an increase in commercial rates, even though there are downward pressures on the overnight rate (Lavoie/Reissl 2018).

The central bank could exploit its currency-issuing capacity and formalise its control of the yield curve by reintroducing the tap system into the operation of the primary market. Under these arrangements, the term structure of yields and associated quantities of debt would be specified by the debt management agency and any unsold debt would be purchased by the central bank, which is effectively OMF, albeit with the quantum of debt purchases determined by the market.<sup>15</sup> Alternatively, the control of a long-term rate could be achieved 'if the Central Bank were to announce the target long-term rate of interest' and make known their willingness to purchase unlimited amounts of debt on the secondary market under a floor system (Lavoie 2013: 16; see also Fullwiler/Wray 2010: 10).<sup>16</sup>

### 6.3 Deficit and debt dynamics

We now turn to the so-called *ex ante* inter-temporal government budget constraint (IGBC) to examine the deficit debt dynamics associated with a partial monetisation of debt associated with ongoing fiscal deficits. The IGBC can be written as:

$$G_{t+1} - T_{t+1} + rD_t \equiv B_{t+1} + rD_t = \Delta D_{t+1} + \Delta M_{t+1}, \quad (1)$$

where  $B_t$  denotes the primary deficit,  $(G_t - T_t)$  in period  $t$ ;  $D_t$  is extant Treasury debt;  $r$  denotes the average interest rate on debt; and  $\Delta M_t$  measures the change in the monetary base reflecting seigniorage and debt monetisation (Watts/Sharpe 2013).<sup>17</sup> Thus, a fiscal deficit (that is,  $B_{t+1} + rD_t > 0$ ) is alleged to be 'financed' by a combination of new debt issue and sale ( $\Delta D_{t+1}$ ), and a change in the monetary base ( $\Delta M_{t+1}$ ).<sup>18</sup>

Thus, as noted, the fiscal deficit does not have to be accompanied dollar for dollar by the issue and sale of additional government debt which Turner interprets as a means of relaxing the *ex ante* budget constraint.<sup>19</sup> Contrary to orthodoxy, MMT argues that equation (1) is an *ex post* identity.<sup>20</sup>

15. An SFC model incorporating these refinements would need to respecify the asset demand functions. Also the assumption of a stationary state by Lavoie/Reissl (2018) is somewhat restrictive.

16. The RBA targeted the three-year bond rate in March 2020 and reduced its target rate from 0.25 percent to 0.1 percent in November 2020. This form of targeting was discontinued in November 2021.

17. We ignore seigniorage.

18. Under the full funding rule, which is described above,  $\Delta M_{t+1}$  is zero.

19. While Turner is a strong advocate of OMF, he takes an orthodox perspective, arguing that OMF reduces the long-term public-debt burden and the possible emergence of Ricardian equivalence. Also, he is keen that 'credible constraints of rules and institutional responsibilities' which build on 'central bank independence and explicit inflation targets are created' to constrain the use of OMF (Turner 2015: 6). Lerner (1943) initially developed the OMF concept. Friedman (1948) was also a supporter, as a corollary of banks being subject to a 100 per cent reserve requirement, and despite arguing in favour of sound money (Turner 2015).

20. The balance-sheet analysis of deficit spending, of the type shown in Lavoie (2013: tables 1–3), does not necessarily map into the right-hand-side flow components of the IGBC, because the impact of deficit spending can be conflated with liquidity management under a corridor system, with the latter reflecting the preferences of the non-government sector and any reserve requirements.

Equation (1) is the basis for the analysis of deficit/debt dynamics (Watts/Sharpe 2013), albeit typically under the assumption of constant parameter values, notably the interest rate and growth rate.<sup>21</sup> The condition for the stabilisation of the debt-to-GDP ratio remains that the growth rate exceeds the average real interest rate, even in presence of OMF and the assumption of a stable monetary-base-to-GDP ratio. The equilibrium debt ratio would be lower if OMF were implemented. However, the positive impact of growing private-sector wealth on spending would reduce the equilibrium debt ratio. Other endogenous factors as well as the central bank's capacity to flatten the yield curve, would contribute to the stabilisation of the debt ratio (Mitchell et al. 2019: 358).

DP further complain that 'MMT does not address the opportunity costs and distributional consequences of the "monetisation" of deficits by the Central Bank – e.g. impact on asset prices ... – that may affect both the demand and the supply side of the economy and therefore the inflation constraint, even before full employment is reached' (DP 2021a: 14). These unsubstantiated claims require a formal model.

#### 6.4 Job guarantee and inflation

The JG is designed to be part of a sustainable full employment policy. MMT advocates eschew the 'sole reliance on traditional Keynesian policies of pump-priming and large-scale public investment, which typically run into inflationary bottlenecks before full labour utilisation has been achieved' (Juniper et al. 2014/2015: 285) and leave in their wake a persistent and uneven spatial pattern of underutilisation, as noted earlier.<sup>22</sup> DP (2021: 18) acknowledge the buffer-stock property of a JG, and hence its operation as an automatic stabiliser.

The importance of providing local JG jobs which are locally administered is emphasised (Mitchell 1998; Juniper et al. 2014/2015; Tcherneva 2020). The intent is that the number of minimum-wage JG jobs should be as low as possible but sufficient to meet the potential cyclical fluctuations in private-sector employment at full employment. Nersisyan/Wray (2020) also support a JG in the context of the significant structural change associated with the implementation of a Green New Deal.

Buiter/Mann (2019) recognise that a JG can be an effective policy tool if there is 'a permanent inventory of productive, meaningful jobs and job openings, ready to be filled at short notice in the public sector'.

MMT does have a theory of inflation. Indeed, some of its proponents have advanced the theory and empirical analysis of the inflationary process (see, for example, Mitchell 1987; Watts/Mitchell 1990) and also explored the sacrifice ratio associated with inflation targeting (Mitchell et al. 2019: 298–301).

MMT recognises that under a JG, there is a change in the inflation regime, given that there is no variation in the quantum of employment, but rather in the composition of employment between JG and non-JG workers. However, a rise in employment opportunities at market wages and the transfer of JG workers to higher-paying jobs promotes little or no inflationary pressure, in the absence of hysteretic inertia associated with long-term unemployment.

DP (2021a: 19) argue that MMT advocates ignore 'the displacement of private sector production if workers prefer better-paid or less intensive' JG jobs and the JG 'sets the

21. Watts/Sharpe (2013: 83–84) show that, under plausible parameter values, a fiscal deficit can reduce the debt ratio.

22. Thus MMT recognises that under pump-priming there can be a relationship between fiscal deficits and inflation (cf. DP 2021a: 2).

effective minimum wage floor' which 'may have inflationary consequences and cause job losses' elsewhere in the economy. One important feature of a JG is that it sets a robust floor for pay and conditions since it is available to all workers, thereby reducing real-wage repression and precarious employment. If private-sector firms are unable to compete with JG jobs on the basis of carefully set minimum wages and conditions, then they should shut down (Filene 1923) or restructure.

Any inflationary pressures in the economy can be addressed by cutting government expenditure or raising taxes which would displace some workers employed at market wages into JG employment, which represents a counter-inflation sanction without creating unemployment.

Finally, DP (2021a: 9–10) draw heavily on Edwards (2019) and devote two pages to outlining inflationary and hyper-inflationary episodes in ten countries, which can hardly be considered a substitute for rigorous analysis. Monetary sovereignty is identified with the absence of a fixed exchange rate and presumably with each country having its own currency. There is no mention by DP of each country having limited exposure to foreign-currency-denominated debt. Also, MMT advocates have always argued that reliance on pump-priming leaves either chronic unemployment or labour bottlenecks and inflation.

DP (2021a: 10) summarise the analysis of hyper-inflation in the Weimar Republic in the 1920s by Sargent (1982), but the authors fail to note that there was a dramatic contraction of supply before the emergence of hyper-inflation. French and Belgian armies took over the industrial area of the Ruhr, after the Germans defaulted on the severe reparation payments required under the Versailles Treaty. German workers went on strike and production ceased (Mitchell et al. 2019: 344–345).

## 7 CONCLUSION

DP (2021a) provide a disorganised and unconvincing set of claims about MMT which reflects limited reading of a substantial extant literature in refereed publications. The irony which also characterises many of the hostile 'orthodox' critiques of MMT is that no alternative strategy for sustained full employment is provided, other than a dubious reliance on the free market, despite the poor macroeconomic performance of most developed economies in the last 50 years.

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