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Modern Money Theory: A Reply to Palley

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ABSTRACT *Modern Money Theory (MMT) has explained why monetarily sovereign governments have a very flexible policy space that is unconstrained by hard financial limits. It has provided institutional and theoretical insights about the workings of economies with monetarily sovereign and non-sovereign governments. It has also provided policy insights with respect to financial stability, price stability and full employment. Yet there have been many critics of MMT, including Palley (2014). Critiques of MMT can be grouped into five categories: views about the origins of money and the role of taxes in the acceptance of government currency, views about fiscal policy, views about monetary policy, the relevance of MMT conclusions for developing economies, and the validity of the policy recommendations of MMT. This paper addresses Palley's criticism of MMT using the circuit approach and national accounting identities, and by progressively adding additional economic sectors.*

1. Introduction

One main contribution of Modern Money Theory (MMT) has been to explain why monetarily sovereign governments[1] have a flexible policy space unconstrained by

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[1]We use the term 'sovereign government' to indicate a government that issues its own currency. As we will discuss, a monetarily sovereign government can choose among alternative exchange rate regimes—fixed, managed, and floating—which impacts domestic policy space. A government that promises to convert its own currency on demand and at a fixed exchange rate is constrained by its ability to obtain that to which it promises to convert. In that sense, we can say that it is 'financially constrained' even though operationally it cannot run out of its own currency. The problem is that it can be forced to default on its promise to convert (to a foreign currency or to a precious metal). For some purposes, it is useful to separate floating currency regimes from fixed and managed exchange rate regimes. Many of those who adopt MMT make such a distinction, arguing that only floating currency regimes are 'fully' sovereign in the monetary sense. However, many of the principles we outline in this article apply to all currency-issuers—but it must be kept in mind that when a government promises to redeem its currency its policy space can be limited.

hard financial limits. Not only can they issue their own currency (broadly defined) to meet commitments denominated in their own unit of account, but also any self-imposed constraint on their budgetary operations can be by-passed by changing rules. As such, this type of government is not financially constrained in the way that non-sovereign units are; it can focus on issues such as full employment and price stability.

Through a detailed analysis of the institutions and practices surrounding the fiscal and monetary operations of the Treasury and central banks of nations such as the US, Brazil, Canada, Argentina, the Eurozone, and Australia, MMT has provided institutional and theoretical insights about the inner workings of monetarily sovereign and non-sovereign governments (see Tymoigne & Wray, 2013). The institutional insights concern the balance-sheet implications of Treasury and central bank operations, the importance of national accounting identities, and the economic irrelevance of—but the political importance of—self-imposed financial constraints. The theoretical conclusions of MMT concern the usefulness of combining the Treasury and central bank into a government sector, causalities between desired and actual macroeconomic financial balances, the functional role of taxes and bonds, and the relevant constraints on government. These institutional and theoretical elements are summarized by saying that monetarily sovereign governments are always solvent, and can afford to buy anything for sale in their domestic unit of account even though they may face inflationary and political constraints.[2]

MMT has also provided policy insights with respect to financial stability, price stability and full employment. It argues these are important goals that have to be met independently from one another by putting in place structural policies. MMT rejects the traditional trade-off between inflation and unemployment, and does not rely on economic growth and fine-tuning to reach full employment.

Critiques of MMT fall into five categories: views about origins of money and the role of taxes in the acceptance of government currency, views about fiscal policy, views about monetary policy, the relevance of MMT conclusions for developing economies, and the validity of the policy recommendations of MMT.

This article addresses each of these categories using the circuit approach and national accounting identities, and then by progressively adding additional economic sectors. Our focus is a response to Palley (2014). The first section examines the government sector, showing the importance of taxes for the smooth working of a government-based monetary system. The second looks at the domestic private economy and draws some conclusions about the conduct and proper stance of fiscal policy. The third section adds the central bank and interactions among the central bank, Treasury and private sector. The fourth adds the foreign sector and discusses exchange-rate regimes as well as the level of development of a country. The fifth section focuses on the policy framework and conclusions of MMT.

[2]See footnote 1. With a fixed exchange rate, access to foreign reserves can act as another constraint.

2. The Simplest Case: The Circuit with a Consolidated Government

Palley argues that the monetary financing of government expenditures, as promoted by MMT, leads to inflation. He is joined by others (Fiebiger, 2013; Gnos & Rochon, 2002; Lavoie, 2013; Rochon & Vernengo, 2003) in rejecting the consolidation hypothesis, which states that (without loss of generality) the Treasury and central bank can be consolidated into a federal government sector. These critics contend this hypothesis fails to describe the current institutional framework of developed countries, and claim it pushes MMT into unnecessary positions. We address these issues by tackling the nature of money and the role of taxes, and by beginning to deal with the consolidation argument.

The theory of the circuit is a good starting point. Like all theories, it simplifies the existing economic system in order to draw out causalities. From the circuit theory, one can better understand Keynes's (1939) point that spending makes saving possible, and the importance of distinguishing financing (initial finance) from funding (final finance). Parguez (2002) and Bougrine & Seccareccia (2002) have shown how circuit theory can be extended to include the state, and have reached similar conclusions.

We start with a simple economy (Figure 1), with a federal government that injects currency by spending and imposes a tax that must be paid with this currency. The (federal) government also provides advances of government currency to the other sectors (private domestic sector, domestic state and local governments, foreign sector) that must be serviced by repaying government currency. This government is assumed to be free of self-imposed constraints on its financial operations. This is similar to the case of 200 years ago when governments issued currency in the form of coins, tally sticks, and bills of credit, and imposed taxes. Figure 2 shows the consolidated balance sheet.

Let L_1 be the monetary base. It goes up when government buys goods and services from, or advances funds to, the domestic economy (A_1 and L_1 rise). L_1 (and A_1) falls when government taxes. The monetarily sovereign government is the monopoly supplier of its currency and can issue denominations in physical or non-physical forms. As such, government has an unlimited capacity to purchase and to fulfill promised future payments, and to provide funds to the other sectors. Insolvency and bankruptcy cannot be forced on this government; it can always pay.

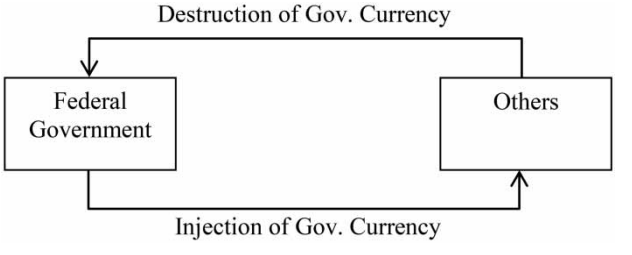

Figure 1. A simple circuit with a monetarily sovereign government

Assets	Liabilities and net worth
A_1: Physical assets and financial claims on the non-federal sectors	L_1: Monetary liabilities held by banks and the rest of the domestic non-federal sector L_2: Other liabilities held by the domestic non-federal sector and the rest of the world plus net worth

Figure 2. Simplified balance sheet of a sovereign consolidated government

Another conclusion is that the injection of government currency (through expenditures or advances) must occur before the destruction of currency (through tax enforcement and repayment of advances). Logically, taxes are not a financing source.[3] They are part of the destruction of government currency; i.e., they return currency to the issuing government. Thus, the government 'budget constraint' is an *ex-post* identity showing sources of injection and destruction of government currency, not an equation describing choices to finance government expenditures. Within that logic, a fiscal deficit represents a net injection of currency that usually needs to be drained, as explained in Section Three.

A third conclusion is that taxing, 'borrowing' and monetary creation are not mutually exclusive; monetary creation to finance spending does not make taxation and bond offerings unnecessary or less needed. They all occur but at different stages of the circuit. They are complementary means for the government to work smoothly with the rest of the economy. Injection of the currency allows the government to obtain what it wants by fulfilling the desire of the non-government sectors for government liabilities (both high powered money and bonds—we will come back later to what creates that desire). Tax enforcement is part of the reflux mechanism; that is, it allows government currency to return to its issuer.

One may wonder why that reflux is necessary. The reason is found in the logic of finance. All monetary instruments are financial instruments that must obey the rules of finance to have value. One way to give value to a financial instrument is for the issuer to take it back in the future. Households promise to take back their mortgage notes (when they repay their mortgages), businesses promise to take back their bonds (repaying principal due when bonds mature). The same applies to government: the currency issuer must accept its currency in payments to itself. Households meet that reflux requirement by working and earning wages, companies do it by selling, government does it by taxing (broadly speaking—other types of payments to authorities can also be important, such as fees, fines, tithes, and tribute). Each of these creates a demand for the financial instrument of the specific economic unit. In general, the greater the capacity to tax, the greater the demand for government currency. Thus, taxes are essential because they help the government currency to circulate at par (thereby making the payment system more efficient) and because they can be used to promote price

[3]Note the similarity to Keynes's argument that saving does not finance investment.

stability by removing purchasing power from domestic economic units (Tymoigne, in press).

While this simplified monetary system is institutionally different from current practice, it provides valuable lessons. Notably, it shows that it is relevant to frame issues surrounding taxes in terms of fairness, incentive mechanisms and capacity to control inflation, instead of government finances. Hence, we offer two justifications for providing the simple circuit model. First, it corresponds with historically important government financing procedures (something even the critics recognize). More importantly, it provides a framework for distinguishing between currency-issuers and currency-users. Any issuer can provide a potentially unlimited quantity of her own IOUs the trick, as Hyman Minsky said, is to get those IOUs accepted. By imposing taxes to be paid with those IOUs and enforcing them, the sovereign government ensures acceptability. So long as government only promises to accept its own IOUs in payment, it cannot be forced to default on that promise. Further, the causal sequence is clear: those who have obligations to pay currency must obtain it before they can pay, and if government is the only supplier, then government must spend or advance the currency before taxes and other obligations can be paid. This logic lets us analyze how modern government works, even though today's operations are more complicated.

We can now address two of points made by Palley (2014, p.10, 7).

> The central policy assertion of MMT is the non-existence of financial constraints on government spending below full employment. The claim is government can issue money to finance non-inflationary spending as long as the economy is below full employment. [. . .] The only time expansionary fiscal policy pays for itself is with balanced budget fiscal policy, but that is ruled out by MMT, which denies the need to finance deficits with taxes. In a static economy that means the money supply would keep growing relative to output, causing inflation that would tend to undermine the value of money.

First, Palley is wrong that the monetary financing of government spending is inflationary. His point rests on the view that taxes versus monetary creation are choices within the budget constraint of the Treasury. As we argued above, money creation and taxing are not alternatives; they come at different points in the financial process. MMT provides a description of the financing and funding process, not a policy recommendation.

Second, MMT makes a distinction between real and financial constraints. Inflation is a real constraint not a financial constraint, so inflation does not prevent the government from financing itself—as such the capacity of the government to finance itself is independent of the state of the economy. Indeed, as the currency-issuer, government can always outbid the private sector, which certainly is a concern of MMT. At full employment, increasing government spending will be inflationary, before full employment government spending can cause bottlenecks and inflation of the prices of key inputs. Further, and more surprisingly, Palley seems to adopt a simplistic Monetarist view of the cause of inflation when he claims that money supply growth greater than growth of output would 'undermine the value of money'. Like most heterodox approaches, MMT rejects the quantity equation explanation of inflation.

Palley (2014, p. 2) finds MMT to be extreme when linking money and taxes. 'Unfortunately, MMT sets up unnecessary controversy by asserting that the obligation to pay taxes is the *exclusive* reason for the development of money' (emphasis in original). Rochon & Vernengo (2003, p. 57) make a similar point: 'Sovereignty, understood as the power to tax and to collect in the token of choice, is not the main explanation for the existence of money, even if modern money is ultimately chartal money.'

MMT does argue that imposing obligations (taxes, fines, fees, tithes and tribute) would be sufficient to 'drive' acceptance of government currency. Some MMT advocates believe the historical record indicates that these obligations are the origin of money: government currency was first made acceptable through imposing an obligation, and the creation of a monetary unit of account was initiated by the government. Afterwards, government currency was used for other purposes. Over time, financial instruments issued by others were denominated in the same money unit, and some of these also began to circulate widely.

But, to be clear, MMT does not argue that taxes are necessary to drive a government currency—critics conflate the view that taxes are sufficient and that they are necessary. MMT is agnostic as it waits for a logical argument or historical evidence showing that there is an alternative to taxes (and other obligations). The orthodox–Austrian Robinson Crusoe story is unacceptable as it contains several logical flaws (Desan, in press; Gardiner, 2004; Ingham, 2000). The other common explanation relies on an infinite regress that is unsatisfying: Billy-Bob accepts currency because he thinks Buffy-Sue will accept it (Buchanan, 2013).

Private money-denominated IOUs developed for reasons other than the imposition of taxes, but history suggests that government provides the foundation upon which modern monetary systems developed. When new countries are formed, their governments adopt a new money of account, impose taxes and other obligations in that unit, issue a new currency in that unit, and accept their own liabilities in tax payment. Whatever might have been the case in prehistoric times, with few exceptions we observe a familiar pattern throughout recorded history.

The essential point is that the consolidation hypothesis is a theoretical simplification that makes sense once one understands the logic of the interrelations between the central bank and the Treasury, and between the government and non-government. Palley (2014), Fiebiger (2013), Gnos & Rochon (2002), and Lavoie (2013) all complain that consolidation is not descriptive of how fiscal operations work today. The contemporary Treasury is not a bank that can keystroke funds into existence, and it can run out of funds if it does not tax and issue bonds. Thus, they claim, one should interpret the accounting budgetary equation of the Treasury as a budget constraint with alternative choices.

> The government budget restraint shows the accounting relationship whereby governments that issue sovereign money can, in principle, finance spending by printing money. However, that also requires a particular institutional arrangement between the fiscal authority and the central bank. [. . .]. This is an important issue of political economy. MMT dismisses this political economy and assumes there is and should be full consolidation of the fiscal authority and central bank (Palley, 2014, pp. 4–5).

This criticism misses the point. The consolidation hypothesis does not describe current institutional arrangements; rather, it is a theoretical simplification to get to the bottom of the causalities at play in the current monetary system. It is correct that, under current institutional arrangements, the Treasury must receive funds to its account at the central bank before it spends and that this is accomplished through taxes and bond auctions, but description is not MMT's point. The consolidation logic ignores current self-imposed institutional and political constraints on the Treasury and the central bank for three reasons (developed in Section Three). First, the balance sheet outcome is the same regardless of the institutional framework. Second, the impact of Treasury spending, taxing, and bond offering on interest rates and aggregate income is the same. Third, ultimately, the central bank and the Treasury work together to ensure that the Treasury can always meet its obligations, and that the central bank can hit rate targets.

Like all theories, MMT makes simplifications that aim at laying bare the foundation of our monetary system. The consolidation hypothesis and its conclusions are not descriptive; they are logical and reached after extensive analysis of the institutional framework of monetarily sovereign governments. This can help understand current debates about government, and to reframe them in order to provide relevant ways to solve problems.

Finally, the technique of consolidating the central bank and Treasury is frequently adopted outside MMT, for purposes quite similar to our purposes.

> The actions of Treasury and the CB are subject to their budget constraint. It is customary in macroeconomic models to lump the two constraints into one, since in practice Treasury is a residual claimant of the profits of the CB [. . .] and, from a purely economic perspective, the distinction between the two agencies is superfluous (Bassetto & Messer, 2013, p. 7).

Consolidating the balance sheets helps to clarify matters; however, even non-MMT users of the consolidation hypothesis may not understand the logical implications for the finances of a monetarily sovereign government. Taxes cannot be a source of revenue in the consolidated balance sheet. They do not add monetary assets; rather, they reduce liabilities. Similarly, the issuance of treasuries just changes the composition of liabilities. This is clear in the consolidated balance sheet, but hidden when the two branches of government—the fiscal authority and the monetary authority—are treated separately. MMT's critics waste considerable ink criticizing what is a common simplification.

3. Adding the Domestic Private Sector

The previous section focused on the government side of the circuit. We now add non-government sectors while retaining the consolidation hypothesis. In this section, we think of the non-government sector as equivalent to the domestic private sector; however, the analysis could just as well include state and local governments.

From the Flow of Funds accounts one concludes that not all sectors can be net lenders simultaneously; if one sector is in surplus at least another must be in deficit

(Ritter, 1963).[4] MMT uses this accounting insight and adds desires and causalities to make several points. First, if the fiscal balance is not consistent with desired net saving of the domestic private sector, nominal national income will adjust as the domestic private sector changes its spending level. As national income changes so do automatic stabilizers, and so the fiscal position will move to be consistent with the level desired by the non-government sector. How national income changes (change in output and/or price) will depend on the state of the economy and how adjustments affect desires.

Second, one can conclude that as long as the nongovernment sector desires to have a net accumulation of government currency, there is no need to retire all of the fiscal injection of currency through taxation; i.e., there is no need to have a balanced budget. The proper federal fiscal stance cannot be determined independently of non-government sectors' desire to accumulate government financial instruments.

Contrary to Palley (2014, p. 6), there is no need to assume the government budget should balance at full employment in order to prevent inflation:

> There is no finance constraint on *G* because of the capacity to issue sovereign money. However, once the economy reaches full employment output, taxes (*T*) must be raised to ensure a balanced budget [. . .] This balanced budget condition must be satisfied in order to maintain the value of fiat money. In a no growth economy, having the fiscal authority run persistent money financed deficits will cause the money supply to increase relative to GDP, in turn causing inflation.

The fiscal balance at full employment depends on the desired net saving of non-government sectors at full employment. If the desired net saving of the domestic private sector is positive at full employment, no inflationary pressures need arise from a fiscal deficit.[5]

Normally, as national income rises, non-discretionary government spending declines and taxes rise due to automatic stabilizers. Thus, there is no need to proactively raise taxes (i.e., raise taxes or impose new taxes) and cut discretionary spending as the economy does better if strong automatic stabilizers are in place. But this does not mean that a surplus is needed during an expansion. To summarize, MMT does not say that at full employment the fiscal position of the government cannot be balanced; it can, but that is not up to the government to decide.[6]

[4]More formally, $\Delta(FA_{DP} - FL_{DP}) + \Delta(FA_G - FL_G) \equiv 0$ or $(S - I) + (T - G) \equiv 0$ with *FA* financial assets, *FL* financial liabilities, *S* saving, and *I* investment. $\Delta(FA - FL)$ is net lending (or net financial accumulation), $(S - I)$ net saving by the domestic private sector, and $(T - G)$ net saving by the government (fiscal balance).

[5]We discuss below the fact that inflation can result before full employment, and that fiscal policies can contribute to inflation by creating full employment. We note also that Keynes reserved the term 'true inflation' to indicate the situation where additional spending must cause inflation because the elasticity of output has fallen to zero when all resources are fully employed. This seems to be the scenario Palley has in mind. However, his argument that budget deficits at full employment means there must be 'true inflation' in Keynes's sense is flawed.

[6]We do not mean to imply that government decisions have no impact. For example, a 'trickle up' policy to move income to the rich might increase the private sector's net saving desire, resulting

Third, this does not mean that MMT is for a fiscal deficit, a fiscal surplus or a balanced budget. As Abba Lerner's 'functional finance' approach insists, the fiscal position of the government is not a policy objective for a monetarily-sovereign government. Price and financial stability, moderate growth of living standards, and full employment are the relevant macroeconomic objectives, and the fiscal position of the government has to be judged relative to these goals. If there is inflation that is demand-led, the fiscal position is too loose (surplus is too small or deficit is too large); if there is non-frictional unemployment, the fiscal position is too stringent.

Fourth, for the stability of the economic system, it is usually important that the domestic private sector not be a net borrower. Indeed, if that sector is a net borrower, this implies that net financial wealth of the domestic private sector is declining so net worth declines unless the nominal value of real asset grows fast enough through asset price appreciation. This is exactly what happened during the recent housing boom when the speculative run-up of housing prices was rapid enough to sustain the net worth of households in spite of unprecedented borrowing. Of course, all this is in line with Minsky's Financial Instability Hypothesis (Tymoigne & Wray, 2014). The implication of a net lending position by the private sector is that the federal government has to be in deficit unless the foreign sector is willing to be in deficit.

Fifth, contrary to Palley, MMT does not believe that taxes are the only reason for holding government currency. Taxes are a sufficient condition for accepting government currency, not a necessary condition; however, taxes and other obligations to authorities did play a central role in the development of currency going back at least to Ancient Egypt. But government currency can be held for other reasons. This is why the government can run a deficit as other sectors want to accumulate government financial instruments (in monetary form or not) beyond the purpose of paying taxes (Tymoigne, in press; Wray, 2012).

4. Adding the Central Bank

Palley (2014) argues that MMT does not account for the flood of reserves from monetary financing of government spending. In this case, a deficit leads to a decline in interest rates and potential financial instability. In order to address this issue, we remove the consolidation assumption of the federal government (gray area in the figures below) by distinguishing between the central bank (CB) and the Treasury (Figure 3). Treasury operations involve the exchange of financial assets for real assets ('fiscal policy'). Treasury receipts of CB currency come from taxes and bond offerings, so the Treasury is also involved in some financial transactions to obtain credits to its account at the central bank. The central bank injects CB currency (notes and accounts at the central bank) through open market purchases of treasuries and non-government financial

in bigger budget deficits at full employment; a policy that uses New Deal-style job creation to achieve full employment might instead be consistent with a balanced budget. In other words, government policy can affect the private sector's behavior.

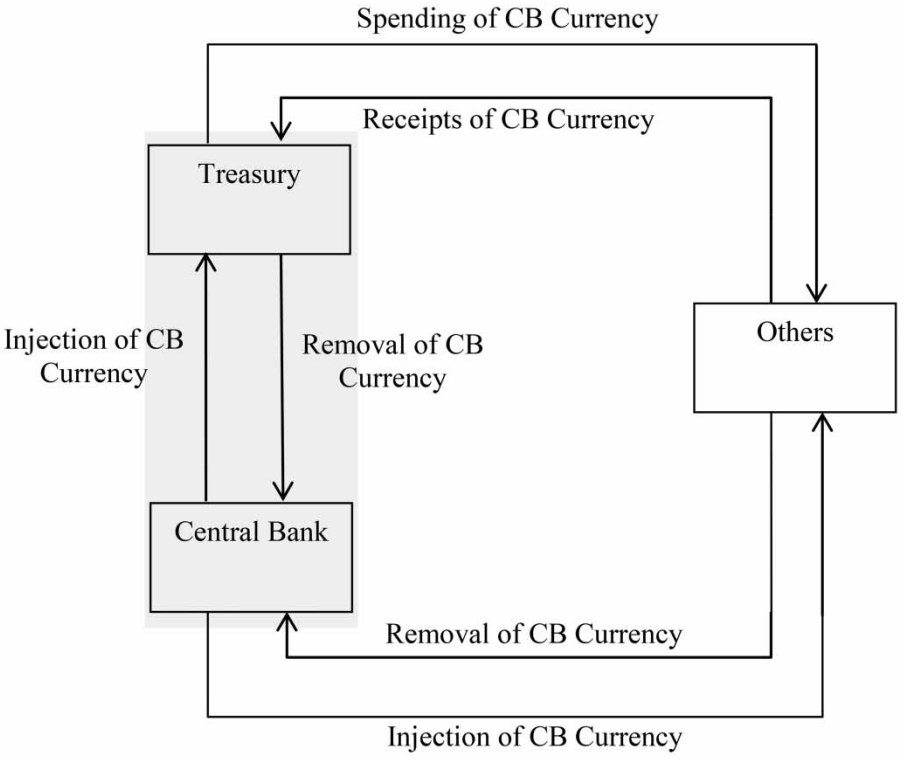

Figure 3. The circuit with central bank and Treasury

instruments. Central bank operations (monetary policy) do not change the mix of real and financial assets for non-government sectors.

Figure 3 assumes the central bank directly advances funds to the Treasury. Whether such activity is permitted is not relevant for MMT. Indeed, the crucial elements in this circuit are injections and removals of CB currency that occur between the gray area (federal government) and the others. Transactions within the federal sector have no direct impact on macroeconomic variables. For example, central bank's bond purchases from the Treasury do not inject CB currency into non-government sectors, and so have no direct effect on the interest rate as long as the Treasury does not spend. However, there could be an indirect effect if financial market participants account for a new buyer in the primary market (they assume fewer treasuries will be sold into financial markets); but that depends on how the central bank bids in the primary market.

Injections of CB currency must come before it is removed from non-government sectors. This means the central bank must advance CB currency either to the non-government sectors or to the Treasury before any of the following can occur—tax collection, treasuries purchases by non-government sectors, or spending by the Treasury.

There is a more precise way to look at the sources of injection or removal of CB currency. Figure 4 shows the simplified balance sheet of the central bank of a monetarily sovereign government. L_1 is approximately the monetary base, and L_2 is the outstanding amount of CB currency held by the Treasury. Given that a balance sheet must balance:

$$L_1 \equiv A_1 + A_2 - L_2 - L_3$$

MMT uses this identity because it shows the sources of injection and drainage of CB currency. MMT focuses on Treasury and central bank operations that lead to changes in L_1, affecting the Federal Funds Rate and the economic relationship between the public and private sectors. When a consolidated government is used, the balance sheet shown above in Figure 2 applies instead.

Fiscal policy (changes in L_2) leads to fluctuations in L_1 for reasons unrelated to changes in the demand for monetary base; it is an exogenous fluctuation (a 'vertical' injection of monetary base) for the domestic non-federal sector, although it may be endogenous to the state of the economy. Thus, a central bank needs to offset any change in L_1 due to Treasury operations to maintain the Federal Fund Rate on target. This does not mean that MMT is throwing away the endogenous component of variations in L_1. While Lavoie (2013, p. 8) does not see any gain from 'making references to vertical components,' MMT shows that these components explain why the Treasury and central bank coordinate. This coordination is a justification for consolidation—it is what ensures the self-imposed constraints do not bind.

To simplify, we assume all economic transactions involve electronic transfers of funds (no use of central bank or Treasury physical currency). As the Treasury spends (L_2 falls), bank reserves rise (L_1 goes up) simultaneously with the bank accounts of non-bank economic units. As the Treasury taxes (L_2 rises), bank reserves decline (L_1 falls). If the Treasury runs a deficit, there is a net increase in L_1. Surpluses drain reserves, reducing the monetary base.

Following Moore's horizontalist approach, given that demand for reserves by banks is highly inelastic, in normal times excess reserves push the Federal Funds Rate below the Fed's target while a shortage raises the Federal Funds Rate. Thus, the central bank needs to offset the Treasury's fiscal operations unless it targets a

Assets	Liabilities and net worth
A_1: Treasury securities A_2: Other assets	L_1: Monetary liabilities held by banks and the rest of the domestic non-federal sector L_2: Monetary liabilities held by the Treasury L_3: Monetary liabilities held by others plus net worth

Figure 4. Simplified balance sheet of a central bank

Federal Funds Rate of 0 per cent (in which case it can leave excess reserves in the system) or it gives up Federal Funds Rate targeting (and accepts potentially highly unstable overnight interest rates).

To stabilize rates, policy is coordinated. With a deficit, the central bank drains excess reserves by moving A_1 in the opposite direction of L_2: the traditional open market operations. However, the central bank has a limited amount of treasuries it can use for open market operations, so the Treasury must supply treasuries for Federal Funds Rate targeting to be effective. The alternative is for the central bank to offer interest paying liabilities—some central banks do issue bonds that serve the same purpose as some open market operations.

A growing economy normally requires a growing monetary base,[7] and so rising central bank assets, which usually means more treasuries held by the central bank. If there is a fiscal surplus, the outstanding amount of treasuries shrinks, which is a problem for a central bank that performs OMOs with that instrument.

Beyond providing an adequate supply of treasuries, the Treasury assists in Federal Funds Rate targeting through tax and loan accounts (TT&Ls), its deposits at private banks. First set up in 1917 to receive proceeds of liberty bond offerings, these accounts began to receive tax collections in 1948. They were created to smooth the impact of fiscal operations on reserves (US Senate, 1958; US Treasury, 1955). The Treasury helps the central bank by timing transfers between its account at the Fed (L_2, called the Treasury's General Account (TGA)) and its TT&Ls to maintain stability of L_2.

Ultimately, Treasury and central bank financial operations are intertwined. The Treasury is involved in monetary policy and the central bank is involved in fiscal policy. Independence of the central bank is thus rather limited (Tymoigne, 2014). As MacLaury (1977) summarizes:

> The central bank is in constant contact with the Treasury Department which, among other things, is responsible for the management of the public debt and its various cash accounts. Prior to the existence of the Federal Reserve System, the Treasury actually carried out many monetary functions. And even since, the Treasury has often been deeply involved in monetary functions, especially during the earlier years. [. . .] [The Federal Reserve] would also work closely with the Treasury and would be fully informed of and sympathetic to the Treasury's needs in managing and financing the public debt [. . .] The Treasury and the central bank also work closely in the Treasury's management of its substantial cash payments and withdrawals of Treasury Tax and Loan account balances deposited in commercial banks, since these cash flows affect bank reserves.

The central bank and the Treasury must work together to support the monetary and financial systems because they are ultimately two sides of the same

[7]This has nothing to do with a multiplier view of the monetary process. As the economy grows, more advances from private banks are requested and more cash is needed by the population for transaction purposes. Thus, once banks have granted advances, banks might need additional reserves to meet reserve requirements, settlement requirements and withdrawals from customers. The rise in the monetary base is a residual effect in the causal chain of events (Lavoie, 2006).

coin—the government sector. Even in the extreme case where nobody wants to buy bonds from the Treasury, the central bank will intervene, or the Treasury will find ways to avoid having no funds in its accounts. For example, in the US special dealer banks always stand by to purchase treasuries and the Fed ensures there are sufficient reserves to do so by supplying them through temporary repos. While the Fed is not in that case directly buying the new issue from the Treasury, it uses open market operations to buy existing bonds to provide reserves needed by private banks to buy the new securities. The end result is exactly the same as if the central bank had bought directly from the Treasury. Thus, if one wants to account for institutional aspects in order to be more descriptive, one should account for all of them, namely those that constrain Treasury–Central Bank operations, and those that allow the Treasury to bypass these constraints (Tymoigne, 2014).

MMT draws some practical conclusions from the analysis of balance-sheet accounting and interactions between the central bank and the Treasury. One could separate the Treasury and central bank instead of consolidating, but this simply adds assumptions and intermediate steps without changing the nature of the operations. MMT argues that the added complexity from separating the two government entities is counter-productive because it leads to misunderstandings, poor modeling, and incorrect policy.

Consider how things are done in the US—the Treasury holds accounts in both private banks (TT&Ls) and the Fed (TGA), but can write checks only on its account at the Fed (it cannot spend its deposits at private banks). Further, the Fed is prohibited to be a net buyer of treasuries in the primary market (and is not supposed to allow overdrafts on the Treasury's account); thus, the Treasury must have a positive balance in its account at the Fed before it spends. The Treasury replenishes its account at the Fed either via balances collected from tax (and other) revenues or debt issuance. Fullwiler et al. (2012) show these constraints do not change the impact of fiscal policy on balance sheets—although the order of financial transactions does change. One way or another, the Treasury gets goods and services in exchange for CB currency. Again, the circuit approach helps us understand the logic at work (Figure 5).

The circuit is complicated but, again, before the Treasury can tax and issue bonds, an injection of CB currency must occur because the Treasury only spends using funds in its TGA. Ultimately, taxes and bond offerings drain CB currency when funds are moved from the TT&Ls. Either the central bank advances currency to, or buys financial assets from, the private sector. In either case, CB currency is then passed along to the Treasury, so the central bank is still involved in financing the fiscal operations of the Treasury, but it does so indirectly. In addition, the Fed provides stable refinancing for the Treasury by buying treasuries in the primary market to replace those maturing in its asset portfolio.

In conclusion, Treasury spending always involves monetary creation as private bank accounts are credited, while taxation involves monetary destruction as bank accounts are debited. The question becomes how the Treasury acquired the funds deposited at the central bank. In the current institutional framework, the apparent answer is through taxation and bond offerings. While economists usually stop there, MMT goes one step further—asking where the funds used to

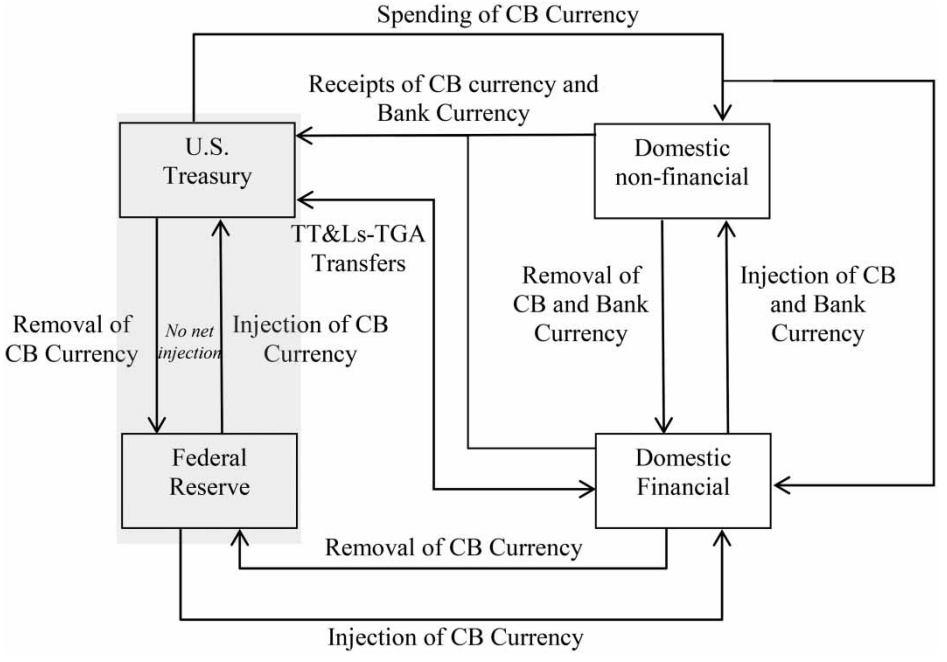

Figure 5. Circuit with more realistic features for the US institutional framework

pay for taxes and bonds came from. The answer is the central bank. This must be the case because taxes and bond offerings drain CB currency so the central bank had to provide the funds (as it is the only source). To put it succinctly, the Fed is the monopoly supplier of CB currency, the Treasury spends by using CB currency, and since the Treasury obtained CB currency by taxing and issuing treasuries, CB currency must be injected before taxes and bond offerings can occur.

Palley (2014, p. 12) also argues that a permanent deficit, exclusively financed monetarily, generates price and financial instability. 'Money-financed budget deficits increase the supply of high-powered sovereign money, which embodies latent purchasing power [. . .].Yet that appears to be the implicit recommendation in MMT's policy of exclusive reliance on money-financing of budget deficits'. He sees monetary financing, taxes, and bond offerings as exclusive alternatives. But bond offerings are not an alternative to monetary financing; rather, they complement it by draining excess CB currency in order to maintain interest-rate stability. Thus, it is true that a deficit not accompanied by a bond offering will drive down interest rates if it creates excess reserves (because L_1 goes up), and that might lead to imprudent borrowing by the private sector. However, the deficit-led decline in interest rates usually will not happen because the central bank will drain excess reserves to maintain a given Federal Funds Rate target. Bond offerings must occur after a net monetary injection by government unless the other sectors wish to net save in the form of government currency.

Finally, Palley (2014) notes that bonds provide an important foundation for the financial system but does not seem to recognize that MMT agrees. Bond

offerings by the Treasury are central to the stability of the financial system as long as the central bank does not pay interest on reserves. Interest-paying government liabilities are so important to maintain financial stability that the Treasury may continue to issue treasuries for that purpose even if there is a fiscal surplus. Australia is a recent example of that case (Commonwealth of Australia, 2011). China is an example of a case where it is the central bank that issues interest-paying bonds when the Treasury runs a surplus.

5. Adding the Foreign Sector

Palley notes that government currency is demanded for reasons other than paying taxes, and that foreign citizens do not pay taxes to the domestic government. In addition, in some countries the domestic private sector does not want to use the government's currency in most economic transactions. Thus, taxes do not drive government currency.

MMT has always made these points. Individuals who do not owe taxes still accept the national currency, and foreign currencies can be accepted domestically even though there are no domestic taxes in those currencies. In some countries there are things for sale only in foreign currencies. All of these situations have been discussed at length (Wray, 1998) and none causes problems for MMT. The simple fact is that almost all monies of account are 'state monies' and almost all government currencies do have taxes or other obligations standing behind them. Further, even if one can find a money of account and a government currency that has no fee, fine, tax, tribute, or tithe backing it, that would not invalidate MMT.

This section adds the foreign sector to MMT. Some of the complexities presented in the previous section have been removed to get to the main point (Figure 6).

Foreigners can create financial instruments denominated in the domestic unit of account that promise to deliver domestic (foreign to them) government currency, but they cannot legally create that currency. It makes no sense to argue that foreigners supply US dollars to the US government. As foreigners cannot create US government currency, they must obtain it from the US. While it is true that a foreign bank can create US dollar deposits ('Eurodollars'), it must obtain the Federal Reserve's US dollars for cash withdrawals and clearing.

The causality runs from spending by the domestic economy to saving by foreigners.[8] A monetarily sovereign government does not need foreigners for its finances. While the Treasury sells bonds to obtain CB currency, the central bank is the entity that issues that currency, not foreigners. China does not finance the US; the US provides dollars that China wants. Because China has accumulated so many dollars, she can buy US treasuries using accumulated dollars. But that cannot be a net source of US government finance; rather, it represents a portfolio change—an exchange of reserve deposits at the Fed for US treasuries (another electronic entry at the Fed). US indebtedness does not change by this portfolio adjustment, although this transaction increases payment commitments

[8]Again notice the parallel to Keynes's argument that saving does not finance investment.

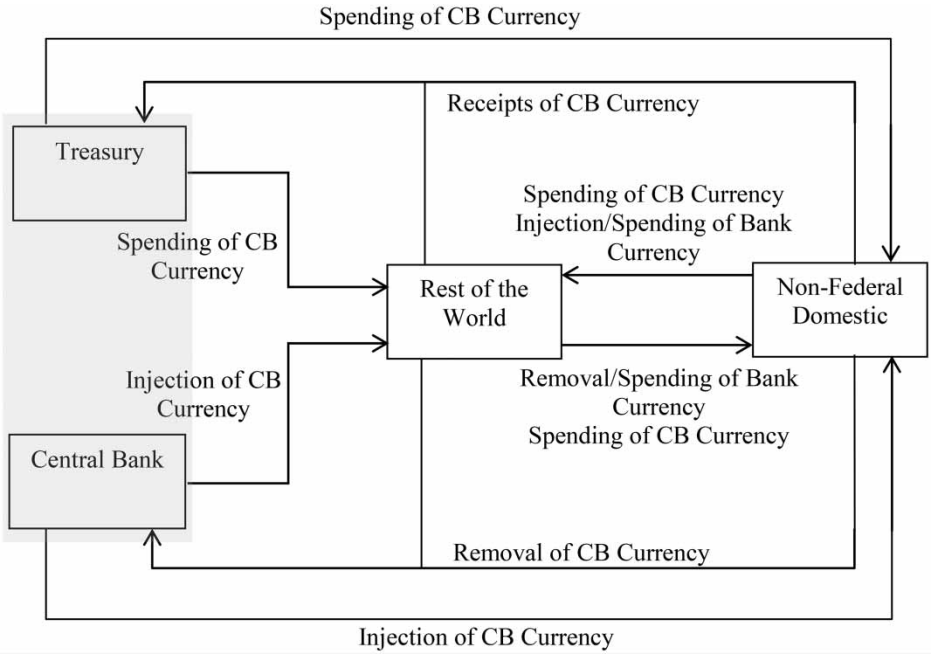

Figure 6. Circuit with the foreign sector

since the term structure of interest rates is usually positive. However, those interest payments will be made in the same way that all other government spending is made, through credits to the foreigner's account at the Fed (L_3 goes up). There is nothing 'special' about payments to foreigners, because the US government makes commitments in its own currency. None of this applies when a national government issues financial instruments denominated in foreign currency.

Moving beyond the circuit approach, one can gain additional insights from national income identities. Following Section Two's logic, the equilibrium fiscal position will be determined by the desired net financial accumulation of both the domestic private and the foreign sectors. While a policy focused on achieving simultaneously three surpluses—fiscal surplus, domestic private surplus, and external surplus—is usually seen as desirable, it cannot be delivered unless the foreign sector is willing to have an external deficit. If all countries aim to reach an external surplus simultaneously, at best external balances are zero, which means that either the government sector or the domestic private sector is in deficit while the other is in surplus. In the most favorable case, a country provides the international currency and the rest of the world desires to save it. In that case, desired net saving by foreigners is positive because they want to accumulate net worth beyond physical accumulation, and so a current account deficit by the country supplying the reserve currency is needed.

Open economies are more sensitive to fluctuations in exchange rates and may desire to curb exchange-rate fluctuations by pegging a currency, but this affects policy space. A crawling peg provides policy space that varies according to the

exchange rate band. A currency board, the last step before completely giving up monetary sovereignty ('dollarization'), constrains policy space and so makes it difficult for a government to set its own policy agenda. Palley argues that dollarization contradicts MMT.

> Small open economies with histories of high inflation have also shown themselves prone to the phenomenon of currency substitution or 'dollarization' whereby domestic economic agents abandon the national money in favor of a more stable store of value. Dollarization shows that the store of value property is an important property of money, contrary to MMT denials of the significance of this property (Palley, 2014, p. 14).

This is a strange claim; we know of no place where MMT denies the importance of store of value. MMT does recognize that some small open economies may benefit from dollarization where almost none of their economic activity is driven by the domestic private sector and government spending. MMT just states that demand for government currency is determined at minimum by the tax levy and the capacity to enforce it. Assuming that tax enforcement is perfect and government currency is only demanded for taxes, the equilibrium government budget will be balanced. In that case, the equilibrium external balance will be determined by the desired net saving of foreign currency by the domestic private sector.

6. Policy Aspects of MMT

MMT has fiscal, monetary and financial policy implications. In line with Keynes and Minsky, it recognizes that unemployment, arbitrary distribution of income, price instability and financial instability are central problems of market economies that require government involvement for resolution. The nature of this involvement is, however, very different from the Bastard/IS-LM Keynesian approach that focuses on fine-tuning. It is not correct to associate MMT with textbook Keynesianism of the 1960s as Palley (2014, p. 17) does.

> MMT discards the interest rate as an instrument of policy and relies on fine tuning of government spending to maintain full employment and taxes to maintain budget balance [...] Yet long ago, Milton Friedman (1961) raised the problem of inside and outside policy lags. The former represent lags regarding time taken to decide and enact policy change.

MMT does not promote fine tuning; rather, it recognizes the role of a 'rightly distributed' demand in addition to the right level of aggregate demand (Keynes, 1937), and aims at combating the inherent instability of market mechanisms. More importantly, MMT does not rely on increasing aggregate demand to reach full employment; it disconnects full employment from economic growth. The following discussion focuses on two specific aspects of policy advocated by most proponents of MMT, the Job Guarantee program and central bank policy of permanently zero or near-zero overnight interest rates.

MMT's Job Guarantee proposal is not the Bastard Keynesian fine-tuning policy to which Palley refers. We are surprised that Palley still promotes a rather orthodox version of the Phillips Curve trade-off. Yet, his belief that full

employment must generate rising inflation cannot apply to the Job Guarantee program. Let us first look at the labor market effects of a Job Guarantee program. We then turn to the aggregate demand effects.

According to Palley (2014, p. 15):

> MMT proponents can be labeled 'fiscal policy optimists'. The same holds for neo-Keynesians. Both believe that expansionary fiscal policy can shift the economy to full employment and keep it there, regardless of such outside factors as the distribution of income. This fiscal policy optimism is open to question. [. . .] In the short-term, as in the Keynesian model, expansionary fiscal policy can increase demand and remedy the problem because government spending is a perfect substitute for private spending. However, higher government spending implies higher taxes to balance the full employment budget and that may have adverse supply-side tax effects that are not present in either Keynesian or Kaleckian models.

The Job Guarantee program does not focus on stimulating aggregate demand to move to full employment. Nor does it see government spending as a 'perfect substitute' for private spending. Rather, the targeted spending is designed to develop a pool of employable labor, while ensuring continuous employment of those ready and willing to work. While it might be a policy option to increase taxes in step with government spending on wages in the Job Guarantee program, this should be done only if inflation pressures arise. Inflationary pressures will already be dampened by the rise in taxes that occurs through automatic stabilizers so a proactive increase of taxes may not be necessary.

Since most readers will by now be familiar with the program, we will be brief. The national government agrees to provide wages (and some non-wage funding) to employ anyone who is ready and willing to work at the program wage (plus non-wage benefits). The Job Guarantee program is 'rightly distributed' since its spending is targeted on those who want to work. It places no direct pressure on wages because workers were part of the 'redundant' labor force and are still available for private employers (at a small mark-up over the Job Guarantee program wage). Indeed, the program should lower recruiting and hiring costs as employers would have an employed pool of workers demonstrating work readiness.

Turning to effects on aggregate demand, many critics worry that if, say, 10 million people obtain jobs and thereby increase their incomes, consumption would increase and drive up inflation. By logical extension, they would also worry about a private-sector led expansion that created jobs. We find such a position to be overly defeatist—a 'let the poor eat cake' response to unemployment and poverty. This criticism is often combined with the claim that workers in the program would just 'dig holes', adding nothing to national output. Again, we see that as overly pessimistic—since a jobs program can be designed to produce desirable output, as the New Deal's jobs programs did. However, let us imagine that the program is successful at creating 10 million jobs and income, so that the economy moves from slack to full employment of all productive capacity, resulting in rising prices. The presumed problem is that while Job Guarantee workers get wages (and thus consume) they do not contribute any production

that is sold (to absorb wages). The 'excess' wages from newly employed workers causes inflation.

What could government do? It would have at its disposal the usual macroeconomic policy tools: raise taxes, lower spending on programs other than the Job Guarantee, and tighten monetary policy. (It could also use unconventional policy such as wage and price controls.) Indeed, this is what it would do in the absence of the Job Guarantee if the private sector achieved full employment through creation of 10 million new jobs in the private sector. The only difference is that government would not be able to fight inflation by increasing unemployment—because the macro policies used to fight inflation would dampen demand, but any worker losing a job could turn to the Job Guarantee program for work. What this means is that with a Job Guarantee in place, the inflation-fighting adjustments to spending will occur among the employed rather than by causing unemployment and poverty.

Our position is similar to Keynes's (1936, p. 318): 'No one has a legitimate vested interest in being able to buy at prices which are only low because output is low.' While Palley argues against creating jobs because it could cause what Keynes called 'semi-inflation' (increased demand drives up prices in those sectors with an elasticity of output below one), this is not a defensible position. Normally, as Keynes (1936, p. 285) said, a rise of effective demand 'spends itself, partly in affecting output and partly in affecting price' and only if elasticity of output approaches zero does a rise of effective demand cause 'true inflation'. Below that point, there is no 'legitimate vested interest' in keeping labor unemployed. Instead, inflation must be fought by alternative means.

It must be recognized that increasing private sector employment will cause the same 'semi-inflation', raising prices in the sectors that consumption by new workers in the Job Guarantee program would affect. It does no good to argue that hamburger flippers are 'productive' (they flip burgers) while Job Guarantee workers are not (they provide, for example, public services to the aged), because the 'semi-inflation' will occur in all sectors where increased spending faces anything less than perfect output elasticity. Hence, if Palley were consistent, he would always fight against job creation if any sectors that would experience increased sales to workers had less than perfect output elasticity. His argument against the Job Guarantee is a red herring.

In terms of central bank policy, MMT sees a role for promoting financial stability. However, using interest-rate manipulations for fine-tuning is problematic for at least three reasons. First, the sensitivity of economic activity to interest rates is low overall, and declines in a boom. Sensitivity is even lower now that gradualism and transparency have made it easier for economic units to anticipate and protect against adverse changes in interest rates. Second, as Minsky notes, using the central bank for fine tuning and for financial stability are two incompatible purposes. Increasing interest rates during an expansion promotes financial fragility, and moving interest rates widely up and down to fine tune the economy creates instability in the refinancing operations of banks. Third, changes in the policy rate affect the cost of borrowing, which affects costs of production and so prices.

MMT does not believe in financial market stability, as Palley (2014, p. 18) claims:

> Analytically, MMT's 'park it' approach to interest rates implicitly lets finance call the tune. In financial booms fiscal policy must turn contractionary, and the reverse holds in busts. This interest rate policy passivity is tantamount to believing that financial markets are stable and set interest rates and asset prices appropriately. The same belief is reflected in MMT's confidence about freely floating exchange rates. This view is inconsistent with the assessments of both Keynes (1936) and Minsky (1992, [1993]) regarding financial markets, although MMT claims to represent a Keynes-Minsky perspective.

MMT argues that promoting financial stability via interest rate manipulation is of limited effectiveness and can actually be destabilizing. Instead, the government must promote safe underwriting, establish a banking structure that promotes long-term relationships, and regulate financial innovation.

Finally, MMT explains why one should not be afraid of removing the debt ceiling or of allowing the central bank to directly finance the Treasury; this would not directly promote price and financial instability and such changes do not necessarily promote careless spending. Taxes and bond offerings are still needed and budgetary procedures and political accountability are still necessary to make sure that government is involved in the economy according to the wishes of its people. More broadly, one can understand that budgetary procedures are political in nature, and the point is to promote procedures that make the political process run well by promoting accountability and transparency, while eliminating procedures that are put in place on the basis of fear of unaffordability and bankruptcy. The fact that government can spend an unlimited amount of money does not mean it should, and ultimately the choice of how much a government should spend is a political question.

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