

The Monetary and Fiscal Nexus of Neo-Chartalism: A Friendly Critique

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Abstract: A number of post-Keynesian authors, called the neo-chartalists, have argued that the government does not face a budget constraint similar to that of households and that government with sovereign currencies run no risk of default, even with high debt-to-GDP ratio. This stands in contrast to countries in the eurozone, where the central bank does not normally purchase sovereign debt. While these claims now seem to be accepted by some economists, neo-chartalists have also made a number of controversial claims, including that the government spends simply by crediting a private-sector-bank account at the central bank; that the government does need to borrow to deficit-spend; and that taxes do not finance government expenditures. This paper shows that these surprising statements do have some logic, once one assumes the consolidation of the government sector and the central bank into a unique entity, the state. The paper further argues, however, that these paradoxical claims end up being counter-productive since consolidation is counter-factual.

Keywords: central bank, clearing and settlement system, eurozone, neo-chartalism

JEL Classification Codes: B5, E5, E63

The global financial crisis has exposed the weaknesses of mainstream economics and it has given a boost to heterodox theories, in particular, Keynesian theories. The mainstream view about the irrelevance of fiscal activism has been strongly criticized by the active use of fiscal policy in the midst of the global financial crisis. Nevertheless, this was followed by a quick turnabout of most of the profession as soon as a deeper-than-expected recession provoked large government deficits and rising sovereign debt

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ratios. The crisis and the generalization of social media, most notably the multiplication of blogs in the hyperspace, has provided more room to enthusiastic exponents of alternative economic theories. This is particularly the case with neo-chartalism, often called *modern monetary theory*, or MMT, on numerous blogs.

The development of a strong neo-chartalist identity by economists, who were formerly associated with post-Keynesian economics, has led some observers to wonder about the links between neo-chartalism and post-Keynesian economics. Heterodox economists (not to speak of mainstream economists) have also found some of the claims of neo-chartalism hard to swallow. The purpose of this paper is to deal with these two issues. Most of the analysis, however, focuses on the clearing and settlement system and its relationship with the activities of the central government. Neo-chartalists have put forward propositions that go beyond the strict limits of monetary policy, such as offering to solve the unemployment problem while safeguarding price stability. But I will not discuss these propositions here.

I start the analysis with a brief introduction to neo-chartalism, followed by an examination of its relationship with post-Keynesian economics. A section of the paper further discusses some of the more controversial statements of neo-chartalism, essentially in relation to the clearing and settlement system. The next section depicts how some of these views have been modified over time. I then present an examination of the eurozone as seen by neo-chartalists and a study of the eurozone clearing and settlement setup in light of the previous analysis. Readers will, no doubt, take notice of the importance of institutions in affecting economic performance. I finally conclude that neo-chartalists have made a welcome addition to post-Keynesian monetary economics, but that they have made this contribution within a framework which obscures its understanding.

Neo-Chartalists and Their Main Themes

To their credit, proponents of neo-chartalism have been able to exert a substantial impact on the blogosphere, with several non-academic bloggers (for example, *Naked Capitalism* or *Mike Norman Economics*) now endorsing fully and enthusiastically the ideas of academic neo-chartalists.¹ Neo-chartalists have thus succeeded in the task of taking on board several non-academic scribblers, despite monetary matters being a rather arcane subject, a result that had evaded post-Keynesians so far. Even Paul Krugman (2011), on his blog, has made occasional references and comments about MMT. In addition, modern monetary theory has been the subject of a long article in the *Washington Post* (Matthews 2012). This is the consequence of the unrelenting efforts to be highly active on blogs by a few individuals, among which Bill Mitchell, Warren Mosler, Scott Fullwiler, as well as Randall Wray, and his colleagues at the University of Missouri-Kansas City (UMKC).²

But who are those neo-chartalist authors and why the reference to chartalism? All post-Keynesians would reject the idea that money was introduced into the economy as a way to improve upon barter. Neo-chartalists, or modern chartalists, argue – very much in line with Adam Smith, Georg Friedrich Knapp, and John

Maynard Keynes – that the state determines what can serve as money, and the state enforces this decision by its power to tax people and to require payment in the currency of its choice. Thus, what one faces here is a state theory of money or, more precisely, a taxes-drive-money theory (Wray 1998, 18). This theory is called chartalism because what constitutes money is defined by the state, and the ability of banks to produce money is granted by charters. But who are the modern chartalists – the neo-chartalists? With neo-chartalist authors such as Randall Wray, Mathew Forstater, Stephanie Bell-Kelton, and such former students as Pavlina Tcherneva, Éric Tymoigne, and Felipe de Rezende, all coming out of the same place, it may be said that UMKC forms the head office of the neo-chartalist group. Another important site for the movement is the Center of Full Employment and Equity (CofFEE) located at the University of Newcastle in Australia, with its prolific director Bill Mitchell, and such acolytes as Martin Watts and James Juniper. There are other important figures, or “fellow travellers,” like Jan Kregel, Edward Nell, and Scott Fullwiler. In addition to the above names, one may argue that the originators of modern monetary theory are Warren Mosler, Hyman Minsky, Abba Lerner, and Wynne Godley, as neo-chartalists often invoke their writings. Despite being written by a non-academic, Mosler’s (1994) paper plays a crucial role in this article’s analysis because Mosler was certainly the first to put a great emphasis on discussing the clearing and settlement system, thereby providing support for the post-Keynesian view of endogenous money. Finally, as Wray puts it in a draft of his new book, “others – some of whom were initially critical of certain aspects of the approach – have also contributed to development of the [neo-chartalist] theory: Charles Goodhart, Marc Lavoie, Mario Seccareccia, Michael Hudson, Alain Parguez, Rob Parenteau, Marshall Auerback, and Jamie Galbraith” (Wray 2011A). It should thus be obvious that I have much sympathy with modern monetary theory, although, as pointed out by Wray, I might have reservations on some aspects.

What are the main concerns or features of modern monetary theory as presented by neo-chartalist authors? I would sum those up into four main topics. The first topic encompasses the question about the origins of money as well as the claim that money is a creation of the state. A second major topic contains the proposition that the state ought to act as an employer of last resort (ELR) – that is, providing employment to anyone willing but unable to find work in the private sector (Forstater 1998). This policy stance is also known as a job-guarantee program or a buffer-stock employment program (Mitchell and Watts 1997). This issue also relates to the question of how to achieve full or high employment without generating inflation, since neo-chartalists argue that the public sector could serve as a buffer of employable workers when the private sector hires more workers. Thus, there is an important distinction between the standard expansionary Keynesian fiscal policies and employment-of-last-resort policies, which would tend to be geographically concentrated in the areas with low economic activity. A third topic constitutes fiscal policy. Neo-chartalists reassert the importance of fiscal policy relative to monetary policy in contrast to its neglected role within mainstream macroeconomics. As part of this stance, neo-chartalists have resurrected the role of *functional* finance as opposed to

sound finance, very much in line with the work of Abba Lerner (1943). They also make an extensive use of the three-balance identity, most notably promulgated by Wynne Godley (1999A) and the New Cambridge school, in an attempt to show that the domestic private sector can only accumulate (net) financial assets if the domestic public sector accepts to go into debt (or if the country has a positive current account balance, in an open economy), thereby showing that public debt is not necessarily an evil.³

While all these themes are certainly worth investigating, in this paper I focus on the fourth topic addressed by neo-chartalists – namely, studying the mechanics of the clearing and settlement system.⁴ This mechanics is examined in light of the relationship between the transactions of the government sector and the monetary system, which links with the legitimacy of functional finance. The mechanisms of the payment system, and the way the government integrates into it, then leads to the definition of a *sovereign* currency.⁵ While neo-chartalists do not claim that their ideas are valid everywhere at all times, they do argue that their most controversial propositions only apply to countries with a “sovereign currency” (Wray 2002, 24). Thus, the definition of what “sovereign currency” means acquires some importance in my argument. There are degrees of currency sovereignty and under the highest degree of sovereignty in a country, the neo-chartalists say, the domestic currency is the unit of account; taxes and government expenditures are paid in this currency; the central bank is unhindered by regulations; the public debt is issued in the domestic currency; and there is a regime of pure floating exchange rate.⁶

I could probably argue here that the neo-chartalist emphasis on the way central governments finance their expenditures – thus, on the mechanics of clearing and settlement systems – arose out of a desire to demonstrate that ELR programs (being a key to the neo-chartalist proposition) could always be financed. After all, neo-chartalists demonstrate that the idea of functional finance can be taken very seriously, even if it leads to huge deficits, because financing large deficits does not pose a problem for central governments; at least under certain conditions. Mosler (1997-1998, 168-169) certainly makes a statement to that effect: “Nonetheless, an ELR program would face stiff political opposition, for it requires that the size of the federal budget deficit not be targeted at the beginning of the fiscal year. Moreover, it carries the possibility of persistent (and even growing) deficits. ... Consequently, if the ELR program is to be politically feasible, it is incumbent on its supporters to demonstrate why the fear of deficits *per se* is unwarranted.”⁷

From this angle, one could perceive neo-chartalism’s main line of reasoning as a response to the standard crowding-out arguments, according to which government deficits would either lead to uncontrolled inflation or to rising interest rates. A key claim of neo-chartalism is that government deficits tend to reduce overnight interest rates rather than increase them. In other words, neo-chartalists argue that there cannot be any financial constraint to central government expenditures, at least, under certain conditions. If there were any constraints, those would be artificial, self-imposed, political constraints on government finances or supply-side constraints (full capacity or full employment).

The Links between Neo-Chartalism and Post-Keynesianism

Before I tackle the neo-chartalist propositions on the clearing and settlement system as well as their implications for government finance, I will explore the general relationship between post-Keynesians and neo-chartalists. Most of the leading neo-chartalists – or “fellow-travellers,” as I called them – are well-known post-Keynesian authors, though they seem to have taken an identity of their own in the blogosphere, often hinting that other post-Keynesians do not understand or even disagree with them.⁸ Furthermore, some post-Keynesians share a distrust for neo-chartalism, because they view a number of neo-chartalist propositions as overly extreme and are taken aback by the militant behaviour of some of neo-chartalism’s adherents. Even outside observers seem to be aware of the tension existing between neo-chartalists and (other) post-Keynesians as the following blog statement illustrates: “There seems to still be a debate within the post-Keynesian world about whether chartalism (of which I am still very sceptical) is in competition with or in conjunction with circuitism (of which I believe)” (Brazelton 2010, blog).

Scott Fullwiler (2010A), one of the most articulate proponents of MMT, provides a suitable and revealing response to the above comment: “Where? There is no debate, at least among actual chartalists and actual circuitists, that I can see, on whether bank money is endogenous/horizontal. We all agree on the monetary circuit or endogenous money. In fact, there’s very little difference between the entire paradigm put forth by chartalists and circuitists/horizontalists like Marc Lavoie and Mario Seccareccia.” Fullwiler, therefore, denies that there is any major disagreement between neo-chartalists and post-Keynesians. Yet, he is careful to point out that those he has in mind are post-Keynesians of the horizontalist variety or, else, French or Italian circuitists, of the French-Italian school, including Alain Parguez, presumably. Without revisiting the whole post-Keynesian horizontalist-versus-structuralist debate on money, it is worth noting that the more transparent procedures put in place by central banks over the last two decades have vindicated the horizontalist position (Lavoie 2005); and so have the neo-chartalists studies on the clearing and settlement system (Wray 2006). The uneasiness of many post-Keynesians to accept some of the neo-chartalist arguments may, in part, be attributed to their unwillingness to entertain the mechanics of the clearing and settlement system as well as the horizontalist position.

In response to a further inquiry about the compatibility of neo-chartalism and post-Keynesianism, Fullwiler (2010A) reasserts that there is no significant difference between the endogenous money view of neo-chartalists and post-Keynesian horizontalists. “A number of people, Keen included, used to think there was some inconsistency between MMT/Chartalism and endogenous money. I think I’ve explained it enough to Keen that he gets that there is no inconsistency, but I’m not sure, since many on his site still say that sort of thing. As I said, though, horizontalists like Marc Lavoie will tell you we are using basically the same model as he is for both government money and bank money.”

Indeed, neo-chartalists share many common elements of monetary theory with other post-Keynesians, more precisely, with the horizontalist post-Keynesians and the circuitists. I will simply sum up – without commenting much further – the elements that the neo-chartalists share with the post-Keynesians. First, the money supply is endogenous for both groups. Second, loans make deposits, and deposits make reserves (Wray 2002, 25). Of course, as events during the subprime financial crisis have demonstrated, this last statement is only true in normal times, when the central bank does not set its target interest rate at the floor of the interest rate corridor. Third, central bank operations are essentially defensive, as the central bank normally attempts to set the supply of reserves equal to the demand for them. Fourth, the operating target of the central bank is the overnight rate target, not the supply of the money stock. Warren Mosler (1994, 3) makes all these points quite explicit when he claims that “monetary policy sets the price of money, which only indirectly determines the quantity. It will be shown that the overnight rate of interest is the primary tool of monetary policy. ... The money multiplier is backwards. Changes in the money supply cause changes in bank reserves and the monetary base, not vice versa.” Fifth, bank credit depends on the credit-worthiness of customers, not on the availability of excess reserves.⁹ Sixth, compulsory reserves are means to smoothing the demand for reserves and reduce fluctuations in overnight interest rates; their role is not to control monetary aggregates. Seventh, in a corridor system, the target overnight interest rate can be modified and the target rate achieved without any change in the quantity of reserves (Fullwiler 2008). Finally, the ability of the central bank to set interest rates is tied to the banks’ obligation to settle on the books of the central bank, a feature of the usually less enlightening claim that the central bank has a monopoly over the creation of high-powered money.

Modern monetary theory, however, shares some additional elements with French and Italian circuit theory. This may explain why a circuitist like Alain Parguez (2002) so keenly endorsed neo-chartalism at an early stage. In circuit theory, there is a sequential order in which various agents are brought into the monetary circuit. Firms borrow from banks and spend first, paying out wages (and dividends on the previous stock of shares). Then, only in a second stage, do they obtain the means to go on with the final finance of their expenditures – through the sale of products and financial assets. In the neo-chartalist theory, the temporal story is very similar. The (federal) government borrows from the central bank and spends first, and then, only in a second stage, does it secure its final finance – through taxation and the sale of financial assets to the private sector. As Pavlina Tcherneva (2006, 70) says, “logically, and in practice, government spending comes *prior* to taxation.” Statements of this sort can also be found in the writings of other neo-chartalists such as Forstater and Mosler (2005, 537), as well as some circuitists such as Parguez (2002, 88) and Hassan Bougrine and Mario Seccareccia (2002, 71). Thus, there is some symmetry to circuitism as well as neo-chartalism. In circuit theory, consumers cannot buy goods until they get paid, and firms cannot pay their employees unless they get advances from banks. In neo-chartalist thought, households cannot pay their taxes until they get central bank money, and financial institutions cannot purchase government

securities until they obtain the reserves to buy them, either through past government deficits or through advances from the central bank (Fullwiler 2010B, 3). In addition, there is a degree of interdependence between circuitists and neo-chartalists. Indeed, on occasion, neo-chartalists cite circuitists to support their own claims (as in Bell 2003).

These tight links notwithstanding, many post-Keynesians, in fact, feel uneasy with some of the views endorsed by neo-chartalists. Just as the horizontalist version of post-Keynesian monetary theory in the 1980s generated a negative response by those who viewed it as extreme, so did neo-chartalism in the 2000s provoke mistrust among many post-Keynesians on similar grounds. I have counted a dozen scholarly critiques of neo-chartalism over the years, the more general of which belongs to Perry Mehrling (2000). Half of these critiques focus on the idea of the state as an employer of last resort, especially papers by Julio Lopez-Gallardo (2000), Tony Aspromourgos (2000), George Anthony Kadmos and Phillip Anthony O'Hara (2000), John E. King (2001), Mario Seccareccia (2004), and Malcolm Sawyer (2003). Sawyer's (2003) paper, in particular, drew two responses from the neo-chartalists (Forstater 2005; Mitchell and Wray 2005), both claiming that the author's critique was superficial and overly reliant on second-hand views.¹⁰ The other half of the critiques of neo-chartalism focused on the neo-chartalist monetary views (see articles by Febrero 2009; Gnos and Rochon 2002; Parguez and Seccareccia 2000, Rochon and Vernengo 2003; and van Lear 2002-2003).¹¹

As pointed out earlier, neo-chartalists have actively promoted, debated, and defended their ideas through the blogosphere. However, the standards of good conduct on the web are not the same as those that rule academic journals. This has led to some over-reaction to criticisms, even in cases when critiques came from people who were essentially on the same side of the theoretical debate.¹² This, added to the aggressive reaction against critics by some non-academic supporters of neo-chartalism, has induced a number of post-Keynesian economists to distance themselves from neo-chartalism by avoiding debate altogether. Regarding the wisdom of shifting the debate's locus from academic journals to the blogosphere, the neo-chartalist controversy offers a cautionary tale. As a consequence of this, readers will not be surprised to notice that the discussion to follow relies on primary sources of neo-chartalism and abstains from quoting critics of MMT. (Readers interested in the monetary views of neo-chartalism should see Bell 2000; Fullwiler 2003, 2008; Mosler 1994, 1997-1998; Tcherneva 2006; Wray 1998, 2002, 2012; as well as the numerous informative blog posts of Bill Mitchell.)

The Paradoxical Claims of Neo-Chartalism

I am in support of many neo-chartalist arguments that deal with the monetary and fiscal nexus. My worry, however, is that neo-chartalists are so zealous in demonstrating that there are no financial barriers to running ELR, or other government expenditure programs, that their efforts may eventually become counter-productive. The experience with my own students – when left on their own to deal, for example, with

Stephanie Bell's article (2000), which denies that taxes and bonds finance government expenditures – shows me that even open-minded readers end up being puzzled. While some apparent paradoxical neo-chartalist statements seem worth making – for instance, the claim that the government does not face a budget constraint similar to that of households; that running budget surpluses will not ease off pressure on interest rates or provide the private sector with more loanable funds; and that running budget surpluses now will not help to deal with the demands of an ageing population in the future – others may not be necessary. So, for example, is it necessary to claim, as Wray (2011B, 158-159) does, that the role of taxes is not to finance government spending? Or that the federal government does not borrow funds from the private sector to finance its deficit? Or that persistent budget deficits will not burden future generations with higher taxes? Although there is some internal logic to these statements (as shall be seen later), such paradoxical claims run the risk of overkill in trying to convince fellow economists that a central government with a sovereign currency does not face a financial constraint. There is also a problem of terminology, when words often take on a meaning that is different from their general use.

I start with the terminology problem which is the easiest to settle. Neo-chartalists have come to speak of a vertical and a horizontal component of money, specifying that the horizontal component was some leveraged amount of the vertical component. As Wray (1998, 111) writes, “[o]ne can conceive of a vertical component of the money supply process that consists of the government supply of fiat money; money drops vertically to the private sector from government. ... On the other hand, the bank-money-supply process is horizontal; it can be thought of as a type of ‘leveraging’ of the hoarded vertical fiat money.” Mosler and Forstater (1999, 168), for their part stipulate that “[h]orizontal activity represents leveraged activity of a vertical component. ... The creation of bank loans and their corresponding deposits is a leveraging of the currency.” A figure, illustrating this leveraging of a vertical component is also presented by Wray (1998, 112), who explicitly refers to high-powered money, as well as William Mitchell and Joan Muysken (2008, 214). The use of this terminology has certainly created some confusion in the minds of heterodox authors (i.e., Steve Keen, in Fullwiler's comment above, as well as Febrero 2009; Parguez and Seccareccia 2000, 120; Rochon and Vernengo 2003, 61). Indeed, heterodox authors, relying on the book of Basil Moore (1988), tend to associate a verticalist component with an exogenous money supply, while linking leveraging with the money-multiplier story that Mosler (1994) had previously discarded. For those familiar with the works of neo-chartalists, it is clear that these authors do not endorse anything close to exogenous high-powered money or a money-multiplier mechanism. Instead, what they refer to is a stock of private-net financial assets, equivalent in a closed economy to the stock of public debt (government securities plus high-powered money) (Mosler and Forstater 1999). But then it is unclear why such stocks “leverage” private assets. It is hard to see how anything can be gained by making references to vertical, or leveraged vertical, components, yet these expressions are still in use.¹³

Another problematic statement is that the government has to run deficits, at least over the long run, so that the public may get access to larger cash balances (high-

powered money). As Wray (1998, 123) puts it, “persistent deficits are the expected norm,” that is, “normally, taxes in the aggregate will have to be less than total government spending due to preferences of the public to hold some reserves of fiat money” (Wray 1998, 81). If the government was running persistent surpluses, the public would “run out of net money hoards” (Wray 1998, 79). While it would seem that government deficits in a growing environment are appropriate – as it provides the private sector with safe assets to grow in line with private, presumably less safe, assets – it is an entirely different matter to claim that government deficits are needed because there is a need for cash. Even if the government kept running balanced budgets, central bank money could be provided whenever the central bank makes advances to the private sector. Wray (1998, 79-80) himself recognizes this as he adds that “a surplus on the Treasury’s account is possible as long as the central bank injects reserves through purchases of assets or through loans of reserves.” As Fullwiler (2010B, 3) clarifies, what Wray and others have in mind is that total government expenditures include “spending” by the central bank, when the central bank purchases private assets or claims on the private sector and adds them to the asset side of its balance sheet. This, however, is an odd way to define government spending.

While the terminology problem is easy to solve, things may not be so simple with the oft-made statement that “government spends first.” This expression serves as a leitmotiv on many of the blogs devoted to modern monetary theory, but it is also integral to academic writings. As Mitchell and Muysken (2008, 209) write, “[g]overnment spends simply by crediting a private sector bank account at the central bank. Operationally, this process is independent of any prior revenue, including taxing or borrowing.” Tcherneva (2006, 78), for her part, posits that “[t]he government spends simply by writing Treasury cheques or by crediting private bank accounts.” But these statements are at best misleading. They skip one fundamental step that makes incomprehensible the leitmotiv sentence that “government spends first.” Any agent must have funds in a banking account: Before being able to spend, the treasury must somehow replenish its deposit account at the central bank (or at private banks).

Many neo-chartalists skip this step because they prefer to consolidate the central bank and the federal government into one entity, the state. Such a consolidation, in itself, is not illegitimate. Other authors, including Wynne Godley (1999B), have occasionally consolidated the central bank with the government. But such integration may not be appropriate for the purpose at hand, as it confuses the readers who already have a hard time understanding the mechanics of the clearing and settlement system and who are accustomed to distinguishing the government from its central bank. Wray has been a leading advocate of consolidation, believing that it makes things simpler. “The only logic that is necessary to grasp is that the state ‘spends’ by emitting its own liability ... by crediting reserves to the banking system” (Wray 2002, 32). Yet, he himself recognizes that this is leaving many of his colleagues confused. “A central bank might buy treasury debt and credit the treasury’s deposit at the central bank, but this has no impact on banking system reserves until the treasury uses its deposits. ... Hence, strictly internal actions involving only the central bank and

treasury should be ignored, which is the main justification for consolidating their accounts. ... Many economists find all this very confusing” (Wray 2003, 92).¹⁴ So, with the treasury and the central bank consolidated, the first step – the sales of government securities to the central bank – is being skipped since this is an internal transaction.

If one accepts to consolidate the central bank and the government into a single entity, then some other highly controversial claims make more sense. As already pointed out in this section, neo-chartalists make the rather surprising claim that neither taxes nor borrowed funds finance government expenditures. They make this statement again and again:

The Treasury does not “need” to borrow in order to deficit-spend. (Wray 1998, 117);

Taxes do not finance spending. (Forstater and Mosler 2005, 538);

Neither taxes nor bonds really finance government spending, on any reasonable definition of the term “finance.” (Bell and Wray 2002-2003, 269);

It certainly *looks* as though the purpose of taxing and selling bonds is to fund expenditures. ... Thus, taxes can be viewed as a means of creating and maintaining a demand for the government’s money, while bonds ... are a tool that allows positive overnight lending rates to be maintained. (Bell 2000, 613-614);

In other words, government spends simply by crediting a private sector bank account at the central bank. Operationally, this process is independent of any prior revenue, including taxing and borrowing. (Mitchell and Muysken 2008, 209).

Such claims arise from the assumption of consolidation, in addition to the statement that governments sell their securities to their central bank or obtain advances from the central bank.

Table 1 illustrates the neo-chartalist view of how central governments can finance their expenditures when they are endowed with a sovereign currency. The first step, on the first row of the table, involves only the government and the central bank, while the treasury issues and sells securities which are purchased by the central bank. This is the step that neo-chartalists often skip since they consolidate the government and the central bank into a single unit.¹⁵ Here, the assumption is that one hundred monetary units (dollars, pounds sterling) are being newly issued and sold. The second step involves the private banking sector, when the government spends the one hundred monetary units by paying, for example, its civil servants. In the process of this transaction, the government deposits in the central bank get transferred to the

civil servants' deposits in commercial banks. As these payments go through the clearing and settlement process, commercial banks acquire settlement balances at the clearing house. These balances will then need to be deposited as balances on the commercial banks' account in the central bank at the end of the day, thus transforming into bank reserves of one hundred monetary units. Unless the central bank conducts some compensating operation, there is nothing that the commercial banks in aggregate can do to get rid of these extra reserves. The third step in Table 1 is the result of such a compensating operation. The assumption here is that households keep ten monetary units in the form of banknotes, while keeping ninety units in the form of deposits. I also assume that there is a 10 percent compulsory reserve requirement on deposits in the commercial banks. Once households have taken out ten units in the automatic teller machines, with the central bank providing the cash needed to be replaced, commercial banks are still left with ninety units of reserves, and hence 81 units of excess reserves, which will be wiped out, in this case, by open market operations. That is, the commercial banks' deciding to acquire 81 units of treasury bills will give them an interest return, rather than holding reserves which provide no return at all, or a return which presumably would be lower than that on treasury bills.¹⁶

Table 1. The Neo-Chartalist View of Government Deficit-Spending

Central bank		Commercial banks	
Asset	Liability	Asset	Liability
Treasury bills +100	Government deposits +100		
Treasury bills +100	Deposits of banks +100	Reserves +100	Household deposits +100
Treasury bills +19	Deposits of banks +9 Banknotes +10	Reserves +9 Treasury bills +81	Household deposits +90

The surprising result of such a process of government deficit-spending is that unless the central bank engages into compensating operations, the government deficit will drive down overnight rates of interest, or as Mosler (1994, 12) puts it, “deficit spending ... would cause the fed funds rate to fall.” At first sight, this may appear to be a rather strange statement.¹⁷ Economists are so accustomed to the loanable-funds approach and to the IS/LM framework – where an increase in government expenditures tends to drive up interest rates – that it is difficult for them to shake off established theoretical habits. However, a proper understanding of the payment system reveals that it cannot be otherwise. When the government pays for its expenditures *through its account at the central bank*, settlement balances (reserves) are added to the clearing system. This tends to reduce the overnight rate, as banks are left with excess reserves that no other bank would borrow.¹⁸ Keeping the rate at its target level requires a defensive intervention of the central bank.

It is interesting to note that Joan Robinson articulated the same point many years ago, so that it qualifies her for consideration as an honorific developer of modern monetary theory.¹⁹ She wrote that “[a] budget deficit financed by borrowing

from the Central Bank has effects similar to those of gold-mining. ... For the Central Bank, in lending to the government, increases the 'cash' of the banks, just as it does by buying securities or by buying gold. ... The increase in the quantity of money, which takes place cumulatively as long as the deficit is running, will tend to produce a fall in the rate of interest" (Robinson 1937, 88). Similarly, Wynne Godley and Francis Cripps (1983) were very much aware of the relationship between the government, the central bank, and reserves. "The central bank has to fund the government's operations but this in itself presents no problems. Government cheques are universally accepted. When deposited into commercial banks the cheques become 'reserve assets' in the first instance; banks may immediately get rid of excess reserves by buying bonds" (Godley and Cripps 1983, 158).

Naturally, if the government levies taxes, these effects go in reverse gear. As the taxes are collected and the proceeds sent to the account of the government at the central bank, the aggregate amount of settlement balances held by banks, are brought to a negative position and commercial banks lose reserves, thereby driving the overnight interest rate up.²⁰ Thus, it becomes easier to understand Stephanie Bell's claim that "taxes can be viewed as a means of creating and maintaining a demand for the government's money, while bonds ... are a tool that allows positive overnight lending rates to be maintained" (Bell 2000, 613-614). As long as one accepts the premises of Table 1, one would agree that the government could initially finance its expenditures by selling securities to its central bank. Taxes are raised to restrain aggregate demand, while government securities are sold to the private sector to stop overnight rates from falling to the floor. But while economists would certainly agree on the consequences of such a setup within the clearing and settlement system, should they also conclude that taxes and security issues do not finance government expenditures? Is such a claim helpful in understanding the financing process? In particular, it is clear that for the government to proceed with its expenditures, securities must be sold to someone, if only to the central bank? Also, could economists still make the same claims if central banks cannot directly purchase government securities? This paper tackles this question in the next section.

Variations of the Neo-Chartalist Main Story

So far I have assumed that the central bank was free to purchase government securities on the primary market, or else, was allowed to make direct advances to the central government. But what if this is not the case? Elsewhere I (Lavoie 2003) have argued that one also ought to consider a "post-chartalist" alternative, where the central government would start the spending process by issuing securities to be auctioned to the private sector.²¹ Table 2 reproduces the same three steps of Table 1, but it starts with government security sales to the commercial banks.²²

As in Table 1, the first step only deals with the security sale and the second step assumes again that the government pays its civil servants. The government balances at commercial banks are then brought down to zero, while those of households rise by one hundred, as shown in the second row of Table 2. I further assume, as in Table 1,

that households transform ten units of their deposits into banknotes, and that banks are subjected to a 10 percent compulsory reserve ratio on deposits. To acquire the needed 19 units of high-powered money, banks need to sell 19 units of treasury bills to the central bank. The latter needs to accommodate the demand for high-powered money because the central bank provides all cash on demand, and it must remove excess reserves in order to achieve its target overnight rate. The end result of this process, as shown in the third row, is no different from the one observed in Table 1. The commercial banks hold 81 units of treasury bills and the central bank holds 19 units of treasury bills, which correspond to the increase in the demand for central bank money.

Table 2. The Post-Chartalist View of Government Deficit-Spending

Central bank		Commercial banks	
Asset	Liability	Asset	Liability
		Treasury bills +100	Government deposits +100
		Treasury bills +100	Household deposits +100
Treasury bills +19	Deposits of banks +9 Banknotes +10	Reserves +9 Treasury bills +81	Household deposits +90

While the end results of the two processes illustrated in Table 1 and Table 2 are identical, provided all goes as expected, the processes themselves are different. But which description would be the most likely one? Several years ago I wrote in this regard:

Each view may correspond better to the existing institutional arrangements. In Europe, with the new European Central Bank, central governments just cannot sell any of their newly-issued securities to their national central bank or to the European Central Bank. They must sell their bonds or bills to the private banks. Similar rules apply in the United States. "The Federal Reserve is prohibited by law from adding to its net position by direct purchases of securities from the Treasury - that is, the Federal Reserve has no authority for direct lending to the Treasury. As a consequence, at most the Desk's acquisition at Treasury auctions can equal maturing holdings" (Akhtar 1997, 37). Thus, at least in Europe or in the United States, the post-chartalist view may seem to apply best on this issue. (Lavoie 2003, 528)

Neo-chartalists usually give the USA or Japan as the standard example of nations with sovereign currencies. However, even the USA may not be a perfect example of a nation endowed with a sovereign currency. The USA has two self-imposed limits. First, the Fed can only "buy directly and hold an additional 3 billion dollars of obligations of the Government for each agreed period[.]"²³ This means, as Akhtar (1997) points out, that the Fed can mainly purchase federal debt on secondary

markets, and not on the primary market. Thus it would seem that Table 2, the post-chartalist view, is a better representation of the U.S. case. Second, as most readers may now be aware since the debt ceiling crisis of July 2011, Congress has set a limit on the total amount of debt that the U.S. government can take. This ceiling must be raised periodically, and it will most likely generate another political crisis in the future. Bell and Wray (2002-2003, 270), recognize these limitations when saying that “most nations have opted for self-imposed constraints. These include both ‘no overdraft’ provisions for the Treasury as well as ‘debt ceiling’ legislation.”

Despite this, Bell and Wray (2002-2003, 266) hold on to the idea that Table 1 best expresses the U.S. case and criticize those who bring up the issue of self-imposed constraints. They also put forth the view that consolidating the Fed and the government allows for the abstraction of these restrictions: “Post Keynesians like Lavoie (2003) and van Lear (2002-2003) are misled by formal prohibitions on the Treasury. Yes, the Treasury is prohibited from physically ‘printing money’ and from selling bonds directly to the Fed. ... We prefer to consolidate the Fed and the Treasury, and leave the minutiae of coordination between them to the side.”²⁴ Wray (2001, 21) goes on to add that my “distinction between neo- and post chartalist is not helpful.” He seems to suggest that the operations described in Table 2 – the post-chartalist sequence – is a mere procedure “to avoid the huge fluctuations of reserves that would otherwise result from timing mismatches between receipt of tax payments and emissions of Treasury checks” (1998, 21). It may be so in the United States, but it is not the case everywhere, certainly not in the eurozone.

Neo-chartalists, however, have put some water in their wine, as the French say, admitting now that things are not as clear-cut as they originally seemed. Two recent blog comments by neo-chartalist leaders serve to ascertain just that. The first comment recognizes that there is no logical necessity in arguing that government spending must occur before taxes are levied. “I have always bucked the tendency of many on the MMT side to argue that the Treasury sells bonds *ex post*, in order to drain excess reserves. ... My position has always been more nuanced. The Treasury coordinates its operations (spending, taxing and bond sales) in order to minimize disruption in the private banking system. In absence of coordination, banks would constantly see large swings in their reserve holdings, and this would be disruptive. In essence, it would force the Fed to intervene on a much larger scale” (Kelton 2010). The second comment recognizes that the U.S. government may need to borrow from the private sector before it can spend. So, it is not clear anymore that taxes and bond issues do not finance government expenditures. “The easiest thing to do would be to sell them [bonds] directly to the Fed, which would credit the Treasury’s demand deposits at the Fed. ... But current procedures prohibit the Fed from buying treasuries from the Treasury. ... [I]nstead[,] it must buy treasuries from anyone except the Treasury. That is a strange prohibition to put on a sovereign issuer of the currency. ... It is believed that this prevents the Fed from simply ‘printing money’ to ‘finance’ budget deficits so large as to cause high inflation” (Wray 2011C).

What seems to truly happen in the USA (omitting the role of primary dealers for simplification) is thus illustrated by Table 3, which reproduces in T-accounts the

sequence most recently described by Wray in the same blog. “So, instead, the Treasury sells the treasuries to the private banks, which create deposits for the Treasury that it can then move over to its deposits at the Fed. And then ‘Helicopter Ben’ buys treasuries from the private banks. ... The Fed ends up with the treasuries, and the Treasury ends up with the demand deposits in its account at the Fed – which is what it wanted all along, but is prohibited from doing directly” (Wray 2011C). In the first step, as in Table 2, the government sells its securities to the commercial banks.²⁵ In the second step, the government deposits are shifted from the commercial banks to the central bank, thus creating a negative reserve position for banks. The central bank then takes defensive compensatory measures, purchasing back the treasury bills on the secondary markets (or through repos), and thus eliminating the deficiency in bank reserves at the Fed.

Table 3. The Modified Neo-Chartalist View of Government Deficit-Spending

Central bank		Commercial banks	
Asset	Liability	Asset	Liability
		Treasury bills +100	Government deposits +100
	Government deposits +100 Bank deposits -100	Treasury bills +100 Reserves -100	Government deposits 0
Treasury bills +100	Government deposits +100	Treasury bills 0 Reserves 0	Government deposits 0
Treasury bills +100	Deposits of banks +100	Reserves +100	Household deposits +100
Treasury bills +19	Deposits of banks +9 Banknotes +10	Reserves +9 Treasury bills +81	Household deposits +90

But things do not stop there. The government issued securities because it had expected to deficit-spend. Thus, there are fourth and fifth steps that are identical to the second and third steps described in Table 1. As Wray (2011C) goes on, “the Treasury then cuts the checks and makes its payments. Deposits are credited to accounts at private banks, which simultaneously are credited with reserves by the Fed. ... This tends to push the Fed funds rate below the Fed’s target, triggering an open market sale of treasuries to drain the excess reserves. The treasuries go back off the Fed’s balance sheet and into the banking sector.” The fourth and fifth rows of Table 3 show this process. The Fed would keep some of the treasury bills if there is an additional demand for reserves or banknotes, as previously assumed in this paper.

The purpose of this whole exercise is to show that there is no point in making the counter-intuitive claim that securities and taxes do not finance the expenditures of central governments with a sovereign currency. Even in the case of the U.S. federal government, securities need to be issued when the government deficit-spends, and these securities initially need to be purchased by the private financial sector. The consolidation argument – the consolidation of the central bank with the government – cannot counter the fact that the U.S. government needs to borrow from the private sector under existing rules.²⁶ Thus, even if the USA does not fully fit the bill, one may

wonder whether there is any other nation that corresponds to the strictures of neo-chartalism.²⁷ Ironically, there is another country which more closely resembles the neo-chartalist depiction of Table 1. Canada looks pretty close to the definition of a country with a sovereign currency, although it seems to be rather exceptional:

Canada is unique among the sovereigns investigated in that the Central Bank can participate at auction without restriction and not as an add-on. ... The Bank of Canada participated up to 15 percent in nominal bond auctions and up to 25 percent for treasury bill auctions. During the evaluation period, the Bank of Canada participated at a constant 10 percent of all 2-year auctions and 15 percent of all 5-year auctions. The minimum purchase by the Bank of Canada changed in the 10-year and 30-year sectors from 10 to 15 percent in January 2008. (Department of Finance Canada 2011)

Furthermore, to keep their status, Canadian primary dealers *must* purchase *all* that is being issued on the primary market, at least, at a price barely lower than that of secondary markets.²⁸ One could thus argue that Canada has the highest degree of currency sovereignty, since its central bank is unhindered by regulations, its public debt is issued in Canadian dollars, and its exchange rate regime is of the pure float variety (i.e., the central bank has not intervened in foreign exchange markets since the late 1990s).²⁹

Regardless of the precise institutional rules that exist in countries such as Canada or the United States, it seems clear that in these countries it is possible for the central banks to set interest rates and even long-term rates on government securities. This is so because the central banks of these two countries do intervene on secondary markets. More effective control could even be attained if the central banks were to announce the target long-term rate of interest and make known their willingness to purchase unlimited amounts. “[T]hat is, if the Fed desired a decline in treasury rates, it could only be sure to achieve this by announcing the desired new rate and standing ready to buy all treasuries offered at the corresponding price” (Fullwiler and Wray 2010, 9).³⁰ Indeed, between 1942 and 1951, the Fed pegged both short-term and long-term rates on government securities, offering to purchase any security at the prescribed price (Moe 2012, 26). To those who object that this would raise the amount of bank reserves and produce inflation, the counter-answer is that in a corridor system where the target interest rate is the floor rate (the rate paid on deposits at the central bank), bank reserves can be of any size, as the subprime financial crisis has now demonstrated (Lavoie 2010).

In a nutshell, as long as the other characteristics of a “sovereign currency” are fulfilled, it makes little difference, as the cases of Canada and the USA illustrate, whether the central bank makes direct advances and direct purchases of government securities or whether it buys treasuries on secondary markets, as long as the central bank shows determination in controlling interest rates. As Fullwiler (2010B, 5) points out, “there is no economically meaningful difference from the Treasury’s perspective

between the government enabling itself to obtain an overdraft and the government forbidding itself from doing so.” But then, if it makes no difference, why do neo-chartalists insist on presenting their counter-intuitive stories, based on an abstract consolidation and an abstract sequential logic, deprived of operational and legal realism?

Neo-Chartalism and the Eurozone

In contrast to the USA and Canada, the eurozone countries, with their European Central Bank (ECB) and their sets of national central banks (the Eurosystem), have a rather low degree of currency sovereignty. Various rules to be found in the guidelines and procedures of the European Central Bank (ECB 2011), going as far back as the 1992 Maastrich Treaty, encumber the behaviour of the ECB and the national central banks. They cannot make advances to national governments, nor can they purchase government securities on primary markets.³¹ The main refinancing (liquidity creating) operations of the ECB and the national central banks occur in the form of reverse transactions (repos) or, more simply, as collateralized loans. Outright transactions on secondary markets (which would be called open market operations by Anglo-Saxon economists) are deemed to be irregular and exceptional.³² It was further understood that the ECB and the national central banks would not conduct open market operations at all, neither would they purchase government securities on secondary markets, for instance, to assist eurozone countries having difficulties in servicing their debts or financing their deficits.³³ Finally, although the European monetary authorities are allowed to take government securities as collateral when providing liquidity to banks, it can only be done if that debt is highly rated. With these self-imposed restrictions and customs, the ECB and the Eurosystem is a pure *overdraft* system – that is, a system where the central bank only provides advances to the commercial banks, holding no government securities whatsoever. Indeed, for the first ten years following the creation of the eurozone, outright holdings of government debt by the central banks of the Eurosystem were equal to nought.

To their credit, I must say that various neo-chartalists and their allies have from the start announced that the eurozone, as set up and described above, was a very dubious institutional experiment (Wray 1998, 92). This is so because sovereign debt from the eurozone countries was no longer default risk-free, transforming national countries into the equivalent of local governments. Godley (1992) lamented early on about the absence of a powerful fiscal federal authority, but also argued that the inability of countries to take advances from their central banks within the one-currency European Union was tantamount to reverting to the status of a local government, with no national independence.³⁴ Elaborating on this, Bell (2003) adds that the monetary arrangements of the eurozone were totally inconsistent with functional finance and that they would put member countries at the mercy of financial markets by forcing them to adopt austerity measures whenever their fiscal position did not fit the desires of financial operators (a point also made by Parguez 1999). More recently, Kelton and Wray (2009) argued that the rising cost of credit

default swaps on the sovereign debt of eurozone countries was justified. They contended that these countries had no monetary means to avoid defaulting if self-reinforcing fears led to rising bond yields, because the ECB would decline to intervene and purchase government securities. The title of their paper – “Can Euroland Survive?” – hit the mark, at a time when markets were somewhat worried but still calm, because it was written before the explosion in Greek and Irish bond yields at the beginning of 2010.

Most economists, myself included, were rather sceptical of all these arguments, believing that the European politicians and central bankers would abandon their dogmas and change their rules should events force them to realize their mistakes. It is a bit like what happened on a worldwide scale in late 2008 and early 2009, when, faced with negative growth rates, many governments decided to embark on a Keynesian stimulus program despite having sworn their attachment to sound fiscal policies. In the subsequent crisis, European central bankers eventually changed their tune as well (somewhat), although too late, when bond yields had already reached catastrophic levels. Indeed, despite the objections of the German financial press and the Bundesbank, the ECB decided to override its own conventions in an effort to stop bond yields from rising, when it announced on May 10, 2010, that it would proceed to purchase Greek bonds on secondary markets. The ECB then claimed that exceptional circumstances in financial markets were hampering the monetary policy transmission mechanism and jeopardizing the policy of price stability. These required a temporary programme for outright interventions on secondary securities markets, called the Securities Markets Programme. Similar measures then had to be taken for Portuguese and Irish bonds. The inanity of the ECB’s self-imposed restrictions were exposed again when on the August 8, 2011, the bank announced that it would also purchase Spanish and Italian bonds, once more, to avoid rising yields.

Furthermore, the ECB had to modify its eligibility criteria. The required rating for repos or collateralized credit was originally A-, and this requirement was reasserted in November 2005 in an ECB’s effort to impose fiscal discipline on eurozone countries through market-rating mechanisms. However, the required rating was reduced to BBB- in October 2008, with the advent of the subprime financial crisis. Credit rating requirements were then entirely suspended for securities issued by the Greek government in May 2010. The same change took place in March and July 2011 for securities issued by the Irish and the Portuguese governments respectively, again on the ground that “exceptional circumstances” were prevailing in the financial markets. The rating requirements had to be dropped, for otherwise the banks of the concerned countries would have become illiquid, forcing them either to proceed to fire asset sales or to default at settlement time, thereby jeopardizing the entire eurozone payment system. The current events have certainly vindicated the fears of neo-chartalists and their allies.

When Standard and Poor’s decided to downgrade the U.S. government debt on August 6, 2011, from AAA to AA+, yields on 10-year U.S. government bonds actually fell to two percent, and even lower afterwards. These same yields were around 3.3 percent a few months before the downgrade. In the case of Japan, which Standard

and Poor's had downgraded to AA- on January 27, 2011, the yield on 10-year Japanese bonds was at one percent despite a public debt to GDP ratio exceeding two hundred percent. Obviously, markets are confident that Japan and the USA have the capacity and ability to make interest payments on whatever amount of public debt their governments could accumulate. Default for these two countries seems virtually impossible, as neo-chartalists claim. This, however, is not the case for several eurozone countries. At the same time, in August 2011, despite the lower debt ratios in some of the European countries, yields on 10-year bonds in Greece, Portugal, and Ireland varied between 10 and 15 percent. The yields were between five and six percent for Italy and Spain respectively. In the case of Canada, with admittedly a lower debt ratio, these same yields were at 2.4 percent at the time. However, the UK managed to keep its long-term interest rates at 2.5 percent, despite a higher public debt to GDP ratio than that of Spain as well as a higher public deficit to GDP ratio.³⁵ What difference is there between Canada, the United States, the United Kingdom, and Japan, on one hand, and the European countries within the eurozone, on the other?

The Eurozone Setup

Table 4 illustrates the eurozone monetary and fiscal nexus, assuming again that the government deficit-spends one hundred monetary units, with households keeping ten of their additional money balances in the form of banknotes, and with banks being subjected to a 10 percent reserve requirement ratio. Assuming that each national central bank is the fiscal agent of the government, the first two rows of Table 4 are identical to those of Table 3, as the funds obtained from the sale of the securities are brought back on the account of the government at the central bank.³⁶ In the third row, the government deficit-spends, households acquire banknotes, and the central bank accommodates the demand for reserves and banknotes. The third row shows that there is a systemic need for commercial banks to borrow from their national central bank since central banks do not normally purchase government securities in either the primary or the secondary markets.³⁷ The last row of Table 4 shows that commercial banks need to borrow the reserves that they hold at the central bank and the banknotes demanded by their customers. This means, in contrast to the neo-chartalist depiction illustrated by Table 1, that government deficit-spending will tend to raise overnight interest rates, *unless* the central banks proceed to liquidity-providing operations. Once again, it needs to be stated that this feature of the eurozone system is in no way detrimental to neo-chartalist theory since neo-chartalists have always made clear that the eurozone did not abide by the conditions of a sovereign currency. As pointed out by an ECB banker, "the euro area is in fact the only area in the world where monetary and fiscal institutions are completely separate, in which the fiscal authority cannot count on the monetary authority, not only to prevent a solvency problem, but also a liquidity problem" (Bini Smaghi 2011, 3).

In general, the European central bank and its national central banks would provide central bank money on demand. The problem in the eurozone is not that money is exogenous. Money there is clearly endogenous.³⁸ The problem is entirely

linked to the rules and conventions that forbid or strongly discourage the ECB and the national central banks of the eurozone to purchase government securities on primary or secondary markets. As shown in Godley and Lavoie (2007B), interest yields of the securities issued by the various governments of the eurozone are likely to diverge unless the ECB departs itself from the securities that are in high demand on private markets and instead purchases the securities that are in low or no demand on private markets. In other words, the ECB has to act as a residual buyer or seller of eurozone government securities. Otherwise, the eurozone governments would be at the mercy of the financial markets' whim. Granting banks unlimited amounts of (three-year) loans, as the case was during the two long-term refinancing operations of late 2011 and early 2012 so that banks would buy sovereign debt, cannot act as a substitute for central banks' purchases of government securities.³⁹ The problem with the eurozone does not arise from the operations of the clearing and settlement system, the TARGET2 system. TARGET2 was, in fact, well-conceived.

Table 4. The Eurozone Case of Government Deficit-Spending

National central bank		Commercial banks	
Asset	Liability	Asset	Liability
		Treasury bills +100	Government deposits +100
	Government deposits +100	Treasury bills +100	Government deposits 0
	Bank deposits -100	Reserves -100	
Advances to domestic banks +19	Deposits of banks +9	Reserves +9	Household deposits +90
	Banknotes +10	Treasury bills +100	Advances from central bank +19

This can be confirmed by the analysis of capital flight out of the southern towards the northern countries of the eurozone, which has occurred with the advent of the global financial crisis. Deposit holders have been moving their balances from southern to northern banks of the eurozone, fearing default on the sovereign debt of south-European countries, and worrying that the commercial banks in these states would endure heavy capital losses, defaulting as a consequence.⁴⁰ It also turns out that several of the south-European countries, currently under pressure from speculators, experience a negative current account balance within the eurozone. Normally, such imbalances would be absorbed by northern banks granting loans to southern banks of the eurozone, which process would continue unhindered as long as the borrowing banks remain creditworthy. Indeed, the short-term net external position of banks acted as the main offsetting factor in the balance of payments within the eurozone. What is now happening is that northern banks are declining to provide loans to the southern banks through the overnight market or other more long-term wholesale markets. Still, the clearing and settlement system continues to function. How can that happen?

Table 5. Eurozone Clearing and Settlement System without Active Overnight Markets

Banca Nazionale del Lavoro (BNL)		Bank of Italy (BI)		Deutsche Bank (DB)		Bundesbank (BB)		ECB	
Asset	Liability	Asset	Liability	Asset	Liability	Asset	Liability	Asset	Liability
Deposit importer		Advance to BNL	Advance from BB	Reserves at BB	Deposit exporter	Advance to BI	Deposit of DB		
-10		+10	+10	+10	+10	+10	+10		
Advance from BI	+10								
Deposit importer		Advance to BNL	Due to the eurosystem		Deposit exporter	Claims on the Eurosystem		Debit position of BI	Credit position of BB
-10		+10	+10		+10	+10		+10	+10
Advance from BI	+10				Advance from BB	Advance to DB			
					-10	-10			

Suppose that some Italian company imports goods from Germany and makes its payment through its Italian bank – i.e., the Banca Nazionale de Lavoro (BNL). The payment goes through TARGET2, and ends up as a credit on the account of the German exporting firm, at its German bank – i.e., the Deutsche Bank (DB). At this stage, the Italian bank has a debit position at the Bank of Italy, while the German bank has a credit position at the Bundesbank. Furthermore, the Bundesbank debits the account of the Bank of Italy. All this occurs smoothly as national central banks of the eurozone provide unlimited and uncollateralized lines of credit to each other. All these debit and credit accounts are recorded on the first row of Table 5.⁴¹ However, by the end of the day, national central banks must also settle with each other. All the debits and credits are netted on the books of the ECB, where each national central bank then acquires a net position vis-à-vis the rest of the European System of Central Banks (ESCB). This is shown on the second row of Table 5. Moreover, most likely, the Deutsche Bank will use its positive clearing balances (or reserves) to reduce its overdraft position vis-à-vis the Bundesbank.⁴²

I should note here that there is no limit to the debit position that a national central bank can incur on the books of the ECB; that is, its liabilities with respect to the rest of the Eurosystem are not limited. “These liabilities can be carried indefinitely as there is no time prescribed for the settlement of imbalances” (Garber 2010, 2). Additionally, national central banks in debit are charged the main official rate, which is also the rate gained by those with claims on the Eurosystem. Thus, these imbalances could go on forever, as (coming back to the example) the BNL would be taking advances from the Bank of Italy at 1.5 percent (if this is the main refinancing rate), while the Bank of Italy would be accumulating liabilities within the eurosystem at the same pace, also at 1.5 percent interest rate. Thus, if there is some lack of confidence in the system, one should observe an increase in the size of the balance sheets of the central banks of the countries under suspicion. There would also be an increase in the size of the balance sheet of the ECB.⁴³

Conclusion

Neo-chartalism, or modern monetary theory, has gained prominence on the web, and it has attracted the attention of several non-economists who have a passion for monetary matters. But there is also a great deal of resistance to the ideas promoted by neo-chartalists, even among heterodox authors, as some of the neo-chartalists’ claims appear rather counter-intuitive and have often been defended with some unscholarly vigour. The resistance to the ideas of modern monetary theory is not entirely surprising because, besides its novelty, modern monetary theory is compatible with the horizontalist version of post-Keynesian monetary economics, also a subject to some resistance by heterodox authors.

This article focused on the nexus between the clearing and settlement system and the financial requirements of government expenditures. The main message channelled here was that the neo-chartalist monetary analysis is essentially correct. In particular, I argued that the framework of modern monetary theory has been

validated by its analysis of the main flaws of the eurozone setup, long before these flaws became apparent with the eurozone's economic-crisis advent in 2010. The main monetary defect of the eurozone is that the Eurosystem is a pure overdraft system, with the ECB being prevented (mainly by custom, not so much by rules) from purchasing and selling government securities as it sees fit, in contrast to what occurs in the UK, the USA, Canada, and Japan.⁴⁴

However, neo-chartalism tries to achieve too much. While attempting to convince economists and the public that there are no financial constraints to expansionary fiscal policies (except artificially erected ones), neo-chartalists end up using arguments that become counter-productive. There is little or nothing to be gained from contending that government can spend by simply crediting a bank account; that the treasury can act as if it were a bank; that government expenditures must precede tax collection; that the creation of high-powered money requires government deficits in the long run; that central bank advances can be called public spending; or that taxes and issues of securities do not finance government expenditures. This entire list of counter-intuitive claims follows a logic, premised on the consolidation of the government's financial activities with the central bank's operations, thereby modifying standard terminology. Such a consolidation leads to omitting crucial steps in analysing the nexus between the government activities and the clearing and settlement system, to which the central bank partakes. Ultimately, it all leads to confusion and misunderstandings, as do references to a leveraged vertical component of the money supply.

Neo-chartalists made an important contribution to monetary theory by showing that the neoclassical story was counter-factual and did not correspond to actual institutions. But MMT now brings itself to an end with a theory dependent on the counter-factual consolidation of the government and the central bank. This goes beyond a mere debate of (over-)simplification. The consolidation premise does not describe reality and it twists standard terminology. Facing readers' accusation of taking counterfactual descriptions for factual accounts, neo-chartalists respond to their critics by splitting their contributions into two parts. On one side, there is a theoretical *general* case (based on consolidation) which should be simple, convenient, and useful, and which is presumably the most insightful framework for economic analysis and for instructing beginners. On the other side, there are *specific* operational and legal procedures which neo-chartalists have described in minute detail and which complicate the story altogether (Fullwiler 2010B). Yet, whatever the specifics, neo-chartalists hold on to the view that the results of the general case remain all intact (Fullwiler, Kelton and Wray 2012).

The counterpoint to this new MMT position is that one cannot start from the general case, based on consolidation, because it is antinomic to the real world and to existing institutions, and it would lead to mistaken advice and confusion.⁴⁵ Indeed, for the presumed consolidation-based general case to be fully valid, substantial reforms to existing laws and institutions would be required (Fiebiger 2012B). Learned critics of neo-chartalism approve of its description of actual specifics, but reject this general case as inappropriate lens to observe reality. "The basic problem is that MMT

thinks it can get away with conflating the general case into a description of real world monetary operations” (JKH 2012B). The devil is in the details. Specifics are relevant. Take the eurozone, for instance. All things considered, as this paper indicated, the *only* major discrepancy between the Fed and the ECB is that the latter normally does not purchase sovereign debt on secondary markets. Neither of them is allowed to make advances to governments and to purchase securities on primary markets. Both of them provide high-powered money to banks on demand. Still, even a single specific institutional feature makes a huge difference.

The proponents of modern monetary theory have forced post-Keynesians to dwell on the details of the clearing and settlement system, and to take into consideration the role of government in the payment system. Before that, however, post-Keynesians had focused almost exclusively on the relationships between commercial banks and the central bank, or on the links between commercial banks and private borrowers. Modern monetary theory is certainly an improvement, but in order to convince more economists of the validity of their analyses, the advocates of this theory should give up the counter-productive statements and the convoluted logic associated with the fictitious consolidation of government and the central bank.

Notes

1. Interestingly, a group of former MMT blog sympathizers (at *Pragmatic Capitalism*) have created their own version of MMT, called MMR (modern monetary realism). (Among others, see JKH 2012A.)
2. See Bill Mitchell or his Billy Blog (available at <http://bilbo.economicoutlook.net/blog/>); Warren Mosler and his Center of the Universe (available at <http://moslereconomics.com/>); and also the UMKC academic staff and their New-Economic-Perspectives blog (available at <http://neweconomicperspectives.org/>). Several current and former students at UMKC are participating in the effort to influence the blogosphere. Randall Wray (2012) even wrote a book on line, posting a chapter a week, and asking his readers to comment on them not just to improve on the book, but also to receive an input on explaining the MMT in simpler terms.
3. There has been some controversy regarding this statement since it requires the consolidation of the household and the corporate sectors. Obviously, the household sector can accumulate financial assets if the corporate sector borrows to invest in new physical capital goods, without the public sector going into deficit. A topic that will need to be tackled in the future is the implication of government deficit-spending over the long run, when the economy is back to full employment, in an appropriate stock-flow consistent framework. A first effort at discussing this may be found in Godley and Lavoie (2007A), Bill Martin (2008), Muriel Pucci and Bruno Tinel (2010), as well as Soon Ryoo and Peter Skott (2011).
4. A possible fifth topic of neo-chartalism, because of its links with the work of Hyman Minsky, could be the issue of financial instability, as well as its causes and remedies, in particular that the public sector needs to stabilize an unstable economy.
5. A related neo-chartalist theme is the determination of interest rates, in particular the target overnight interest rate, since some neo-chartalists argue that this rate, in nominal terms, ought to be zero (Forstater and Mosler 2005). (But I will not discuss this herein.)
6. Thus, neo-chartalists are in favour of flexible exchange rates, whereas several other post-Keynesians, but certainly not all, favour instead fixed exchange rate regimes. “In a very real sense, a country that adopts fixed exchange rates surrenders a great deal of its sovereignty. ... Those heterodox economists who simultaneously adopt an ‘endogenous money’ approach while advocating fixed exchange rate systems do not appear to recognize that the central bank will not be able to exogenously administer overnight rates in such a system” (Wray 2002, 36). Interest rates become endogenous in the sense that the target rate of the central bank is likely to react to a balance of payment deficit (Wray 2006).

However, post-Keynesians from developing countries would often reply that their central bank would not let the domestic exchange rate depreciate (too much or too fast) because it would have too many detrimental effects on their economy (because of imported inflation, for instance, arising from strong pass-through effects), and hence would also be forced to increase interest rates when faced with an external deficit. Furthermore, when countries on a fixed exchange regime are running external surpluses, there is no such pressure, as the Chinese case clearly demonstrates, and hence, in this situation, interest rates are just as “exogenous.”

7. In his book, Wray (1998) first explains the fiscal-monetary nexus, and later proposes an ELR program, which led me (Lavoie 1999, 370) to write elsewhere that the objective of his account of the creation of money was “to alleviate the fears associated with government deficits, and to show that deficits play a positive role within capitalist monetized economies. Thus[,] the possibility that an ELR program might generate large government deficits cannot constitute an objection to the program.” Indeed, the fact that some MMT supporters disliked ELR programs led to the MMR split (mentioned in Note 1), as MMT advocates told the critics them that ELR was an integral part of the MMT framework.
8. “Still MMT has always had its critics. Somewhat surprisingly to us, some of the most vocal critics have been heterodox economists, particularly Post Keynesians. We see nothing in the MMT approach that should be difficult for PKs to accept. ... It looks to us as if they have not understood our arguments” (Fullwiler, Kelton and Wray 2012, 17).
9. Krugman (2011), in one of his critiques of MMT, certainly did not get this when he wrote that, if banks have access to more reserves, “there are lending opportunities out there, so the banks won’t leave their newly acquired reserves sitting idle; they’ll convert them into currency, which they lend to individuals.”
10. Eight years later, some of the ELR proponents had still not gotten over this yet. Following Krugman’s criticism of MMT (2011), Malcolm Sawyer was again accused of the same methodological mistake in a neo-chartalist blog (Mitchell 2011A, 2011B). This is ironic because Sawyer’s (2011) views on fiscal policy are nearly identical to those of the neo-chartalists. Indeed, he is one of the few economists who kept endorsing the active use of fiscal policy and who explicitly supported functional finance, as neo-chartalists do. It must be granted, however, that Sawyer’s views on the relationship between government deficits and money are much clearer in his reply to his critics (Sawyer 2005). Sawyer’s position turns out to be quite close to that of neo-chartalists, whereas his views on the monetary and fiscal nexus were rather muddled in the initial paper (Sawyer 2003).
11. In addition to these papers, Brett Fieberger (2012A, 2012B) has working papers criticizing the MMT fiscal and monetary nexus. I (Lavoie 2011), for my part, devote a few pages to modern monetary theory in a recent survey of post-Keynesian monetary economics. Reynold F. Nesiba (2013) provides a review of the main themes of neo-chartalism as well as an assessment of all these critiques in a forthcoming paper.
12. For instance, Eledio Febrero (2009) made some worthy comments on MMT. But in spite of Febrero’s (2009, 524) concluding that “the policy implications that can be drawn from neo-chartalism are essentially correct,” Scott Fullwiler (2010A) rejected his paper as uninteresting and poorly researched.
13. I (Lavoie 1999, 371) also claimed that “if bank reserves are endogenous to their required level, then the expression ‘leverage’ does not seem appropriate.”
14. Indeed, many economists find this confusing, and many others think it is a mistake to proceed to this consolidation, including Perry Merhling (2000, 405), Claude Gnos and Louis-Philippe Rochon (2002, 54), Brett Fiebiger (2012A, 2012B,) and JKH (2012A, 2012B).
15. It is interesting to note that when Mosler (1994, 13) makes a similar T-account analysis, his first step assumes, and rightly so, that the government deposits at the central bank get depleted by one hundred units. Yet, there is no discussion of how the government feeds or replenishes its account at the central bank. By contrast, Stephanie Bell (1999) includes the first step in her Figure 1, which very much resembles Table 1 of this paper.
16. The compensating operation may occur through a repo operation or a transfer of government deposits from its accounts in commercial banks (the U.S. tax and loans accounts) to its account in the central bank. The central bank may also decide to issue its own bonds to wipe out the excess reserves.

17. I must admit that when I first read this in 1995 – when Pavlina Tcherneva, then Mosler’s assistant, sent me his 1994 paper – I thought that Mosler, despite his use of T-accounts, was another one of these monetary cranks that Keynes talked about in his *Treatise on Money*.
18. This is why, as mentioned in Note 5, some neo-chartalists argue that the “natural” level of the overnight rate of interest ought to be zero since, without defensive actions and with no interest payments on reserves, government deficits would drive down the overnight rate to zero.
19. Edward Nell brought this fact to my attention during a conference in May 2011.
20. A list of such effects is provided by Hassan Bougrine and Mario Seccareccia (2002, 69).
21. This post-chartalist sequence can also be found in a textbook of mine (Lavoie 1992, 166-168), which argues that government deficits produce crowding-in and no crowding-out effects, since government deficits increase the profits of the business sector, thereby relaxing its financial constraints.
22. It turns out that Bell’s (1999) Figure 2 very much resembles this paper’s Table 2.
23. See the U.S. Code, Chapter 31, Money and Finance, No. 5301. Buying obligations of the United States Government (available at www.law.cornell.edu/uscode/usc_sec_31_00005301---000.html).
24. The reference to Lavoie (2002) is, in fact, the draft version of the published Lavoie (2003) version.
25. Warren Mosler has pointed out in an email that the very first step involves the Fed’s providing reserves to the banks, through repo operations, so that the banks have enough reserves to clear and settle the security purchases of the primary dealers. This is also what Scott Fullwiler (2011) argues with the help of balance sheets. But one could also say that banks get day overdrafts when government securities are purchased by the dealers, and that these overdrafts are annulled through repo operations before the end of the day.
26. Another argument is invoked to claim that all these operational complexities are irrelevant. It is said that primary dealers in the US are required to offer reasonable prices at auctions of government securities. But this is rather vague in contrast to the Canadian case discussed below.
27. In particular, very few nations are allowed to borrow in their own currency on international financial markets, so this restricts the number of eligible countries with sovereign currencies. Nearly all countries suffer from the original sin.
28. I am grateful to Mathieu Frigon, from the Canadian Parliamentary Library, for having brought to my attention this peculiar feature of the Canadian debt issuing process. Moreover, since October 19, 2011, the Bank of Canada (2011) has been purchasing a minimum of 20 percent of the bonds being auctioned.
29. The government of Canada issues some bonds in euros or in U.S. dollars, but this is not by necessity. The purpose is to cover its open position in foreign exchange reserves.
30. A current close example is the announcement of the Swiss National Bank in September 2011 that, if needed, it would purchase unlimited amounts of Swiss francs on foreign exchange markets, thus pegging the Swiss franc relative to the euro.
31. This is article 123 of the Treaty of Lisbon, also called the Treaty on the Functioning of the European Union. The same rule can be found again in article 21(1) of the Statute of the European System of Central Banks and of the European Central Bank (protocol 4) (see European Union 2010).
32. See ECB (2011, chapter 3). This is despite the fact that article 18 of the Statute (European Union 2010) sets no restrictions on outright purchases and sales in secondary markets, leaving to the ECB the task of establishing principles for the conduct of open market operations.
33. Again, there is nothing about this in the statutes of the ECB. What article 125 of the Treaty of Lisbon says is that member states, or the Union, shall not assume the commitments of other member states – the so-called no-bailout clause. But this clause is partially overridden by article 122, which adds that under exceptional circumstances, the Union may provide financial assistance (see European Union 2010).
34. Indeed, this relates to Godley’s previous claim that an unhindered central bank “can sell or buy back bonds virtually without limit,” giving it the potential power “to fix bond prices and yields unilaterally at any level” (Godley and Cripps 1983, 158).
35. These large differences still held a year later, in August 2012, with Italian and Spanish 10-year bonds still somewhat below and above 6.5 percent respectively, while U.S., U.K., and Canadian bonds were below two percent.
36. Article 21(2) of the Statute (ECB 2011) specifies that national central banks can act as the fiscal agent of governments.

37. Credit balances in central bank money held by commercial banks “are primarily provided by the Eurosystem’s monetary policy refinancing operations” (Bundesbank 2011, 34).
38. Unless credit rating exigencies on the collateral provided for overdrafts at the central bank – for instance, the A- rating mentioned in a previous footnote – is truly enforced. But it was not the case when one sovereign debt rating dropped below A-.
39. In August 2012, the ECB announced the dismissal of the Securities Markets Programme, replacing it with the Outright Monetary Transactions programme (OMT). The good news is that ECB purchases of government debt can now be of unlimited amounts. The bad news is that interventions are conditional on governments pursuing fiscal adjustments (fiscal austerity). Thus, OMT does not yet appear to be an appropriate solution.
40. Some depositors feel that all banks, even those from the northern countries of the eurozone, may default as a consequence of sovereign debt default. Hence, they prefer to hold securities issued by safe northern governments such as that of Germany, even if these securities yield negative returns.
41. I am grateful to Ramanan, from Mumbai, for the many e-mail discussions that we have had regarding the TARGET2 mechanism, as well as the information that he provided for me. A short paper by John Whittaker (2011) was also useful to understanding the eurosystem payment framework. A paper by Ulrich Bindseil and Philip Johan König (2011) was also later brought to my attention by Vincent Grossman.
42. Indeed, this is what is actually happening. Advances from the Bundesbank to the German banks had fallen from €250 billion to €100 billion between the beginning of 2007 and the end of 2010 (Bundesbank 2011, 35).
43. This also demonstrates that global imbalances within the eurozone ought not to be a problem, besides the obvious fact that a trade deficit has a negative impact on economic activity. A current account deficit of Spain or Italy with respect to the rest of the eurozone is no more meaningful than the current account deficit of the Mezzogiorno relative to northern Italy. The problem is that there are no federal transfer payments from the surplus to the deficit countries to help compensate the negative impact of trade deficits on GDP and budget balances.
44. In other words, as pointed out by central banker Luigi Bini Smaghi (2011), the problem with the ECB is that it was set up under the assumptions that financial markets would always be right and would never face a crisis.
45. For instance, as recalled by Fiebiger (2012A, 6), based on the consolidation assumption, one could argue that public-debt limits pose no threat to economic stability. Meanwhile, economists know that in the past the U.S. federal government could not pay its civil servants for a while because the limits had been trespassed.

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