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1 Introduction

The Global Financial Crisis (GFC) of 2008 has rekindled the debate on monetary policy and financial regulation of the mainstream economics, resulting in many publications on these subjects (e.g., Blanchard et al., 2014). This crisis and its aftermaths (as the Euro crisis) have also brought to light key issues for the post-Keynesians (PK), such as the intrinsic flaws of an international monetary system (IMS) anchored in a national currency and the design faults of the European Monetary Union (Arestis; Sawyer, 2011, 2012; Amato; Fantacci, 2014). Among these faults, the loss of monetary sovereignty (MS) and its implication for the policy space (i.e., the autonomy of macroeconomic policy) of the member states have been highlighted by one strand of post-Keynesianism, the so called neo-chartalist or Modern Monetary Theory (MMT).

Although these two issues have been discussed hitherto independently, both of them bring us back to Keynes's *Treatise on Money* (1930) and his proposal of the International Clearing Union for the Bretton Woods Conference (Keynes, 1944)[2] In chapter 36 of the *Treatise*, he deals with the relationship between the international management of money and the autonomy of national economic policy, summing up what should be the main aim of an IMS: "to preserve the advantages of the stability of the local currencies of the various members of the system in terms of the international standard, and to preserve at the same time an adequate local autonomy for each member over its domestic rate of interest and its volume of foreign lending" (Keynes, 1930, p. 272).

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(2) As Blecker (2009) points out, although in the General Theory' Keynes (1936) considered a closed economy, he addressed open economy topics in the rest of both his theoretical and policy writings.

In chapter 38, Keynes presents the embryo of his proposal for the Bretton Woods conference. The main goal of this proposal is to abolish the inherent hierarchical feature of an IMS anchored in a key currency through the establishment of an International Clearing Union, grounded in international bank money (the Bancor). In this system, no national currency would have the privilege of being used as international money and deficit countries would never be forced to deflate (as surplus would be eliminated by formula), making it possible to reconcile currency stability and autonomy of national economic policy. As Skidelsky (2000, p. 193) stresses: "Despite the formal consistency, there was a tension, even a fissure between Keynes's nationalism and internationalism, which required a fabulous formula to overcome. The nationalist tendency in his theory is clear from his insistence that the national authority must retain control over the domestic rate of interest in order to be free to pursue full employment and progressive social policies. It might be wondered what kind of international monetary system, except one which impelled the regular distribution of reserves from creditor to debtor countries, could satisfy these requirements"[3].

At the same time, each nation would have its domestic monetary system based on fiduciary national money. The exchange rates would be fixed in terms of Bancor, but countries would preserve the right of modifying them when necessary or advisable in view of their domestic balance. The control of capital movements, both inward and outward, would also be required to ensure that autonomy "must be a permanent feature of the post-war system" (Keynes, 1944, p. 86; see, also, Belluzzo, 2005, Belluzzo; Almeida, 2002; Ferrari Filho, 1999; Amato; Fantacci, 2014; Paula et al., 2017).

Hence, Keynes (1944) discusses the relationship between the dynamics of the IMS, the features of the national monetary systems and the autonomy of economic policy that would ensure growth-oriented policies. The untying of currencies to gold (i.e., a fiduciary domestic monetary system), one of the pillars

(3) Skidelsky (2000, p. 193) also states that 'a modern answer might be a system of floating exchange rate. But this was beyond the practical and theoretical imagination of the times, including Keynes's'. In face of the interwar experience (i.e., exchange rate instability previous to the resumption of the gold standard in 1926 and currency wars in the 1930), most economists at that time doubted that a floating system could fix balance of payment disequilibrium.

of his proposal, was necessary to enable the control of the domestic interest rate and, hence, the rational management of national money by the State[4].

Those last issues, in turn, are directly linked to the concept of MS. Coincidentally, the first legal definition was contemporaneous to Keynes's *Treatise*, published in 1930. As Zimmerman (2013) points out, the former Permanent Court of International Justice (PCIJ) set out in 1929 (in the Serbian and Brazilian Loans Case) the concept adopted in international law thereafter: "it is indeed a generally accepted principle that a state is entitled to regulate its own currency"[5].

One could ask why Keynes did not use explicitly the concept of MS[6]. One possible explanation is that it was used mainly by lawyers and political scientists back then, being spread among economists more recently. Indeed, this topic has begun to receive attention from the mainstream economics in the 1960s. For instance, Hirsch (1969) presents a definition often quoted. According to that author, MS is "one of the hallmarks of national sovereignty" and refers to "the right to create money – that is for the sovereign to lay down what is or is not legal tender, to require that it shall be accepted in settlement of debt within the country's borders, and to maintain the sole right of issuing this national money" (p. 22). This topic has also gained importance within the discussion of monetary unions, launched by Robert Mundell at that time (Mundell, 1961).

Actually, the concept of MS is interdisciplinary, encompassing many fields of knowledge such as law, political science, economics, anthropology and international political economy. As Zimmermann (2003) proposes, it is a contested concept as well: "a concept whose nature is essentially dynamic, with both its positive and normative components being subject to constant evolution"

(4) As Dostaler (2005) stresses, albeit Keynes changed some positions through his career, he was always faithful to some fundamental objectives: a world without unemployment and great inequalities among the classes and the nations, which would require this management.

(5) According to Zimmerman (2013), this judgment of the PCIJ is "commonly cited as the first official recognition of monetary sovereignty in modern international law" (p. 798).

(6) Skidelsky (2000) in his biography of Keynes, uses the term 'national monetary sovereignty' when referring to Keynes and Hubert Henderson reflationary plan for the World Economic Conference of 1933. The term is mentioned just after the following quote: "Keynes proclaimed that 'President Roosevelt was magnificently Right' in choosing the path of domestic currency management" (p. 192). Yet, Keynes (1944) uses only the term 'sovereignty' in his preparatory works for the Bretton Woods conference. According to Amato and Fantacci (2014), White (1946) mentioned the concept of monetary sovereignty. In these authors' words: "White considered the adoption of an international unit of account, over which the USA would have no control, as a surrender of monetary sovereignty (thus implicitly suggesting that American monetary sovereignty would suffer no limitation)" (p. 1438).

(p. 806). These two features (interdisciplinarity and contestability) help to explain why it is such a controversial concept, without a single and unanimous definition. Moreover, it is such a contentious issue also because its constituent concepts – 'sovereignty' and 'money' – are controversial as well.

As Oppenheim (1905), one of the founding figures of International Law at the turn of 20th century, points out, there exists perhaps no conception, the meaning of which is more controversial than that of sovereignty. The original and most well-known definition is sovereignty as 'political sovereignty'. This concept was proposed by Jean Bodin (1576) in Renaissance times, according to which the principle of sovereignty is the key foundation for the exercise of state power[7]. In that sense, state and sovereign are synonymous[8] and sovereignty could be defined as the full right and power of the state to govern its territory without any interference from outside sources or bodies[9]. Yet, sovereignty has also two other meanings: (i) supreme or absolute power or authority (which could be not only the state, but also god(s), the church, the people, the community[10]; and (ii) freedom from external control, i.e., autonomy or independence[11].

However, if sovereignty is one of those concepts that generate intense debates both from a philosophical and a political point of view, the notion of MS seems to double the handicap (Blanc, 2011). This notion is even more disputed because underlying each concept, not only is there a specific definition of

(7) It is worth mentioning that Bodin's concept of sovereignty in Les Six Livres de la République (1576) explicitly incorporated the royal prerogative to coin money, i.e., a monetary dimension. According to Zimmerman (2013), he is likely to have been influenced by François Grimaudet who in his The Law of Payment (1579) insisted that "the value of money depends on the State…which alone has the right to coin money, or to have it coined and to stamp a valuation upon it" (p. 801).

(8) As Mundell (1997) stresses: "'the state is sovereign' is usually a tautology, just as the expression 'sovereign state' can be a pleonasm. The concept of the state came into being about the same as the concept of sovereignty and it served the same purpose and had the same meaning" (p. 6-7).

(9) Hence, the concept emerged before the Peace of Westphalia had proclaimed the nation-state as absolutely sovereign within its own territory and the basic unit of governance in world politics, what Cohen (1998) called 'Westphalian model of state foundation'.

(10) This is the meaning underlying the concept of 'popular sovereignty' proposed by Rousseau in his book *Du Contrat Social, ou Principes du droit politique* (1762). Rousseau was influenced by Hobbes's idea of the social contract in *Leviathan* (1651) and Hobbes by Bodin. Hence, historically, the second meaning derived from the first one. For more details on the concept of sovereignty, see Krasner (2001) and Philpott (2016).

(11) According to Wallerstein (2004), another fundamental feature of sovereignty is that it is a claim that must be recognized by others if it is to have any meaning, i.e., requires reciprocal recognition.

sovereignty[12], but also, most often, an approach to money, as is the case of neo-chartalism.

This paper aims to reassess the concept of MS from a post-Keynesian perspective. Our main hypothesis is that this perspective needs to take into account the post-Keynesian approach on money as well as the dynamics of the current international monetary and financial system (IMFS); the latter are featured by a currency hierarchy and the so-called financial globalization (i.e., the interpenetration of national monetary and financial markets with the globalized market)[13], which reinforces the negatives consequences of an inherent hierarchical IMS anchored in a key currency highlighted by Keynes (1930, 1944).

The arguments are organized as follows. Firstly, we address the debate on MS in the post-Keynesian literature that encompasses the neo-chartalism and its critics. Secondly, we make a critical appraisal of this debate. Third, we propose a concept of MS coherent with the PK approach (but different from the neo-chartalist one) and discuss its relationship with the currency hierarchy and policy space in this setting. Finally, we present some final remarks.

2 The post-Keynesian debate on monetary sovereignty

The debate on MS in the PK literature has been launched by the so-called neo-chartalism approach (or MMT) adopted by some PK scholars, among which stand out Randall Wray, Stephanie Bell/Kelton, Scott Fullwiler and Warren Mosler (e.g., Bell 2000; Bell and Wray 2002-3; Mosler 1997-98; Fullwiler, 2010; Wray 1998, 2002, 2003, 2004, 2015). This approach is one version of what Dequech (2013) calls 'State theory of money', which is centered on the role of taxes. The founding father of this theory is Knapp (1905) who originally proposed that 'money is a creature of the state' and the concept of chartal money from which the term chartalism derives[14]. Besides Knapp's theory of money, neo-

(12) It is worth giving some examples. While in the definitions presented above, sovereignty is understood as 'political sovereignty', for Mundell (1997), an international economist, monetary sovereignty is synonymous of autonomy of monetary policy (i.e, sovereignty is understood as autonomy). In turn, in the field of international political economy, Cohen's (1998) concept seems to encompass both dimensions (i.e., political sovereignty and autonomy) as it defines monetary sovereignty as the effective state monopoly "over the issue and management of money within its own territory" (p. 17).

(13) This definition is similar to the one proposed by Chesnais (1996).

(14) As Bell (2011) clarifies, the word 'chartal' derives from the Latin word 'charta' that bears the sense of ticket or token. The terms 'cartal' and 'cartelism' are also used by some authors (e.g., Goodhart, 1998) and derives from the Italian word 'carta' that has the same meaning. For Knapp (1905), money is chartal because the state proclaims "that a piece of such and such a description shall be valid as so many units of value" (Tcherneva, 2006, p. 30).

chartalists have relied also on Lerner (1947) to support that 'taxes drive money'[15]. Moreover, they also draw on Lerner's 'functional finance' (Lerner, 1943)[16] to design the proposal of the employer of last resort (ELR), namely, that the state could and should adopt a programme to reach full employment at the same time as price stability (Lavoie, 2013; Febrero, 2014; Rochon; Vernengo, 2003).

In view of that and other controversial proposals, neo-chartalism has engendered both non-academic and academic supporters and critics. In the academic world, the critiques have been made not only by the mainstream economics, but also by PK scholars. Indeed, ever since the launch of the first edition of Wray's book 'Understanding Modern Money' in 1998, which he called the first attempt at a synthesis of MMT, many PKs have written papers and reviews with a critical assessment of this book in special and neo-chartalism in general (e.g., Rossi, 1999; Mehrling, 2000; Gnos and Rochon, 2002; Rochon and Vernengo, 2003; Lavoie, 2013)[17].

In response, R. Wray and other neo-chartalists have released other papers and books, which attempt to clarify concepts and propositions and fill-in the gaps pointed out by critics. Their more recent work is the second edition of Wray's book 'Modern Money Theory: a primer on macroeconomics for sovereign monetary systems' published in 2015. In the preface of that edition, Wray recognizes an important gap of previous MMT contributions, which such book aims to fill: "The MMT approach has been criticized for focusing too much on the case of the US, with many critics asserting that it has little or no application

(15) As Rochon and Vernengo (2003) highlight, "the emphasis on taxation as the main cause for the acceptability of money appears to be more strongly upheld by Lerner (1947) than by Knapp (1973)" (p. 59). Tcherneva (2006) supports this interpretation. According to her, chartalism "locate the origins of money in the public sector, however broadly defined" and states that money "functions, first and foremost, as an abstract unit of account". Yet, the proposition that "the states delimits money to be that which will be accepted at government pay offices for extinguishing debt to the state' is specific to neo-chartalism" (p. 70). Indeed, Lerner (1947) is explicitly on that point: "The modern state can make anything it chooses generally acceptable as money" if it "is willing to accept the proposed money in payment of taxes and other obligations to itself" (p. 313).

(16) According to Lerner (1947), government fiscal policy should be judged and guided by the principal of 'functional finance' (and not of 'sound finance', i.e., budget balancing) that prescribes: (i) the adjustment of total spending to eliminate both unemployment and inflation; (ii) the adjustment of public holdings of money and of government bonds to reach the interest rate that ensues the most desirable level of investment; (iii) the printing, hoarding or destruction of money as needed for achieving the first two goals.

(17) As Lavoie (2013) stresses: "proponents of neo-chartalism have been able to exert substantial impact on the blogosphere, with several non-academic bloggers (for example, Naked Capitalism and Mike Norman Economics)" (p. 2). Regarding the PK critiques, he points out that "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 PK on similar grounds" (p. 7).

to the rest of the world's nations that do not issue the international reserve currency…This Primer fills that gap – it explicitly addresses alternative exchange rate regimes as well as the situation in developing nations (that often peg their currencies). In that sense, it is a generalization of modern money theory" (Wray, 2015, p. x).

In this section, firstly we build on that book (Wray, 2015) – the most updated and comprehensive text of MMT[18] – to sum up the main propositions of neo-chartalism, focusing on the key issues for this paper: the concepts of sovereign currency and MS and their relationship with exchange rate regimes and policy space. Therefore, we will not address the other themes of neo-chartalism[19].

According to Wray (2015), the MMT is a relatively new approach to macroeconomics "that builds on the insights of John Maynard Keynes, Karl Marx, A, Mitchell Innes, Georg F. Knapp, Abba Lerner, Hyman Minsky and Wynne Godley" (p. 1). It aims at integrating in a coherent analysis components that are not new, providing a detailed study of the coordination of operations between the treasury and the central bank.

In the Introduction of the second edition, referring to Keynes famous claim in the Treatise on Money[20], Wray (2015) stresses: "For the past 4,000 years (at least, as Keynes put it), our monetary system has been a 'state money system'…that is one in which the state chooses the money of account, imposes obligations (taxes, tribute, tithes, fines, and fees), denominated in that money unit, and issues a currency accepted in payment of those obligations" (p. 1-2).

This quote presents two central propositions for the MMT. The first one refers to the nature of money. According to Wray (2015), money refers to the money of account and come into existence when the state creates a unit of account. In the sequence, government obligations are imposed in this money of

(18) Before publishing his *primer*, "Wray (1998) provides the most comprehensive statement of MMT", as Paley (2003, p. 1) stresses.

(19) According to Lavoie (2013), the main topics of neo-chartalism are: (i) the origins of money as well as the claim that money is a creation of the state; (ii) the proposition that the state ought to act as ELR; (iii) the importance of fiscal policy relative to monetary policy and the role of functional finance; (iv) the mechanics of the clearing and settlement system (that is the focus of his paper). He also stresses in a footnote that '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" (footnote 4, p. 24).

(20) "The age of chartalist or State money was reached when the State claimed the right to declare what thing should answer as money to the current money of account—when it claimed the right to enforce the dictionary but also to write the dictionary" (Keynes, 1930, p. 4).

account. “In all modern nations this is sufficient to ensure that many (indeed, most) debts, assets, and prices will also be denominated in the national money of account”. Only after that, the state “is able to issue a currency that is also denominated in the same money of account” (Wray, 2015, p. 50-51).

The second proposition concerns the acceptability of money. For this approach, as already mentioned, ‘taxes drive money’, i.e., the government’s *fiat* currency is accepted because it is the main (and usually the only) item accepted by government in payment of taxes and other monetary debts due to government. The tax-payer needs to obtain the government’s currency to avoid the penalties imposed for non-payment of taxes (including prison). In other words, it is because anyone with tax obligations must use currency to eliminate these liabilities that government currency is in demand and thus can be used in purchase or in payment of private obligations.

Hence, tax obligations to government are met by presenting the government’s own IOUs to the tax collector. Indeed, a central idea of this approach is that money is an IOU (I owe you), that is, a liability of the issuer and asset of the holder. In Wray’s (2015) words: “It is not necessary to ‘back’ the currency with precious metal, nor is it necessary to enforce legal tender laws that require acceptance of the national currency…all the sovereign government needs to do is to promise ‘This note will be accepted in tax payment’ in order to ensure general acceptability domestically and even abroad…The purpose of the monetary system (from the point of view of the currency issuer) is to move resources to the government sector; and the purpose of the tax is to create a demand for currency that is used to accomplish that objective. The government needs a tax not to produce revenue but to produce sales of labor, resources, and output for currency” (p. 51)[21].

The concept of sovereign currency (and, thus, of MS) in the framework of neo-chartalism derives directly from these propositions. The sovereign currency is “the national currency issued by the sovereign government” (Wray, 2015, p. 43). Hence, a government is sovereign only if it has a sovereign currency. This means that MS is intrinsic to political sovereignty[22]. Such government has a variety of powers that are not given to private individuals or institutions, among

(21) Dequech (2013) points out that in other text, Wray (2004) also states that legal tender laws are difficult to enforce, what would be suggested as “tax laws are in his view easier to enforce” (p. 268).

(22) It is worth mentioning that this same idea was supported by Jean Bodin and François Grimaudet (see footnote 7).

which: (i) to determine which money of account it will recognize for official accounts; (ii) to issue the fiat currency denominated in its money of account; (iii) to decide how monetary contracts will be enforced in the courts; (iv) to impose tax liabilities in its money of account and how these liabilities can be paid; (v) to decide how it will make its own payments, i.e, how the government will spend.

Albeit being the last mentioned, that 'power' is not the least. On the contrary, it has a key role in Wray's approach and underlies his concepts of sovereign currency and MS. According to this author, the sovereign government cannot become insolvent in its own currency; it can always make all payments as they come due in that currency. In other words, as a sovereign currency issuer, the federal government faces no solvency constraints as it does not need to borrow its own currency in order to spend. As Wray (2015) stresses: "Sovereign government do not face financial constraints in their own currency (except those they impose on themselves, through budgeting, debt limits, or operating procedures) as they are the monopoly issuers of that currency. They make any payments that come due, including interest payments on their debt and payments of principal crediting bank accounts…As bond issues are voluntary, a sovereign government doesn't have to let the markets determine the interest rate it pays on its bonds either. They do no really borrow their own currency" (p. 135).

This power has key implications for the operation of monetary and fiscal policies. Wray (2015) stresses that the issuance of interest-paying treasury securities (a financial instrument on which banks, firms, households and foreigners can earn interest) is seen as a policy choice, not a necessity. Moreover, it is supported that the government cannot sell bonds unless it has first provided the currency and reserves that banks need to buy the bonds; either by spending them (fiscal policy) or lending them (monetary policy). Indeed, sovereign government bond sales are seen as functionally equivalent to monetary policy operations whose operational purpose is to help the Central Bank hits its overnight interest rate target: "When a country operates with sovereign currency, it doesn't need to issue bonds to 'finance' its spending. If one understand…that bonds era nothing more than alternative accounts at the same central bank operated by the same government, it becomes irrelevant for matters of solvency and interest rates whether there are takers for government bonds and whether the bonds are owned by domestic citizens or foreigners" (Wray, 2015, p. 132).

Wray (op. cit.) also points out that this power of the sovereign government was obvious 200 years ago, when national treasury spent by issuing

currency, and taxed by receiving its currency in payment; nowadays, that is no long obvious because the central bank makes and receives payments for the treasury. Yet, the analysis all over the book is based on a consolidated government (i.e., consolidation of the balance sheets of the Treasury and the Central Bank) as, it is argued, the final result is the same of dealing with two separated institutions and balance sheets, namely: the sovereign government spends by crediting banking accounts (i.e., using keystrokes, or electronic entries, on balance sheets), taxes by debiting them, and sells bonds to offer an interest-bearing alternative to reserves; there is no technical or operational limit to its ability to do that; thus, it is not subject to the budget constraint that applies to a currency user and, consequently, does not face solvency risk.

A key feature of the sovereign currency is its fiat or non-convertible character. Hence, in the so called 'pyramid of payments', government's IOUs should be positioned at the top as the sovereign government makes no promise to convert them to precious metal, to foreign currency, or to anything else[23] (see Figure 1). Instead, it promises only to accept its own IOUs in payments made to itself: "the issuer of an IOU must accept that IOU in payment… so long as government agrees to accept its own IOUs in tax payments, the government's IOUs will be in demand" (Wray, 2015, p. 71).

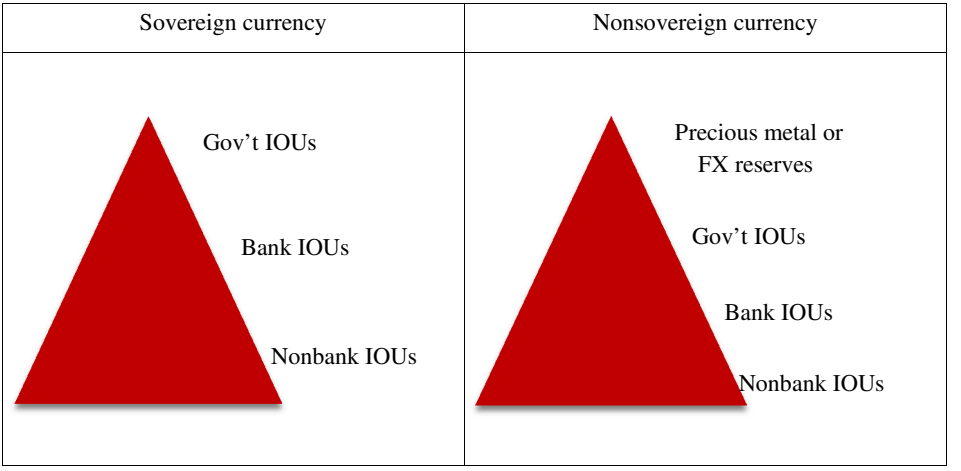
Wray (2015) also points out that the shape of the pyramid is instructive for two reasons. First, it is a hierarchical arrangement, where the liabilities issued by those higher in the pyramid are generally more acceptable and have higher creditworthiness (the sovereign government nonconvertible liabilities are free from credit risk). Second, the liabilities at each level typically leverage the liabilities at the higher levels. In this sense, the whole pyramid is based on leveraging of government IOUs.

On the contrary, a non-sovereign government issues a non-sovereign currency, namely, operates with a foreign currency or a domestic currency convertible to foreign currency (or to precious metal at a fixed exchange rate). This government is subject to the budget constraint and faces solvency risk. The asset backing the currency will be positioned at the top of the pyramid and the government need to accumulate and to hold (or at least have access to) the asset into which it promises to convert its currency (Figure 1). In that case, it should limit the issue of its currency. Any hint that default is imminent will ensure a run on the currency; only a 100 percent reserve backing will allow government to

(23) This pyramid is called 'hierarchy of money' by Bell (2001).

avoid default. Thus, the convertibility can constrain its ability to use policy to achieve some goals as full employment and robust economic growth. According to Wray (2015), this is the case of Greece and the other European countries that have joined the euro area: "nonsovereign governments like Greece that give up their monetary sovereignty, do face financial constraints and are forced to borrow from capital markets at market rates to finance their deficits" (p. 136)[24].

Figure 1
Pyramid of payments



Source: Wray (2015). Author's elaboration.

Wray (2015) stresses in many passages that his macroeconomic analysis of a nation that issues its own currency, as summarized above, applies to both developed and developing nations with a sovereign currency (mentioning as examples of the last case Mexico and Argentina) and regardless of the exchange rate regime[25]. For instance: "MMT principles apply to all sovereign countries. Yes, they can have full employment at home. Yes, that could (possible) lead to currency depreciation. Yes, that could lead to inflation pass-through. But sovereign governments have lots of policy options available if they do not like those results. Import controls and capital controls are examples of policy options.

(24) Also, "Adoption of foreign currency is equivalent to running a very tight fixed exchange rate regime – one with no wiggle room at all because there is no way to devalue the currency. It provides the least policy space of any exchange rate regime" (Wray, 2015, p. 134-135).

(25) Therefore, Lavoie (2013, p. 13)'s statement that 'Neo-chartalists usually give the USA or Japan as the standard example of nations with sovereign currencies' is not valid if we take into account Wray's last book.

Directed employment, directed investment, and target development are also policy options" (p. 289-290).

Yet, Wray (op. cit.) explicitly recognizes that "many developing countries will not find foreign demand for their domestic currency liabilities' that 'can lead to many problems and constraints" (p. 124). This is because if these countries run a continuous currency account deficits without enhancing their ability to export, they must issue liabilities denominated in one of the more highly desired currencies and will likely run into debt service problems in the future.

Wray (2015) also asserts that, among these highly desired currencies, the US dollar stands out, followed by other developed nations' currencies. As "US Dollar-denominated assets are highly desirable around the globe" (p. 124); and, to a lesser degree, the financial assets denominated in UK Pounds, Japanese Yen, European Euro etc. This makes it is easier to these nations to run currency account deficit by issuing domestic-currency-denominated liabilities. Therefore, "the issuer of the reserve currency is not unique, although the external demand for the reserve currency is greater. The difference is one of degree. The sovereign governments always get 'free lunches' by keystrokes. The US government potentially gets bigger lunches" (Wray, 2015, p. 128).

According to Wray (op. cit.) "most nations fall between these two extreme of 'special' nations that issue reserve currencies and developing nations that face a situation where no one outside their nation wants their currency" (p. 125). They find some external demand for assets denominated in their currency, which allows them to run currency account deficit balanced by capital account surpluses. Their government can issue their own currency to buy anything that is for sale in their currency plus things for sale in other currencies by exchanging their currency for foreign ones – which will depend on external demand for assets denominated in their currency. They are more constrained than reserve currency's nations. The question is not whether these 'non-special' countries can exchange their currencies to buy imports, but at what exchange rate.

After recognizing this difference between reserve currency's nations and developing nations, Wray (2015) analyses policy strategies that these nations could adopt to increase their policy space. Firstly, their government should not issue foreign currency bonds because liabilities denominated in other currencies result in default risk and also constrain domestic monetary policy as "if government wants to lower rates on its domestic currency debt it can always use domestic monetary policy to achieve that goal. Unfortunately, this is not widely

understood, hence governments issue foreign currency denominated debt and then take on risk of default because they actually must get hold of foreign currency to service the debt. Thus, it is almost always a mistake for government to issue foreign currency bonds' (p. 127).

Secondly, the degree of policy space of developing countries with sovereign currencies will depend on the exchange rate regime adopted. According to Wray (2015), the details of government operations apply in all three regimes. Yet, the ability to use these operations to achieve domestic policy goals differs by exchange rate regime.

In the analysis of the alternative regimes available to these countries, Wray (2015) recalls the well-known trilemma, according to which "government can choose only two out of the following three: independent domestic policy (usually described as an interest rate peg), fixed exchange rate, and free capital flows. A country that floats its exchange rate can enjoy domestic policy independence and free capital flows. A country that pegs its exchange rate must choose to regulate capital flows or must abandon domestic policy independence. If a country wants to be able to use domestic policy to achieve full employment…and if this results in a current account deficit, then it must either control capital flows or it must drop its exchange rate peg" (p. 129).

Wray (2015) supports that a floating exchange rate ensures greater policy space – i.e., the ability to use domestic fiscal and monetary policies to achieve policy goals – for a developing country issuer of a sovereign currency. In other words, it will have greater freedom to pursue objectives such as the maintenance of full employment, sufficient economic growth, and price stability. In that case, the government can afford anything for sale in its own currency and, hence, there is no default risk in that currency. The country could face exchange rate pressures as "shifting portfolio preferences of foreign holders can lead to currency depreciation. But so long the currency is floating, the government does not have to take further action if this happens" (p. 121). Inflation and currency depreciation are also possible outcomes if the government spends too much.

Moreover, it is important to mention that in his approach the floating exchange rate does not have the role of mechanism of adjustment of the balance of payment, as in the mainstream formulation of the trilemma[26]. In his own words:

(26) Mundell (1963) puts forward the original formulation of the trilemma or impossible trinity that afterwards was presented in the so-called IS/LM/BP models of open macroeconomics. In these models, the floating exchange rate ensures the adjustment of the balance of payment and autonomy of monetary policy.

"MMT supports floating rates to promote domestic policy space – not to close 'imbalances'… A current account deficit is not 'out of balance' – it is balanced by a capital account surplus… It is… misleading to call current account deficit an 'imbalance'; by definition it is 'balanced' by the capital account flows. In that sense, it 'takes two for tango': a nation cannot run a current account deficit unless someone wants to hold its IOUs. Under the assumption there is always a bid for a currency, it will always be possible to finance a current account deficit. The only question is the price at which the financing occurs" (Wray, 2015, p. 131).

Conversely, a fixed (pegged) exchange rate reduces policy space: the government can afford anything for sale in its own currency, but must maintain sufficient FX reserves and must operate fiscal and monetary policy to sustain its peg. Moreover, as the budget deficit could put pressure on the exchange rate, there is some justification in attempting to counteract budget deficits with tighter monetary policy. In the intermediary position there is the managed float[27]: the government can afford anything for sale in its own currency, but must be wary of effects on its exchange rate since monetary and fiscal policy could generate pressure that would move the currency outside the desired exchange rate range.

Nevertheless, developing countries that have fixed exchange rates can increase policy space either through policies that generate foreign exchange reserves (including development that increases exports) or protect those reserves through capital controls. This is the case of several Asian Nations as Wray (2015) points out: "Most countries will not be able to simultaneously pursue domestic full employment, a fixed exchange rate, and free capital flows. The exception is a country that maintains a sustained current account surplus, as do several Asian Nations. Because they have a steady inflow of foreign currency reserves, they are able to maintain an exchange rate peg even while pursuing domestic policy independence and (if they desire) free capital flows. In practice, many of the trade surplus nations have not freed their capital markets. By controlling capital markets and running trade surpluses, they are able to accumulate a huge 'cushion' of international reserves to protect their fixed exchange rate. To some extent, this was a reaction to the exchange rate crisis suffered by the 'Asian Tigers'… The lesson learned was that massive reserves are necessary to fend off speculators" (p. 129-130).

(27) Wray (2015) does not explain or define the managed float regime, but most probably he is referring to the so called 'exchange rate bands'.

Figure 2 sums up the relationship between MS, exchange rate regime and policy space in Wray's (2015) *primer*. In a country with a sovereign currency and, thus, MS, the currency is fiat or non-convertible and the government can afford anything for sale in its own currency. In this case, a floating exchange rate expands the policy space further because the government does not need to accumulate sufficient reserves to maintain a peg.[28] On the contrary, a country with a non-sovereign currency does not have MS and faces the lower policy space as it needs to borrow (to spend) and thus is subject to market interest rates and to risk of default.

Figure 2
Monetary sovereignty, exchange rate regimes and policy space
according to Wray (2015)

Nonsovereign currency	**Sovereign currency**		
FX, convertible currency and monetary unions*	Fixed exchange rate	Managed exchange rate	Floating exchange rate
Degrees of Policy Space			
Lower			Higher
–	→		+

Source: Author's elaboration based on Wray (2015).
Note: Countries that are members of monetary unions (such as the euro zone), which do not issue their own fiat currency.

Yet, there is not a consensus on the neo-chartalist concept of MS whether between adherents or PK critics. For Tcherneva (2006), a neo-chartalist such as Wray (2015), a country with fixed exchange rate would not have a sovereign currency: "States with sovereign currency control (i.e. which do not operate under the restrictions of fixed exchange rates, dollarization, monetary unions or currency boards) do not face any operational financial constraints (although they may face political constraints)" (p. 70). Lavoie (2013), on the contrary, is a PK scholar who addresses a 'friendly critique' to neo-chartalism. He states: "While

(28) Then, according to Wray (2015), the principles of functional finance apply most directly to a sovereign nation operating with a floating currency. Yet, it is not clear why either the managed float or the accumulation of FX reserves curb the policy space. In that last case, if there is no limit to the issue of government bonds by a sovereign currency's government, why this accumulation would reduce the policy space? Indeed, Wray (2015) does not discuss the dilemma associated with the sterilization of foreign currency reserves.

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, p. 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 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" (p. 4).

As Wray (2015) is totally clear on the relationship between MS, exchange rate regimes and policy space in the conclusion of chapter 6 (summarized in Figure 2), that controversy seems to be associated to a lack of clarity or, most probably, to a terminology problem in the texts used by these authors[29]. That problem is still present in Wray (2015) and refers to the use of the term 'floating currency' with the meaning of a currency that is not convertible at a fixed value to gold or foreign currency; for instance: "a government that spends using its own floating and nonconvertible currency cannot be forced into default" (p. 131); also, "in the case of a government that issues its own sovereign currency without a promise to convert at a fixed value to gold or foreign currency (that is, the government 'floats' its currency) we need to think about the role of taxes in an entirely different way" (p. 141).

These different understandings of the neo-chartalist concept of sovereign currency result in a connection among MS, exchange rate regimes and policy space distinct from the one presented in Figure 2. For Tcherneva (2006), a country with a fixed exchange rate does not have a sovereign currency, yet it is not clear what type of exchange rate regime ensures (only a floating exchange rate or also a managed or dirty floating). In Lavoie's interpretation the adoption of a floating exchange rate regime is one of the preconditions for a country to achieve the highest degree of sovereignty. This means that the exchange rate regime shapes the degree of MS and not the degree of policy space.

Hence, the conceptual controversy refers to the exchange rate regime adopted. Regarding the other pillars, there is no disagreement. It is worth recalling these pillars: a country only has monetary sovereignty if it has a sovereign currency, namely: (i) a national fiat currency issued by a sovereign government; (ii) this currency is denominated in the money of account created by that

(29) Lavoie (2013) highlights other terminology problems of neo-chartalism, as detailed below.

government and is accepted because taxes drive money; (iii) the sovereign government can afford anything for sale in its own currency and faces no financial constraint as it doesn't need to borrow its own currency in order to spend.

Some of the aforementioned critiques addressed by PK scholars to neo-chartalism, call into question those pillars. The friendly critique of Lavoie (2013) addresses the underlying premise of a consolidated government (Treasury and Central Bank), while other less friendly PK critiques (Rochon and Vernengo, 2003; Gnos and Rochon, 2002) focus on the neo-chartalist approach on money that underpins this concept[30]. We summarize, in what follows, these critiques that are related, even if implicitly, to the concept of monetary sovereignty and provide clues for our aim of devising a concept alternative to the one proposed by Wray (2015), but compatible with the PK approach[31].

In their paper, Rochon and Vernengo (2003) aim "to offer a critical view of the chartalist interpretation of money from a horizontalist perspective". They proceed to argue that "whereas the recent emphasis on chartalism is welcome, there are certain limitations related to the connection between state money and endogenous money" (p. 58). Their analysis is based mainly on Wray (1998 and 2003) and what they call 'chartalist interpretation' refers to the neo-chartalism or MMT.

Their starting point is Keynes (1930) and Davidson (1972) approaches on money. Keynes (1930) in chapter 1 of the *Treatise* affirms that "money-of-account…, namely that in which debts and price and general purchasing power are expressed is the primary concept of a theory of money" (p. 1). Davidson (1972), in turn, asserts that "contracts are…essential to the phenomenon of money, and the existence of institutions which can enforce the discharge of contractual commitments for future action are essential in providing trust in the future of the monetary system" (p. 147). Moreover, for these two authors, in modern times the state has appropriated not only the right to define the money of account, but also what thing (i.e, money) should answer that definition[32]. Rochon

(30) Rossi (1999) and Mehrling (2000) also criticize this approach in their reviews of Wray's (1998) book.

(31) There are many PK critiques of neo-chartalism that go beyond the objective of this paper. Lavoie (2013) counted a dozen scholarly critiques, among which: "the more general belongs to Perry Mehrling (2000); half focus on the idea of the state as an employer of last resort… and the other half on the neo-chartalist monetary views" (p. 7).

(32) In Davidson's (1972) words: "the right to define what is the unit of account and what thing should answer that definition" (p. 147-148). For Keynes (1930) quote, see footnote 13.

and Vernengo (2003) conclude that 'Davidson, as much as Keynes, does not pursue the role of the state in money creation further than that. In particular, taxes are not mentioned in connection to the process of money creation' (p. 59).

Based on Keynes (1930) and Davidson (1972) approaches, Rochon and Vernengo (2003) address the first critique to neo-chartalism, disagreeing with its key assumption that taxes drive money. They argue that, although this perspective is compatible with the emphasis of these two authors and the PK theory, on the money of account, the same is not true regarding the statement that the power to tax and to collect taxes play a crucial role in the creation of money.

The second critique refers to "the way by which money is injected into active circulation in the chartalist approach" (Rochon and Vernengo, 2003, p.60). Based on Wray (1998, p. 111), Rochon and Vernengo (op. cit.) point out that in this approach, money is "injected into the system through fiscal policy, and the banking sector leverages the initial exogenous money supply" (p. 61). This means that for chartalists "state money is exogenous, and credit money is a multiple of the former", an argument "not altogether dissimilar from the standard money multiplier model of more conventional verticalist writers" (p.61). According to Rochon and Vernengo (2003) "the basic difference between PK and chartalists is the order in which the verticalist and horizontalist arguments appear. For chartalists, money is primarily verticalist in nature, with bank money playing a secondary role. For PK, it is the other way around: credit money takes precedence and is the primary money creation force, whereas fiat money takes a secondary role". Moreover, regarding the acceptability of inconvertible (fiat) money, "is the fact that bank loans must be repaid that ensures the utilization of bank money, and money becomes a creature of banks rather than a creature of the state. Taxes and state money may enter the circuit later, and prove important to the extent that banks actually decide to provide credit in state money" (p. 61).

In order to support that argument, Rochon and Vernengo (2003) present a brief historical perspective on the precedence of credit money over state money as well as of international money over national money. In their paper, they stress that "it has been only during a limited amount of time that individual states imposed their sovereignty over money and the international monetary system" (p. 62). Shortly after (in a footnote), they put forward what would be in their view the 'sovereignty over money': "the control of national states over the money markets" that "took two centuries" to happen after the Peace of Westphalia in

1648[33]. Over those centuries, "the lack of national monies" did not imply "the lack of an international reserve currency...international currencies existed since the early Renaissance period, if not earlier" (p. 63). Yet, these currencies (e.g., the Venetian ducat and the Dutch guilder) were not accepted "as a result of their acceptability by states in payment of taxes" (p.64), but due to "the power of banks to provide credit, and refuse credit to those that did not accept the rules of the game, that led state monies to dominate international markets before they dominated domestic markets" (p. 65). Therefore, up to the 19th century, "banks and other money and financial market agents remained quite powerful". Yet, in the case of the United States, "only in the twentieth century with the Federal Reserve Act did the federal government finally control the activities of the monetary sector" (p. 65).

Finally, they put forward the following conclusion: "It seems more reasonable to take the Davidsonian view according to which institutions that provide a bridge between the present and the future and create the conditions for economic agents to be willing to hold money. The state is certainly one of those institutions, but so are banks. However, the precedence of credit money over state money is not only historically accurate, but essential, as we hope should now be clear to understand the existence of endogenous money" (p. 62). Moreover, they stress in a footnote that "social conventions…more often than not are behind currency acceptability. National states are only a relatively recent form of social convention"[34]. Hence, "sovereignty, understood as the power to tax and to collect in the token of choice' is not the main explanation for the existence and acceptability of money, 'even if modern money is ultimately chartal money" (p. 65).

In their critical assessment, Gnos and Rochon (2002) build on Rochon and Vernengo arguments "by precisely considering… more closely" (p. 42) the

(33) "If we take the Peace of Westphalia in 1648 as a representation of the consolidation in Western Europe of modern nation states—and also as the mark of the establishment of the doctrine of balance of power in their relations to each other—and we take Sir Robert Peel's 1844 Bank Act as the mark of the control of national states over the money markets, then we must conclude that it took two centuries for states to dominate domestic monetary markets. These dates are only suggestive of the long and problematic clash, and detailed analyses of each domestic experience would shed light on the exact timing of the conflict between states and markets" (Rochon; Vernengo, 2003, p. 62, footnote 9).

(34) Curiously, this key statement on the relationship between conventions and the State in the origin and acceptability of money is also made in a footnote. For a detail analysis of that relationship in the PK economics, see Dequech (2013). That issue will be taken up in the next section.

role of the state in money creation[35]. They do not put in question the neo-chartalism prepositions "that in modern times the state has appropriated the right to define the unit" and that the state defines "the thing that should answer the definition of the unit account" (p. 42-43). Yet, they take issue with two intertwined chartalist assumptions.

The first one refers to the statement that "… this thing is necessarily state money, and synonymous with debt of the state" (p. 43). The second regards the chartalist assumption that the central bank and the treasury could be treated as if they were the same institution[36].

Gnos and Rochon (2002) recall the domestic interbank clearing and settlement systems as well as the current central bank practices and bookkeeping to draw up their critical arguments and support that "Wray's account of the money-creation process is at odds with the post- Keynesian approach" (p. 45). They argue that there is actually "no doubt that state expenses and receipts affect the amount of high-powered money at the disposal of commercial banks…Like any other transaction, these are settled in central bank money through interbank settlements" (p. 46). What is questionable for those authors is the identification of high-powered money (i.e, central bank money, in their terms) with state money (i.e, debt of the state in Wray's terms).

They argue that they are not the same thing exactly because the distinction between the central bank and the Treasury is crucial irrespective of the country[37] and the failure to distinguish between their roles 'can lead to misleading statements'. Indeed, far from being the state's debt "central bank money plays a role of its own with respect to both commercial banks and the treasury – that is, converting monies (including state money, if any) into one another". Then, "contrary to what chartalists claim, the public in no way has to worry about obtaining state money in order to pay taxes. They just have to pay with bank money and the central bank will then do" (p. 48). In their view, the

(35) As the paper of Gnos and Rochon (2002) was published in 2002, most probably they used a previous version of Rochon and Vernengo (2003). Those authors also use the term 'chartalism' instead of neo-chartalism and base their analysis mainly on Wray (1998 and 2003).

(36) Wray (1998) states that '(…) it is not important to distinguish between the Fed's and the Treasury's balance sheet' (p. 77)'. It is exactly this class of statement that led to the critiques Wray (2015) points out in the preface of his *primer*, as already mentioned.

(37) Gnos and Rochon (2002) stress that this distinction is valid even in countries where the treasury has its own network of banks and is able to create its ow money, as is the case of in France. In the United States (used as example by Wray, 1998), the Treasury can't issue money.

state "intervenes only to bring legal tender to the notes and coins issued by the central bank; it may also, which has not always been the case, ensure the central bank's monopoly in issuing notes and coins". Then, they conclude that "irrespective of the country…the treasury and the central bank are different institutions that perform very different functions. Therefore, their respective balance sheets are crucial in understanding the ways and means of the financing of state's expenses" (p. 49).

In the last section of the paper, they challenge two main implications of the chartalist view regarding those issues, namely, that "government spending is necessarily financed through the creation of fiat money" and that "the payment of taxes reduces banks' reserves"; and, then, taxes are a means to maintain stability in the market for reserves as "they allow the state to remove excess reserves. This is precisely the role chartalists assign, for instance, to the sale of bonds issued by the government" (p. 49-50).

They draw upon the double-entry bookkeeping in central bank and bank's balance sheets to show that the central bank "cannot credit the treasury's account without becoming the treasury's creditor (at least in the case of net expenses), which means that it grants credit to the latter, just as any bank does when granting credit to its private clients. In this latter case, the treasury does not issue its money, it simply borrows from the central bank". Moreover, they remind the reader that "in many countries the central bank has been prohibited by law from directly financing state deficits. Treasuries have to sell bonds to commercial banks, which in their turn may sell them to the central bank to obtain high-powered money. This is a clear confirmation that, in issuing bonds, the treasury does not ipso facto issue state money that it could impose to the public because the latter has to pay taxes, but on the contrary borrows money from banks, including the central" (p. 54).

With regards to the relationship between taxes and the market for reserves, they follow Lavoie (2003, p. 530-531) who states that "government expenditures financed by cheques drawn on the central bank automatically lead to the creation of excess reserves. Reciprocally, taxes collected from private agents and deposited as government deposits in the accounts of the central bank withdraw reserves from the bank'. Yet, besides that, 'central banks can manipulate the 'market for reserves' – or rather interbank settlements – to prevent undesirable effects on interest rates and otherwise" (p. 51), such as the impacts of taxes and other public sector flows. Central banks can use a set of tools to neutralize these effects, among which government deposits and repo and reverse repos markets. Therefore, "what gives stability to the 'market for reserves' is not

the payment of taxes, but rather the central bank's ability to manipulate interbank settlements to prevent any unwanted pressures on interest rates or otherwise" (p. 53)[38].

The friendly critique of Lavoie (2013), besides examining the relationship between neo-chartalism and post-Keynesian economics, focuses as well on the clearing and settlement system and their implications for government finance.

Regarding that relationship, Lavoie (2013) points out that "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 neocharlalism's adherents. Even outside observers seem to be aware of the tension existing between neo-chartalists and (other) post-Keynesians". Yet, he also calls attention to the position of Fullwiler (2010), "one of the most articulate proponents of MMT", who supports that "there is any major disagreement between neo-chartalists and post-Keynesians". Yet, he states that Fullwiler (2010) "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' (p. 5).

Lavoie (op. cit.) agrees with Fullwiler (2010) and stresses that "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" (p. 5). Next, he summarizes "the many common elements of monetary theory" that neo-chartalists share "with other post-Keynesians, more precisely, with the horizontalist post-Keynesians and the circuitists" (p. 6), among which the endogeneity of the money supply for both groups[39].

(38) Yet, it is important to stress that both the tools available and the ability of the central bank to manipulate the market for reserves depend on the institutional framework in force in each country or region (in the case of monetary unions). That issue will be taken up later.

(39) The other common elements with the horizontalist PK are: loans make deposits, and deposits make reserves; central bank operations are essentially defensive, as the central bank normally attempts to set the supply of reserves equal to the demand for them; the operating target of the central bank is the overnight rate target; bank credit depends on the creditworthiness of customers, not on the availability of excess reserves; compulsory reserves are means to smoothing the demand for reserves and reduce fluctuations in overnight interest rates; 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 – 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 highpowered money (Lavoie, 2013).

This means that Lavoie (2013) has an understanding different from the one of Rochon and Vernengo (2003) for whom in this approach money is primarily vertical (i.e, exogenous) in nature, with bank money playing a secondary role (as mentioned above). Those different interpretations by PK horizontalists could be associated with a lack of clarity in some neo-chartalist texts (as in the case of the concept of MS) and/or, as Lavoie (2013) suggests, to a "problem of terminology, when words often take on a meaning that is different from their general use" (p. 8). He gives as examples exactly the use of the terms 'vertical and horizontal' components of money by neo-chartalists, which "has certainly created some confusion in the minds of heterodox authors" (among which he mentions Rochon and Vernengo, 2003) who "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" (p. 8)[40]. According to Lavoie (2013), neo-chartalists "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; Forstater 1999). But then it is unclear why such stocks 'leverage' private assets" (p. 8).

Then, Lavoie (2013) presents his first and softer critique: "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". Yet, "the terminology problem is the easiest to settle" (p. 8). On the other hand, he stresses that neo-chartalists have other "paradoxical claims…in trying to convince fellow economists that a central government with a sovereign currency does not face a financial constraint" (p. 8). Lavoie (op. cit.) mentions many examples of those claims, among which that government can spend by simply crediting a bank account, that government expenditures must precede tax collection, and that taxes and issues of securities do not finance government expenditures.

Lavoie's (2013) second and main critique applies to the assumption of consolidation of the central bank with the federal government (i.e., the Treasury) underlying these 'counter-productive' and 'counter-intuitive' claims. Lavoie (op. cit.) develops his critique in two steps. The first is a detailed analysis based on

(40) Febrero (2009) has the same understanding of Rochon and Vernengo (2003). One of his critiques to neo-chartalism concerns exactly the assertion that "private bank money can be understood as a leverage of fiat state money" (p. 523).

T-Balances of the deficit-spending process of a government with sovereign currency in three views: neo-chartalist, the post-chartalist and what he called 'the modified neo-chartalist' views [41]. After mentioning the institutional rules (regarding the relationship between the Central Bank and the Treasury or the monetary and fiscal nexus) in force in the United States and Canada[42], he concludes that: "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" (p. 16-17).

The second step is the analysis of the euro zone that, in contrast to the US and the Canada, has "a rather low degree of currency sovereignty" (p. 17). Lavoie (2013) points out that "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" and recalls 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" (p. 17). Then, he illustrates in the T-accounts the process of government-deficit spending in the euro zone, bringing to light that in contrast to the neo-chartalist depiction, "government deficit-spending will tend to raise overnight interest rates, unless the central banks proceed to liquidity-providing operations". This result, however, "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". Finally, he states that the problem in the euro zone "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" (p. 17).

(41) In the post-chartalist view, proposed by Lavoie (2003), "the central government would start the spending process by issuing securities to be auctioned to the private sector" (p. 12). The modified chartalist-view refers to the sequence proposed by Wray (2011), namely: the Treasury sells its securities to the private banks; the Treasury's deposits at those banks are moved over to its deposits at the Fed; the Fed buys treasuries from the private banks.

(42) 'Even in the case of the US 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 US government needs to borrow from the private sector under existing rules. Thus, even if the US does not fully fit the bill, one may wonder whether there is any other nation that corresponds to the strictures of neo-chartalism. 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' (Lavoie, 2013, p. 15-16).

After these two comprehensive steps, the following conclusions are presented. On the one hand, Lavoie (2013) stresses that the neo-chartalist monetary analysis is essentially correct, calling attention to its contributions to the understanding of the main flaws of the euro zone setup as well as to the PK theory inasmuch proponents of MMT "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". On the other hand, he argues that "neo-chartalists end up using arguments that become counter-productive in their attempt to 'convince economists and the public that there are no financial constraints to expansionary fiscal policies (except artificially erected ones)'. These arguments are based on 'the general case, based on consolidation' that 'is antinomic to the real world and to existing institutions and it would lead to mistaken advice and confusion'. In other words, it is an inappropriate lens to observe reality…The devil is in the details. Specifics are relevant. Take the eurozone, for instance…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" (p. 22-23).

Therefore, the main friendly critique of Lavoie (2013) concerns the premise of consolidation of the government's financial activities with the central bank's operations, which leads to an abstract sequential logic, deprived of operational and legal realism, omitting crucial steps in analysing the monetary and fiscal nexus.

3 A critical assessment of the post-Keynesian debate

Besides the shortcomings of neo-chartalism pointed out by PK scholars and summarized above, that approach has also disregarded important features of an open economy performance in the current historical setting, linked to the actual dynamics of the contemporaneous IMFS. Yet, this lack of realisticness contradicts the PK approach[43]. As Lavoie (2014) stresses, the PK school belongs

(43) According to Lawson (2009, p. 171), the founder of the philosophy of critical realism, 'realisticness' applies to the properties of actual theories. On that concept, see also Lavoie (2014, chapter 1).

to the heterodox research programme[44], one of whose key presupposition (regarding epistemology/ontology) is realism[45]. It is also worth recalling Eichner and Kregel (1975) statement that "the purpose of post-Keynesian theory is to explain the real world as observed empirically" (p. 1309). Moreover, among the specific presuppositions and characteristics of this approach, Lavoie (2014) mentions, not only realism, but also "historical and irreversible time" and that "institutions make a difference" (p. 34), among others[46].

This handicap has already been pointed out by other authors, such as Rochon and Vernengo (2003) who state: "any discussion of modern money that relegates international considerations to a secondary place is seriously defective, since the world of separate national monies is not the Garden of Eden from which modern money was expelled" (p. 58). Yet, these authors' critique applies to Wray's writings previous to his last book.

As detailed in the last section, in that book Wray (2015) recognizes this gap and include in his analysis international and open macroeconomics considerations, analyzing the consequences of alternative exchange rate regimes for the policy space of developing economies. Further, he also takes into account, even if in an implicit and superficial way, the currency hierarchy as he recognizes the differences between the dollar and the other currencies as well as between developed and developing nations' currencies.

The main critique addressed herein to Wray's (2015) *primer* is that it ignores the real dynamics of the current IMFS, its implications to emerging countries (developing in Wray's terms) as well as the actual exchange rate

(44) Lavoie (2014, p. 12) uses the term proposed by Leijonhufvud (1976), who defined presuppositions of a research tradition as "the set of commonly held metaphysical beliefs, which cannot be put in a formal form, and which are anterior to the constitution of the assumptions that rule specific models. These are the essentials of the research programme or their 'meta-axioms'. They are 'grand generalities somewhat in the nature of cosmological beliefs' (Leijonhufvud, 1976, p. 72).

(45) Lavoie (2014) points out that "Some economic methodologists, most notably Lawson (1994) argues that the only crucial presupposition is that of realism. He argues that all the other presuppositions follow from it" (p. 12). The other presuppositions proposed by Lavoie (2014) are: (i) regarding rationality, environment-consistent rationality, satisficing agent; (ii) regarding method, holism/organicism; (iii) regarding economic core, production, growth and abundance; (iv) regarding political core, regulated markets.

(46) The other presuppositions are: organicism; reasonable rationality; production; disequilibria, instability; principle of effective demand; investment causes; monetized economy; fundamental uncertainty; non-ergodicity; specific microeconomics; power relations; income distribution; open systems; pluralism.

regimes adopted by them[47]. In the following, we detail this critique, which starting point is the very PK approach on exchange rates.

The Post Keynesian literature (e.g., Schulmeister, 1988; Harvey, 1991, 1999, 2009) highlighted that in the post-Bretton woods era, featured by floating exchange rates and free capital mobility, short-term capital flows (portfolio investment and short term bank loans) constituted the chief determinant of nominal exchange rates, which are highly volatile. The very instability and the speculative logic of these flows, subordinated to financial investors' risk aversion/appetite, are the main causes of the volatility of exchange rates after the collapse of Bretton Woods. In this specific historic setting, national central banks have been called to intervene in currency markets to curb volatility, undermining monetary policy autonomy. Therefore, with the exception of the United States, the issuer of the key currency, all countries face an 'impossible duality' (Flassbeck, 2001) or a 'dilemma' (Rey, 2013)[48]; free capital mobility implies a loss of monetary policy autonomy, independently of the exchange rate regime adopted.

Yet, as many studies have shown (e.g., Sole and Swarnali, 2017 and Bluedorn et al., 2013), the instability of capital flows is higher in emerging economies than in advanced ones. As a result, their exchange rates are more volatile, requiring permanent official interventions in the currency markets (the so-called 'fear of floating'; as in Calvo; Reinhart, 2002), which reinforce the interaction between exchange and policy rates. This means that those economies face an even bigger dilemma, since the loss of monetary policy autonomy under free capital mobility, regardless of the exchange-rate regime, is greater than in advanced economies.

(47) Emerging economies are defined here as those developing or peripheral countries that have engaged in the process of financial globalization. This concept thus refers to a dynamic process as a growing number of countries have taken part in it since the 1990s. The term 'peripheral' stems from the structuralist perspective that stresses the 'center–periphery' dimension of the international economic system (e.g., Prebisch, 1949). Henceforth, the terms 'peripheral emerging', 'emerging', and 'developing' will be used interchangeably as well as 'center', 'advanced', and 'developed'.

(48) This perspective has also been recently upheld even in mainstream economics. Rey (2013) found that cross-border finance constitutes a 'global financial cycle', which is a function of global investor´s risk aversion and monetary policy in the United States. In this setting, floating exchange rates "cannot insulate economies from the global financial cycle, when capital is mobile. The 'trilemma' morphs into a 'dilemma' – independent monetary policies are possible if and only if the capital account is managed, directly or indirectly, regardless of the exchange-rate regime" (p. 21).

The higher exchange rate volatility and the greater macroeconomic challenges faced by emerging economies stem from the features of the current IMFS. At the monetary dimension, this system is featured by a currency hierarchy that refers to the hierarchical structure of the IMS, as Keynes (1930, 1944). In other words, it is an institutional arrangement organized around a national currency that becomes the key currency positioned at the top of the hierarchy. The key currency (currently the US fiduciary dollar) has the higher degree of liquidity as it performs the three functions of money in the international scale: medium of payment, unit of account (and denomination of contracts), and store of value (international reserve currency).

Below the key currency, the other national currencies are hierarchically positioned according to their liquidity premium. The currencies issued by the other developed countries are in intermediate positions as they are also liquid currencies, yet with a smaller liquidity premium than the key currency; these currencies could be called international currencies. At the opposite end, we find the currencies issued by emerging economies, which are non-liquid currencies. The liquidity premium of these currencies is lower than that of the key currency and those in the middle, as they do not perform – or perform only marginally – the functions of money internationally[49].

The currency hierarchy has been a fundamental feature of the IMS inasmuch since the first standard (the sterling-gold one) a national currency has performed the role of international currency[50]. However, this hierarchy has revealed itself even more deleterious after the emergence of the so called financial globalization due to the also hierarchical and asymmetrical features of the international financial system (Paula et al., 2017)[51]. In the words of Studart (2006), the international financial integration process is an integration between

(49) The analysis of the currency hierarchy in the current IMFS is based on Andrade and Prates (2013) and Paula et al. (2017). These papers drawn on Keynes' total return of assets (or own interest rate) equation for analyzing the currency hierarchy and focus, respectively, on its implications for the exchange rate dynamics and the economic policies of emerging economies. A similar approach is developed by Kaltenbrunner (2015) who also focuses on that dynamics.

(50) Only in the gold-exchange standard (1926-1931) two national currencies (the British pound and the US dollar) have shared this position.

(51) As Skidelsky (2000) stresses, Keynes (1944) was mainly worried about England's position as a debtor country in the international system and, hence, with the asymmetries between debtor and creditor economies in terms of the burden of balance-of-payment adjustment. Herein, we follow Andrade and Prates (2013) and Paula et al. (2017) who emphasize the center–periphery asymmetries of the international monetary and financial system. Them, that approach could be called 'Keynesian-structuralist'.

unequal partners. Firstly, as capital flows ultimately depend on exogenous sources, emergent countries have become even more vulnerable to the inherent volatility of these flows. As Ocampo (2001) stresses, whereas advanced economies are 'business cycle makers', emerging economies are 'business cycle takers'. Secondly, the relatively marginal insertion of emerging economies' assets in the portfolios of global investors since the 1990s has also contributed to this higher vulnerability[52].

The mutually reinforcing monetary and financial asymmetries underlie macroeconomic challenges faced by emerging economies in the current IMFS. On the other hand, in periods of capital flows' boom, when the appetite for risk is higher (i.e., when the *animal spirits* of investors are more pronounced), emerging assets become objects of desire on the part of global investors. In this setting, huge financial inflows result most often in currency appreciation, asset inflation and credit bubbles. Conversely, in bust phases (i.e., moments of changes in monetary conditions in the U.S. and/or risk aversion of global investors) emerging countries' financial assets turn up to be the main victims of global investors' 'flight to quality' because of the lower liquidity premium and the higher exchange rate volatility as well as of their marginal insertion in global capital flows determined, ultimately, by external factors.

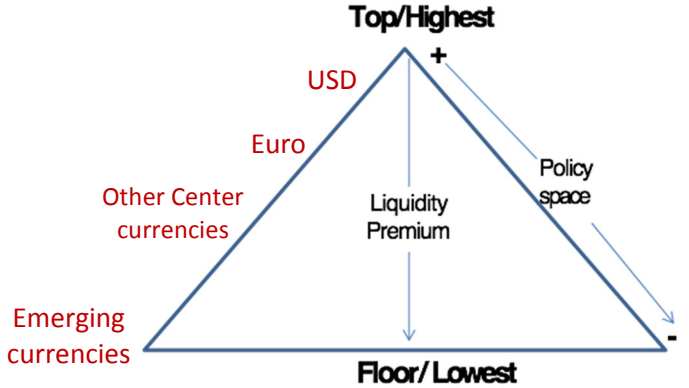
Therefore, despite the residual nature of capital flows directed to those economies, their potentially destabilizing effects on their financial markets and exchange rates are significant, since the volume allocated by global investors is not marginal in relation to the size of these markets. As in most of those countries, financial markets are not as liquid and deep, sales by foreign investors significantly boost and reduce exchange rates and securities prices, affecting the financial position of domestic debtors, besides its direct effect on residents' external debt.

Moreover, the greater exchange rate volatility has more harmful effects than in advanced countries because emerging economies' currencies are non-international ones, which increases the risk of financial fragility (due to the potential currency mismatches) as well as the pass-through of exchange rate

(52) This last asymmetry is confirmed by Haldane (2011) who built a useful panorama on financial globalization through a map of the global financial network over time. According to this author, from 1980 to 2005 "the balance of global financial power has not altered markedly. The financial core countries at the beginning of the period (such as the US and UK) remain core at the end; the offshore financial centres (Hong Kong and Singapore) remain significant throughout; while emerging markets remain on the financial periphery" (p. 3).

changes to domestic prices [53]. Additionally, the monetary and financial asymmetries also result in different degrees of monetary policy autonomy in advanced and emerging economies. As Ocampo (2001b) pointed out: "whereas the center has more policy autonomy and is thus 'policy making' – certainly with significant variations among the different economies involved –, the periphery is essentially 'policy taking'" (p. 10). In other words, the monetary and financial asymmetries result in a macroeconomic asymmetry that underlies the greater dilemma in emerging economies. It is exactly their position in the IMFS that strengthens the relationship between the policy rate and the nominal exchange rate and the influence of global investors' portfolio decisions on these key macroeconomic prices (Figure 3)[54].

Figure 3
Currency hierarchy and policy space



Source: Paula et al. (2017) and De Conti and Prates (2016). Authors' elaboration.

(53) Many studies show that this pass-through is greater in emerging economies (e.g., Mohanty; Scatigna, 2005). The main explanation put forward by them is the different composition of their price indexes (due to the different consumption basket), i.e., the higher share of basic goods, which prices are set in the international market, in the consumption basket of those economies in comparison to advanced ones. Conversely, in the approach followed here, the higher pass-through takes place because the current and expected behavior of the exchange rate (the price of the foreign currency in these economies) is a key parameter of corporations´ price setting due to the non-international character of their currencies.

(54) This figure aims to highlight not only the differences between the key-currency (USD), the euro and the other currencies, but also the differences between the other center currencies and the peripheral ones. This does not mean that there are no significant differences inside each of these groups of currencies. In other words, some of those center currencies are more used internationally than the others (e.g., British pound) as well as some peripheral emerging currencies (e.g., the Chinese renminbi). For more details on these differences based on recent data, see De Conti and Prates (2016).

As already mentioned, Wray (2015) recognizes that the USD is the key currency, but totally disregards the implications of the currency hierarchy in the current IMFS to the exchange rate dynamics and the macroeconomic performance of 'developing nations with sovereign currencies' (that we called emerging economies). In this context, these economies have been facing a 'dilemma' or 'impossible duality' and not a 'trilemma' or 'impossible trinity', as this author supposes.

Actually, after the financial crisis of the 1990s and the beginning of the 2000s, most of the emerging economies have adopted *de facto* dirty floating regimes and not floating exchange rate regimes as Wray (2015) affirms. Indeed, the fear of floating is a consequence of the aforementioned monetary and financial asymmetries and of the greater dilemma faced by these economies in comparison to the advanced countries. This means that the floating exchange rate regime does not deliver a greater policy space[55]. Moreover, Wray (op. cit.) also overlooks the dynamics of the international financial system. Due to the financial asymmetries, a current account deficit is not automatically balanced by a capital account deficit and emerging economies are also subject to "market discipline", such as the peripheral countries of the euro zone.

Therefore, if we take into account the dynamics of the current IMFS and the actual exchange rate regimes adopted by 'developing nations with sovereign currencies', we come to conclusions very different from Wray's (2015) ones.

4 A post-Keynesian approach on monetary sovereignty, currency hierarchy and policy space

The critiques addressed by PK scholars summarized in section 2 and our critique of neo-chartalism, as presented in section 3, have revealed that this approach on MS and on its relationship with exchange rate regimes and policy space has many shortcomings. On the one hand, the concept of MS proposed is not compatible, at least in some aspects, with the theory on money embraced by these scholars. Moreover, it is unrealistic due to the underlying assumption regarding the relationship between the central bank and the treasury, which disregards the predominant institutional framework in center and peripheral emerging countries.

(55) As Lavoie points out, many PK are in favor of fixed exchange rates because of the adverse effects of exchange rate instability.

Therefore, it is still missing a PK concept of MS not only realistic and coherent with the PK approach on money, but that also takes into account the institutional framework of monetary and fiscal policies in force in most countries. In the following, firstly, we propose such a concept, drawing on the PK critiques to neo-chartalism summarized in the last section, as well as on Dequech`s (2013) important contribution on the different views on money in the PK theory. Secondly, we discuss its relationship with the CH and policy space in the current IMFS.

We start taking up the clues provided by these critiques. Rochon and Vernengo (2003), grounded in Keynes (1930) and Davidson (1972), agree with the emphasis of neo-chartalism in the money of account and that modern money is ultimately chartal money; yet, they disagree with the other essential assumption that 'taxes drive money'. These authors support that the sovereignty (i.e., national states' control) over money includes, but goes beyond, the appropriation by the state (i.e., the sovereign) of the write to define both the money of account and the thing (i.e., money) that should answer that definition. Based on Davidson (1972), they call attention to the key role of contracts (instead of taxes) in the acceptability of money as well as of two other institutions, alongside the state, in the creation and acceptability of money, namely, banks and the central bank. Hence, the sovereignty over money requires also 'the control of national states over the money markets', which is only possible in the presence of a national central bank.

Gnos and Rochon (2002) add some additional clues. They disagree with the neo-chartalist identification of high-powered money (i.e., central bank money) with State money (i.e., debt of the state in Wray's terms) and stress the role of the central bank in the 'market for reserves' (i.e., interbank settlements). Hence, they bring to light that at the top of the pyramid of payments stands the central bank money and not the government's IOU as supposed by Wray (2015) (see Figure 1).

Moreover, alongside Lavoie (2013), they put in question the neo-chartalist premise of consolidation of government's financial activities with central bank's operations. They stress that the distinction between the Central Bank and the Treasury is crucial irrespective of the country as they are different institutions that perform distinct functions. Therefore, their respective balance sheets are crucial in understanding the clearing and settlement system functioning

and the ways and means of the financing of state's expenses. Lavoie (2013) also highlights the importance of specific (national or regional) institutional features in the nexus between the Treasury and the Central bank that are disregarded by neo-chartalist. On the other hand, this author supports that neo-chartalists share with the horizontalist PK many elements of monetary theory, among which the endogeneity of the money supply.

Yet, these authors do not address or detail one important issue in the PK view of money, namely, the role of conventions in the acceptability of money (that is only mentioned in a footnote by Rochon and Venengo, 2003; see section 2). This gap is filled by Dequech (2013) who reminds that money "is an institution itself and is closely related to organizations and other institutions" (p. 252). Besides the institutions already mentioned (Treasury, the Central Bank, commercial banks, taxes and contracts), he calls attention to the role of other key institution, namely, conventions[56].

According to Dequech (2013), "the conventional character of money is mainly related to the convention of acceptability" as the use of money as a convention is featured by "two properties which any convention has" , namely: (i) conformity with conformity, i.e., "someone accepts something as money because other people are expected to also do it"; (ii) arbitrariness, i.e., "what is money is at least in part arbitrary, in the sense that an alternative is possible and, if everybody accepted some other object as money, this could be money" (p. 253). That character was stressed by Keynes (1930, 1936) and, more explicitly, although not frequently, by some PK, among which Davidson (1994), Harrod (1969), Dow (1996) and Chick (1983)[57].

Dequech (2013) goes beyond these authors in two aspects. On the one hand, he considers "whether and how the conventionality of money is compatible with the proposition that money has some essential properties, as argued by Keynes and some eminent Post Keynesians" (p. 260). He comes to the conclusion

(56) As Arestis and Eichner (1988) stress, money is an institution for both the post- Keynesian and the institutionalist theory of money and credit. These authors propose a "model general enough to encapsulate most, if not all, of the constituent elements" (p. 1003-1004) of these two theories.

(57) Dequech (2013) states that these authors and other PK do not refer often to the idea "that money is a convention" and that it "is far from being a point of clear Post Keynesian consensus" (p. 257).

that these properties can be reconciled with the conventionality of money[58]. On the other hand, he brings together that idea with the PK views that support the key role of the state in money creation (i.e., money as creature of the State), showing that they can be reconciled as well. These views have been mentioned in section 2 and refer to the approach that focuses on contracts (led by Davidson, 1978, 1994) and the 'taxes-drive-money view' (i.e., neo-chartalism) that focuses on the role of taxation[59].

As Dequech (2013) brings to light, these two views are not mutually exclusive and are compatible with Keynes approach in the *Treatise on Money.* In his own words: "At least in chapter 1 (…) Keynes may have simply defended both links, with contracts and taxes' (p. 267)[60]. As Keynes (1936) also recognizes the conventionality of money, which, in turn, can be reconciled with the essential properties of money (presented in chapter 17 of the *General Theory*), we could state that the proposition 'money is both a convention and a creature of the state' proposed by Dequech (2013) is post-Keynesian as it is compatible with Keynes' thoughts on money in his two main books. Moreover, that proposition is also post-Keynesian since it is aligned with the view of money supported by many PK authors.

If we draw on the arguments of Dequech (2013), this preposition (i.e., "a convention created by the mimetic private agents together with the state") from a PK perspective would mean that: (i) the ability of the state to impose its money on the private agents is not unlimited; only when the state succeeds in defining money (the predominant case), "money is a legal norm, involving the threat of formal sanctions"; (ii) most often, the state has the greatest powers "to influence the process through which the convention of acceptability of money emerges and is reproduced"; indeed, "the state is legally responsible for determining the unit of account in contracts and taxes, together with the means of settlement, and for

(58) Dequech (2013) clarifies that accepting "Keynes's identification of the essential properties of money reduces money's degree of arbitrariness, but does not eliminate it, because different alternatives may satisfy the requirements represented by these properties" (p. 270).

(59) It is worth mentioning that the aim of his paper is broader. Dequech (2013) also addresses the conventionalist approach led by André Orléan, compares it to the PK perspective and proposes, drawing on that approach, the idea of 'the conventional foundation of money' or 'the ultimate or fundamental conventionality of money'. Herein, we will draw on his arguments related with the PK approach.

(60) It is worth mentioning that among the authors mentioned in this paper, only Dequech (2013) quotes all extracts of *Treatise*'s chapter one where Keynes (1930) refers to the relationship between money and contracts as well as money and taxes.

enforcing the laws of contracts and taxes"; (iii) the state has to be able "to make its money – connected to contracts and/or to taxes – accepted …if a stable money is to exist" (p. 271).

At this point, we have the elements to present what we call a PK concept of MS. As in the case of the approach on money, that concept shares some pillars with the neo-chartalist one. First, sovereignty also refers to political sovereignty, namely, the nation state is the sovereign that defines the money of account and also what thing (i.e., the national fiat money) should answer such definition. Second, following Lavoie (2013), both views agree with the idea that money is endogenous[61]. Yet, with regards to the other pillars, there is divergence. In the PK concept herein proposed, money is accepted because it is both a creature of the state and a convention, as Dequech (2013) argues[62].

Last but not the least, the Central Bank and the Treasury are different but intertwined institutions that perform distinct functions. The Treasury, besides being responsible for the fiscal policy, performs also 'monetary tasks' since it enforces contracts and taxes laws and issues the lower risk bonds used in monetary policy operations. The Central Bank is not only the issuer of the national fiat money at the top of the hierarchy of money (i.e., the ultimately means of payment)[63], and responsible for the monetary policy (i.e., for determining the policy rate in the market for reserves) (Rochon and Vernengo, 2003; Gnos and Rochon, 2002); as Minsky (1986), another prominent PK, highlighted. It is also the lender of last resort and regulator of the monetary and financial system. Those roles are key for the domestic monetary (and financial) stability (and, hence, for a stable money to exist) and should take part of that concept (see Figure 4).

(61) Other constituent elements of the post-Keynesian and institutionalist theory of money and credit pointed out by Arestis and Eichner (1988) is that money is credit-driven and demand-determined, i.e., is endogenous.

(62) Even if the idea of money as a convention can be compatible with the neo-chartalist approach, as Dequech (2013) supports, that idea is absent from the concept of sovereign currency proposed by Wray (2015).

(63) According to Merhling (2012), it is an "inherent hierarchy of money" because "monetary systems are inevitably hierarchical, from the inside, by the logic of their internal operations" (p. 9). In that hierarchy, central bank's money (i.e., high powered money, the central bank liability) is at the top instead of the government IOU's, as in the neo-chartalist approach presented in Figure 1. Mehrling (2000) also highlight that difference in his critique of Wray (1998).

Figure 4
Concepts of monetary sovereignty in comparison

		Post-Keynesian	Neo-chartalist
		Common pillars	
Sovereignty	**Political sovereignty**	National state is the sovereign that defines the money of account and the national fiat money that responds to this definition	
Approach on Money	**Money supply**	Endogenous money	
		Different pillars	
	Acceptability	Money as creature of the State (contracts and taxes) and convention	Taxes drive money: the aim of taxation is to create demand for the currency
	Central Bank and Treasury nexus	Different but intertwined institutions ❖ Treasury: enforces contracts and taxes' laws; issues the lower risk bonds used in monetary policy operations ❖ Central Bank: issuer of the national money, responsible for the monetary policy, lender of last resort and regulator of the monetary and financial system	Premise of consolidation ❖ Treasury spends by crediting a bank account and faces no financial constraint (taxes and securities don't finance gov. expenditures) ❖ No distinction between monetary and fiscal policies (Treasury bonds as an interest-bearing alternative to reserves)

Source: Author's elaboration, based on Wray (2015), Rochon and Vernengo (2003), Gnos and Rochon (2002), Lavoie (2013), Dequech (2013).

With regards to the relationship of MS with exchange rate regimes and policy space in the current IMFS, our starting point is Keynes' (1930, 1944) thoughts on those issues summarized in the Introduction. In his view, in an open economy, policy space (in his terms, autonomy of economic policy) is totally dependent on the features and dynamics of the IMFS. Indeed, as analyzed in the last section, the degree of policy space is associated not only to the MS, but also to the position of the country's currency in the CH.

As depicted in Figure 5 below, the interplay of these two dimensions (MS and CH) in the current IMFS result in five different situations. The first one is the case of the US that, for having MS and being the issuer of the key-currency, has the greater degree of policy space. The second refers to the other center countries that have international currencies (yet, positioned below the USD and the Euro in the CH) and also MS; those countries have a degree of policy space

lower than the USA, but higher than the other countries. At the opposite end stands the fifth situation that refers to the peripheral emerging countries, positioned at the bottom of the hierarchy, that don't have MS; these countries have the lower degree of policy space.

Figure 5

Monetary sovereignty, currency hierarchy and policy space: a post-keynesian approach

				Monetary sovereignty (MS)	
				*Nonsovereign currency**	*Sovereign currency*
				Degree of Policy space	
				– → +	
Currency Hierarchy (CH)	*Key currency*	**Degree of Policy space**	+ + + + + + +	n.a.	**1** United States
	Center Currencies			**3** Eurozone countries (e.g. German, France, Greece, Spain, etc.)	**2** e.g. Canada, UK, Japan, Switzerland, etc)
	*Peripheral Emerging Currencies***			**5** e.g. Ecuador	**4** e.g. Brazil, Mexico, India, China, Indonesia, Thailand, Turkey, etc

Author's construction.

Note: * Countries that use a foreign currency, have a convertible currency or are members of monetary unions; **Based on the sample of Emerging-market countries of the Institute of International Finance (IIF): Argentina, Brazil, Bulgaria, Chile, China, Colombia, Czech Republic, Ecuador, Egypt, Hungary, India, Indonesia, Korea, Lebanon, Malaysia, Mexico, Morocco, Nigeria, Peru, Philippines, Poland, Romania, Russia, Saudi Arabia, South Africa, Thailand, Turkey, Ukraine, United Arab Emirates.

Regarding the third and fourth situations, we support herein that it is impossible to make a classification of each group as a whole. The analysis should consider other issues, either of regional or national level, i.e., a less general and more disaggregated kind of analysis (i.e., case studies) is required to assess the relative degree of policy space of each country. Therefore, additional steps are

needed and it goes beyond the aim of this paper[64]. However, it is worth to present them as topics for future research.

As for peripheral emerging countries that have MS, emphasized in section 3, the specific degree of policy space will depend on two main factors. Firstly, on the macroeconomic constraints, among which the external one stand out due to the position of their currencies in the CH. Secondly, the 'macroeconomic regime' that refers to the interaction between the macroeconomic policies (exchange rate, monetary, fiscal, financial and wage ones) within an institutional framework[65]. The exchange rate regime, highlighted by Wray (2015) and other neo-chartalists, is one lynchpin of this regime. Yet, it is not the only factor to be taken into account since in the current IMFS those countries face an impossible duality. Other two aspects should also be stressed. Firstly, the degree of financial openness has a crucial importance since it functions as a filter of the IMFS spillovers on the domestic performance and influences the effectiveness of the exchange rate policy. Secondly, there is the specific institutional framework of the monetary policy that will shape the ability of the central bank to neutralize the effects of these spillovers on the monetary market (e.g., the tools available to sterilize the building up of FX).

In the case of the euro zone countries, indeed, there is an inside hierarchy – in which German is positioned at the top level and has the higher policy space and the so called peripheral economies at the bottom – linked to macroeconomic and institutional factors, which restraint even more their policy space. Moreover, the decrease in the autonomy of economic policy of countries that lost the MS when joining a monetary union could be greater or smaller, depending on the institutional framework of that union, as already pointed out by many PK scholars (e.g., Arestis; Swayer, 2011, 2012; Lavoie, 2013).

5 Final remarks

In social sciences, as in economics, concepts are not neutral. Almost always they are grounded on a specific theoretical approach. In the last section, we propose a concept of MS alternative to the neo-chartalist one, but coherent with the post-Keynesian theory of money as well as with other key presuppositions of that approach, namely, realism, historical time and the crucial

(64) For an interesting comparison of the cases of Greece and Argentina, see Lo Vuolo and Marques Pereira (2017).

(65) This concept is similar to the concept of 'Macroeconomic policy regime' proposed by Herr and Kazandziska (2011). For more details, see Fritz (2016).

role of institutions. Therefore, it could also be classified as a "contested concept" (Zimmermann, 2003) inasmuch it is aligned with the institutional framework of monetary and fiscal policies currently in force in most countries.

Moreover, we also devise an analytical framework on the relationship between MS, CH and policy space that takes into account the actual dynamics of the contemporaneous IMFS, among which the asymmetries of financial globalization. Only such realistic framework would be useful to analyze the challenges and dilemmas currently faced by center (but the US, issuer of the key-currency) and, mainly, peripheral emerging economies, and, hence, to draw policy recommendations to mitigate them.

Finally, it is worth to resume one issue raised in the Introduction. There, we argue that Keynes (1930, 1944) discusses not only the relationship among MS, CH and policy space (in his terms, autonomy of economic policy), but also important aspects linked to the concept of MS, such as fiat money and national control over the domestic interest rate.

Then, one could suggest that there is a hidden concept of MS in Keynes's writings that would be synonymous to 'rational management of the national money by the state' (Dostaler, 2005) or 'domestic currency management' (Skidelsky, 2000). That management would require a fiduciary domestic monetary system (anchored on a national chartalist money) and a central bank with the task of determining the policy rate, two pillars of the post-Keynesian concept proposed in this paper. Yet, Keynes' concept would be broader then political sovereignty and encompass the autonomy of monetary policy. Moreover, in his view, with exception of the country issuer of the key-currency, such ability would only be effective in a nonhierarchical and financial regulated IMS that would ensure the regular distribution of reserves from creditor to debtor countries. Hence, if we adopt this "hidden concept", only the United States would have MS in the current IMFS.

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