MMT, post-Keynesians and currency hierarchy: notes towards a synthesis

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Abstract
The main objective of this article is to show that MMT, post-Keynesian and currency hierarchy theorists do not have irreconcilable divergences. In fact, MMT economists support much of the currency hierarchy's advice and analysis for real historic events. The adoption of earlier post-Keynesian conception of money does not change the main conclusions of MMT that there is not restriction on the financing of public spending, but it provides a broad comprehension of many monetary matters, as Latin America economic history evidence.

Keywords: Modern Monetary Theory, Currency Hierarchy, Developing Countries, Balance of Payments Constraint

Introduction

The current moment seems favorable to debate and potential reconsideration of theoretical systems, a situation derived both of developments in the analysis of public financing and the nature of money, but also, largely, due to the particular political and social circumstances observed in many countries. US hegemony is in crisis, as its industrial might decreases and is put in question by China's development. The Asian country is now responsible for a large part of the world's industrial output, boasting a complex and innovative economy. Another point worth noticing is former president Trump's challenge of the basic principles of American politics and society, a situation the US shares with other countries.

Trump's defeat in the last elections was only made possible due to unity of the Democratic Party around Joe Biden, thus overcoming the divide between "establishment" Dems and the self-proclaimed socialists, a minority which nonetheless gets 20% of voter's preference. Since any victory by the party will require such unity, Democrats' long held liberal economic policies are likely to be altered. Biden´s economic plan is a result of the new power balance in the party, in the sense that it embraces some of the left's agenda, in a context heavily influenced by the ideas of Modern Monetary Theory (MMT).

According to Screpanti and Zamagni (2005), times of crisis are usually followed by the loss of prestige of the then dominant theoretical system. When societies go through crisis, the need of representing the economy as an organic and organized body weakens, given that such theoretical systems can no longer deal with the real problems put by the crisis. It should be no surprise, therefore, that mainstream orthodoxy has been in dire straits since the financial breakdown of 2008, when it was unable to foresee or explain it, while central banks around the globe implemented unorthodox policies, for example, aggressive monetary expansion and long-term interest rate operations. At the same time, said policies were ineffective in boosting

the job market, where salaries remain stagnated for decades, despite significant productivity gains being observed in the same period. Mainstream authors (O. Blanchard, Dell'Ariccia, and Mauro 2010; O. J. Blanchard and Summers 2017; Fatás and Summers 2018) reacted by revising, at least partially, the role of fiscal policy in the recovery from severe recessions. This made it possible for the mainstream to keep some of its contributions to the real economic agenda, even if at the cost of its internal theoretical coherence.

Economic crisis and policies in the Western hemisphere, as they impact on mainstream economic thought, have opened up room for Modern Monetary Theory. Though still mostly absent in US academics, it has been incorporated into the US hegemonic power balance. This is especially notable in the role assumed by the state in Biden´s plan regarding social welfare and economic and scientific development. As will be seen, the historical analysis of countries like Chile, Mexico, Hungary and, of particular interest in the case of this article, Brazil, also allows for the reflection on ideas proposed by MMT.

As usually happens during a crisis, pressures over the scientific community and individual researchers are weakened, once methodological and doctrine restrictions are lost, consequently releasing creative energies. Researcher's interests are attracted by real world problems in detriment of theoretical puzzle-solving. Theoretical revolutions take place in such periods, which are marked by confusion in language: this is the context conducive to the establishment of a new theoretical system (Screpanti and Zamagni 2005). Divergencies between MMT and post-Keynesian proponents, the first having originated from the latter, should therefore not be surprising.

However, in order to establish itself as a dominant theoretical system, any school of thought must offer a coherent and complete answer to each problem that emerges or might emerge within a given field of investigation.

The Modern Monetary Theory points out a robust analysis of the functioning of modern treasuries, banks and commercial banks, which shows the current applicability of the fundamental concepts of the Theory of Functional Finance, reinforcing the belief that fiscal policy cannot be limited by the financial limits. The only limits for fiscal policy could occur through the level of employment and inflation.

Despite expanding the possibilities for the practical application of Keynesianism, MMT did not receive a favorable reception among all heterodox economists. In this context, the most prominent criticisms are those that point out the limitations of the monetary conception (Rochon and Vernengo, 2003), by not considering the role of money as unit of account, and how it applies to peripheral economies (Prates, 2020 and Vergnhanini and De Conti, 2017).

The main objective of this article is to show that the absence of financial constraint on public spending will occur as long as the function of money as a means of payment is maintained, even if the functions of unit of account and store of value are lost.

The Latin American experience during the 1980s currency crisis shows that the State was able to finance itself without restrictions, even when contracts started to be denominated in foreign currencies or government bonds indexed to interbank rates. In addition, there was a shortening of the average term of liabilities, including public debt, which had a duration often reduced to a single day.

Thus, as postulated by MMT, there was no restriction on the financing of public spending, but the liability structure brought a series of vulnerabilities to these economies. Therefore, this article will show that an institutional structure of MMT continues to function in monetary crises, but an incorporation of other post-Keynesian monetary concepts and the currency hierarchy can enrich the analysis and provide a functional theory of issues, especially prices.

Furthermore, MMT provides a broad conceptual framework to be used by the state on the periphery, including public banks, which can finance exports and international reserves to overcome the matters of currency hierarchy on the periphery.

A complete synthesis between MMT, post-Keynesians and the currency hierarchy is beyond the scope of this article, the goal of which is to show that divergencies are probably less deep than the heated debate may sometimes appear to indicate. A synthesis between diverse concepts is likely possible without sacrificing any relevant aspects of each of the schools. Besides, presenting a complete theoretical system that deals with the phenomena of the economy, beyond simply stating that what happens is not related to its concepts and proposals, is essential so that a new theoretical system establishes its dominance. Answering to the complex economic context that followed the 2008 crisis is the primordial task for which MMT, post-Keynesians and the currency hierarchy have already developed fundamental ideas, though these ideas are scattered in different publications and lack any cohesive presentation as a proper system.

Modern Monetary Theory and the Periphery

Leading researchers in MMT, such as Wray and Mitchell, analyse matters specific to peripheral economies, especially the delicate equilibrium of its balance of payments, and when considering concrete cases they partially accept the recommendations of structural economics and the monetary hierarchy. It is difficult, nonetheless, to conjugate such recommendations with the monetary concepts of MMT beyond the still incipient analysis of development in peripheral countries.

The frequent crisis related to the balance of payments in peripheral economies could be mitigated by the adoption of floating exchange-rates and accumulation of foreign currencies. To Wray (2015), floating (or managed - in the case of capital controls) exchange-rates broaden the scope and field of action of economic policies.

> "A floating exchange-rate (or a managed rate with capital controls) expands the policy space further because the government does not need to accumulate sufficient reserves to maintain a peg. Well-planned use of this policy space will allow the government to move toward full employment without setting off currency depreciation or domestic price inflation." (WRAY, 2015)

In practice, the Brazilian experience during the current pandemic corroborates the recommendations of MMT, considering that, even facing the possibility of capital flees in the period, the Central Bank was able to maintain negative real interest-rates. Meanwhile, Congress decided that the National Treasury should finance a robust plan towards helping the poorest and also States and Municipalities, thus elevating public deficit to 13,71% of GDP in the previous 12 months. On the other hand, the impact of the devaluation of 28,93% of the

Brazilian Real in 2020 should not be underestimated, with consequences on inflation, especially on food staples, a situation of growing extreme poverty made worse by the end of Federal government support.

From a structural point of view, Wray (2015) proposes that peripheral countries should increase aggregate demand through policies that do not lead to a considerable increase in external demand, such as import substitution. Programs for creating jobs in labor intensive sectors, that require less imports of capital goods. Besides, governments could implement controls on imports and establish limits for foreign debt. More recently, some economists associated with MMT, such as Nathan Tankus (2018), have argued that monetary sovereignty should be used to boost development banks, as did Brazil during the 2010s, when Treasury bonds funded the BNDES (Tankus 2018; Bonizzi, Kaltenbrunner, and Michell 2019b). Historical experience has shown the potential of such measures not only in Brazil but also in Chile during the 1950s and 1960s, when CORFO (Chilean Economic Development Agency) financed a large program of imports substitution by issuing bonds that could be cashed at face value at the Central Bank, in other words, by issuing currency (Collier and Sater 2004)(F. Rezende 2015).

MMT is sometimes criticized for its resorting to floating rates as a solution for disequilibrium in the balance of payments under any circumstances. However, when reviewing the Hungarian case, Wray (2015) considers that devaluing the currency might be insufficient to re-establish normality.

> "The government also borrowed in foreign currency – just about half of its outstanding debt was in foreign currency. The only sources of foreign currency to service both government and private debt denominated in foreign currency are exports or more borrowing from foreigners, or exchanging ever-more Forints to obtain the foreign currency. And there is some default risk on all of this debt since Hungary's government cannot simply keystroke foreign currency into existence. As markets worried about Hungary's ability to service the debt, interest-rates rose further…" (WRAY, 2015)

Bill Mitchell (2012) points in the same direction, arguing that devaluing may create their own dynamic without having the capacity to re-establish equilibrium.

> "The government will also be pushed towards default by a slowing economy, the massive revaluations of its foreign currency denominated debt as the currency falls and the declining capacity of the economy to generate export growth (as the rest of Europe slows)." (B. Mitchell 2012)

Mitchel (2012) considers that the opening of Hungarian capital accounts and the end of restrictions for citizens to hold foreign currency gave rise to a boom of private lending in foreign currencies, at the same time as public external debt was also rising. Even if the Hungarian government did follow sound fiscal regulations and practices, as those imposed by the Maastricht Treaty, the accumulation of liabilities in foreign currencies was at the root of the crisis. Mitchell argues, thus, that the Hungarian case does not refute MMT´s thesis, because its crisis did not originate on a process of growing debt in local currency.

As for the Mexican crisis of 1994, the main cause lies in the financial deregulation of the 1970s, which led local private banks to take credit in foreign currencies at floating interest-rates. The

country's integration to international finances only deepened as it becomes part of NAFTA. In this interpretation, concepts similar to those of the currency hierarchy are presented (W. Mitchell, Wray, and Watts 2016).

It is, however, difficult to conceive how his ideas on money, notably the broad power of the state to determine its demand through taxation, could explain the link between internal and external crisis and the speculative processes associated with it. In this sense, MMT fails because its explanations for the diverse set of economic problems lack generality, though its institutional analysis on the fiscal capacity of countries with sovereign currencies remain valid.

Criticisms of MMT at the periphery

MMT adequately describes the institutional workings of the Brazilian Central Bank, the Secretary of the National Treasury and the local banking system (Pimentel 2018; F. C. de Rezende 2014; Vieira Filho 2019b) Historical analysis also shows that the National Treasury faced no obstacles in rolling public debt, the cost of which being determined in the relationship between the fiscal authority and the Central Bank (Teixeira Jorge 2020). This suggests that MMT correctly describes the institutional dynamics of countries which, like Brazil, present liquidity in financial markets and no financial restrictions to public expenditure.

However, works of economists associated with the currency hierarchy, mostly based on Latin-American structuralist economics, point out that the macroeconomic dynamics might impose conditions to the freedom of fiscal policy to obtain full employment, especially in its relation to the international markets.

Prates (2020) criticizes MMT's monetary conceptions, affirming that the functions of money should take into account not only its role of unit of account and relating debt and credit, but also as an asset in itself. Furthermore, demand for money and its acceptance would be determined not purely by taxation, but also by contracts and conventions. (Prates 2020; Bonizzi, Kaltenbrunner, and Michell 2019b; Vergnhanini and de Conti 2017; Vernengo and Caldentey 2019).

Its role in taxation would thus not be the main explanation for the existence of modern money. In this sense, the institutions that render possible contracts in time, associating and regulating payments past and future, are essential to the acceptance of modern currencies, which operate in a system marked by uncertainty. These institutions are necessary for money to be accepted as means of payment and value reserve.

The capacity of money to define contracts is fundamental for peripheral economies, as was made clear by the episodes of high inflation observed in Latin America in the 1980s. The prolonged regime of high inflation led agents to question contracts denominated in local currencies, once they no longer adequately referred to real income. Transition into high inflation occurs when its intensity becomes an obstacle to the acceptance of future contracts in said currencies. As it happened, local contracts could still be paid in local currencies, though the guarantee of real value was the indexation to the interbank rates in the Brazilian economy or the dollar in the case of Argentina.

A system based on indexation is fragile in its nature and may conduce a context of high inflation into a regime of hyperinflation, when it becomes so intense that institutional innovations are

insufficient or non-existent and the local currency is replaced by foreign ones (Carvalho 2021). The incapacity of the local currency to denominate contracts can destruct the very capacity of the state to issue a sovereign currency, regardless its role in taxation. Hyperinflation thus puts in question the tax-driven monetary conceptions of MMT. Inflation expectations could influence demand for currency in such a way that the state´s taxation capacities can no longer effectively counteract.

> "In Russia and Central Europe after the war a currency crisis or flight from the currency was experienced, when no one could be induced to retain holdings either of money or of debts on any terms whatever, and even a high and rising rate of interest was unable to keep pace with the marginal efficiency of capital (especially of stocks of liquid goods) under the influence of the expectation of an ever greater fall in the value of money..." (Keynes 2013)

It should be underscored that his limits between a regime of high-inflation, where indexation still plays a relevant role, and one of hyperinflation, are blurry at best. The acceleration of inflation could reduce the effectiveness of indexation, while external chocks, external debt obligations, unbalances in the public sector and the anticipation of measures of price control could spell doom for a local sovereign currency.

The Brazilian experience in the 1980s reinforces the role of monetary stability for the denomination of contracts and macroeconomic policymaking in general. At the same time, it conspicuously shows the non-existence of fiscal restrictions even when the local currency loses its functions as value reserve and unit of account. The rolling of debt was never problematic, despite the risk of hyperinflation reflecting on the ever shorter terms practiced in the indexation to the interbank rates, themselves closely reflecting the movements of the exchange-rates (Mendonça de Barros 1993; Vieira Filho 2019a).

> "It is important to consider the mechanism of destruction of the indexed currency. Very frequently it is heard about the possibility of a flight *en masse* from the indexed currency, motivated by the mistrust of investors. In this situation, the government would not be able to roll its debt and chaos would take over. However, flee where? - we might ask. 'Real goods' would certainly be the answer we get. But the seller of said goods would then have received a check or credit in legal currency and, unless he or she decides to cash it, he then would be holding indexed currency through the application of these resources in the open markets. It is clear that our seller of real goods could also decide not to hold the cruzados (local currency), immediately exchanging them for something else. In this case, the problem is passed ahead to the second seller, and so on, until the last seller makes the deposit on the 'over', balancing the system" (Mendonça de Barros 1993)

The loss of control over inflation in Latin America did not originate from a process of indebtedness in local currencies, as stated in EDWARDS et al. (2019); on the contrary, the rise of external debt in the 1970s and the hike in US interest-rates in 1981 were its main contributors (Ferraz 2017). It is relevant, however, to point to the external structural fragilities of these economies, as do structuralist economics since the 1950s and presently by the school of currency hierarchy.

The latter considers that currencies of peripheral economies are less liquid at the international level, demanding volatile liquidity premiums and higher, more volatile interest-rates. In this context, the logic of speculation of capital flows causes high cyclical volatility in exchange-rates, resulting in difficulties regarding MMT's proposal that floating exchange-rates would allow for the local monetary policy to determine interest-rates. Besides, failing to reach expected positive results, the government might lose investors trust in its commitment to honour debt, which could also result in expectations of devaluation of the local currency and higher long term interest-rates. Currency hierarchy, thus, implies diverse degrees of freedom for the economic policies of countries (Vergnhanini and de Conti 2018).

From a structuralist approach, Oswaldo Sunkel and Stephany Griffith Jones (1986) argue that the process of import substitution, by fostering the production of consumer goods internally, reduces the coefficient of imports, at the same time it requires the purchase of intermediate and capital goods abroad. Imports thus becomes ever more concentrated on capital goods and other essentials such as pharmaceuticals, foods and energy.

Overcoming these obstacles to development presupposes external financing, which in turn increases external debt and renders the recipient economy even more vulnerable to future external crisis. Given that exports of primary goods do not respond to devaluations in the exchange-rate, the adjustment in the balance of payments must occur through the decrease of internal absorption, that is, the state is forced to induce a recession in order to lower imports and promote whatever industrial exports might exist. Development, thus, becomes a process marked by structural dependency, vulnerability and instability. (Griffith-Jones and Sunkel 1986) (Vernengo and Caldentey 2019) (Bonizzi, Kaltenbrunner, and Michell 2019a).

The development process as described above might point to problems in MMTs hypothesis regarding the adjustment of balance of payments through floating exchange-rates, disfavouring its application in peripheral countries. Nonetheless, it is also possible to point to virtues in the ideas of MMT and other post-Keynesians not yet considered by policymakers. The structural tendency towards vulnerable external accounts was worsened in Latin America by the adoption of mistaken policies, mostly concerned with increasing external savings through debt and the opening of capital markets. In Brazil, in the early 1970s, external debt was not associated with the increase in imports of capital goods, being directed towards the accumulation of international reserves at a cost superior to that of the external debt itself. With the advent of the oil crisis and its impact on the external accounts, the only policy option was to further increase the external debt until the system of international financing collapsed in the 1980s (Cruz 1999).

In Chile, dictator Augusto Pinochet's (1973-1989) policies were even less rational. The opening of the economy and lowering of tariffs led to growing systemic unbalance, which was compensated by new inflows of foreign capital, resulting in the exploding of foreign private debt, as banks were taking debt in foreign currencies to take advantage of the massive interest-rates spread. External financing reached the incredible mark of 20,7% of GDP in 1981, while external debt mounted to close to 50% of GDP. This allowed for significant appreciation of Chile's exchange-rate, further deteriorating the competitiveness of local industries, at the same time it helped finance the imports of luxury consumer goods in benefit of the country´s elites and middle classes. Between 1970 and 1981, imports of perfumes and cosmetics grew by 9,500%; that of alcoholic beverages and cigarettes, 2,400%, luxury clothing, 5,150%, automobiles, 1,249%, TV sets, 9,357%, (Ffrench-Davis 2010). Curiously, such policies as promoted by Chile's Chicago Boys are rarely termed populist.

It is at this point that the importance of the Finance-Funding circuit (Keynes, 1937) becomes clear, as it shows that investment does not presuppose ex ante savings in order to be realized, as well as the importance of MMT, as it shows the capacity of a sovereign currency issuer to create the purchasing power necessary to finance public investment. Combined, they make explicit the mistakes of Latin American mainstream economists in their bet on external savings to foster development, even if conditions were not adequate and if, in the end, it led many countries close to hyperinflation.

Vernengo and Caldentey (2019) consider MMT is correct in postulating the non-existence of financial restrictions to expenditures in local currencies. However, the authors point to the undesirable distributive effects of public debt in countries already facing high inequality in income and wealth. Floating exchange-rates also bring additional questions in the case of peripheral economies, beyond the rigidity of imports and the need to promote recessions in order to decrease imports. Inflation in the periphery would be more responsive to costs than to demand, especially the exchange-rate, given that a large part of goods and supplies is priced in US dollars. Interest-rates are then kept at high levels in order to prevent capital from leaving the country and, consequently, inflation and reduction of real incomes, with the expected contractionist impact. Additionally, considering that the private sector in peripheral countries holds significant debt in foreign currencies, devaluations of the exchange-rate heavily impact companies balance sheets, further accentuating the contraction at least in the short term (Vernengo and Caldentey 2019).

Considering a mid-term perspective, export-led strategies could be limited by low productive development, thus being restricted to low value exports. Given the low price-elasticity of such exports, they tend to be unresponsive to devaluations of the exchange-rate, a movement that has costs both in terms of real wages and inflation. Moreover, development through FDI leads to uncoupling of currencies, making agents sensible to expectations of currency devaluation, as well as it puts the productive structure in a subordinate position and requires later remittances of profits abroad (Bonizzi, Kaltenbrunner, and Michell 2019b).

Besides foreign currency flows and international liquidity cycles, in determining an economy's external dynamics one must also consider its stocks of assets and liabilities. The de-dollarization of liabilities of some peripheral economies after the commodities cycle seems to have attenuated external restraints, while creating other mechanisms of dependency as internal credit becomes conditioned to external conditions and exports show a tendency towards primarization of exports. (Biacarelli, 2019; Ocampo, 2007)

The trade of domestic liabilities in local markets, the pre-specification at market prices and prefixation of bonds, which extended the duration of previously just one day in bonds indexed to the interbank rates, all these elements brought about new conditions to the rebalancing of the of the Brazilian economy during the recession of 2015/16:

> "The key to understanding such trajectory is in the change of the marketplace in which these instruments are traded, referring specifically to the expressive growth of stocks and fixed-rate bonds in domestic markets. These liabilities, added to the FDI participation in capital, comprise the total of liabilities denominated in local currency... In the context of a partial 'de-dollarization", the rapid devaluation of the currency, after mid-2014, contributed to the improvement of the external position of the country,

> contrary to what would traditionally occur. As a significant part of these liabilities is marked at market value, a fall in stocks and bond prices also contributes to said improvement in position. As a result, fluctuations in the stock of external liabilities of the economy and, therefore, of its International Investment Position, completely dissociate from the movements observed in the Balance of Payments" (Biacarelli, 2019).

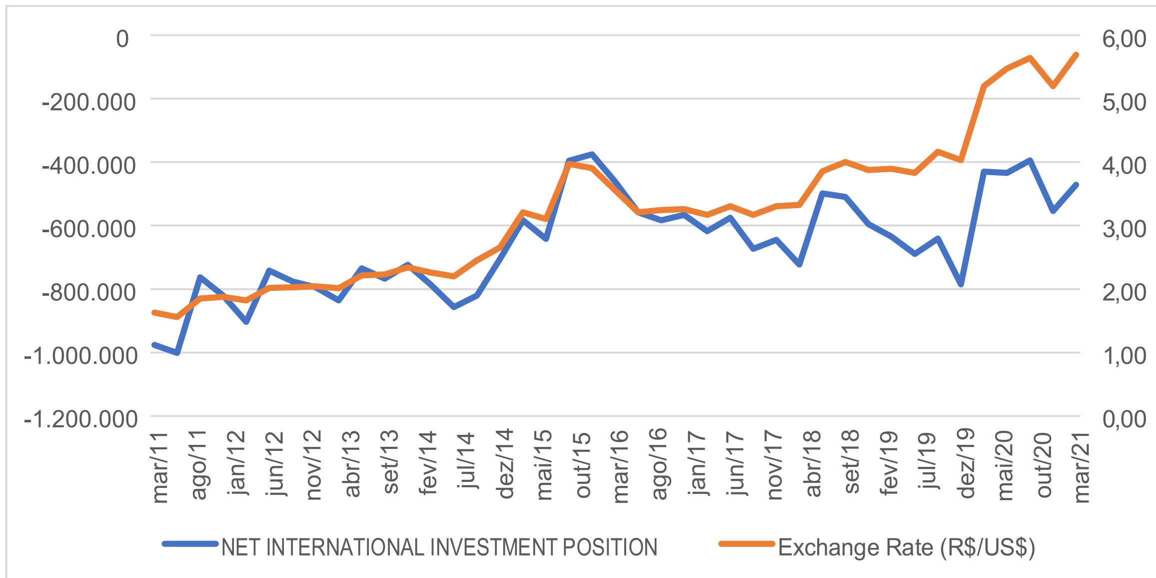
Once more the Brazilian crisis in the 1980s brings elements to the considerations on the importance of assets' structures and how short duration of public debt can condition macroeconomic management.

> "The holders of financial assets, thus, also held enormous power of dissuasion over monetary and interest-rate policymakers, based on the threat of quick shifts in positions with explosive effects on assets prices. This capacity of generating grave instability would become the decade's trademark, reflected in, among other elements, the evolution or dimensions, both in absolute and relative terms, of public debt during the worst years of the crisis" (Belluzo, Almeida, 2002).

It is true that the development of secondary financial markets meant greater liquidity for debt bonds in most of the world. However, shorter terms and indexation to interbank rates resulted in short durations, that is, low sensibility of prices to variations in interest-rates. Debt structure then was not conducive to adjustments in prices and quantities to capital flights, at the same time there was little cost in terms of asset prices to promote speculative attacks, making the economy even more vulnerable to these movements.

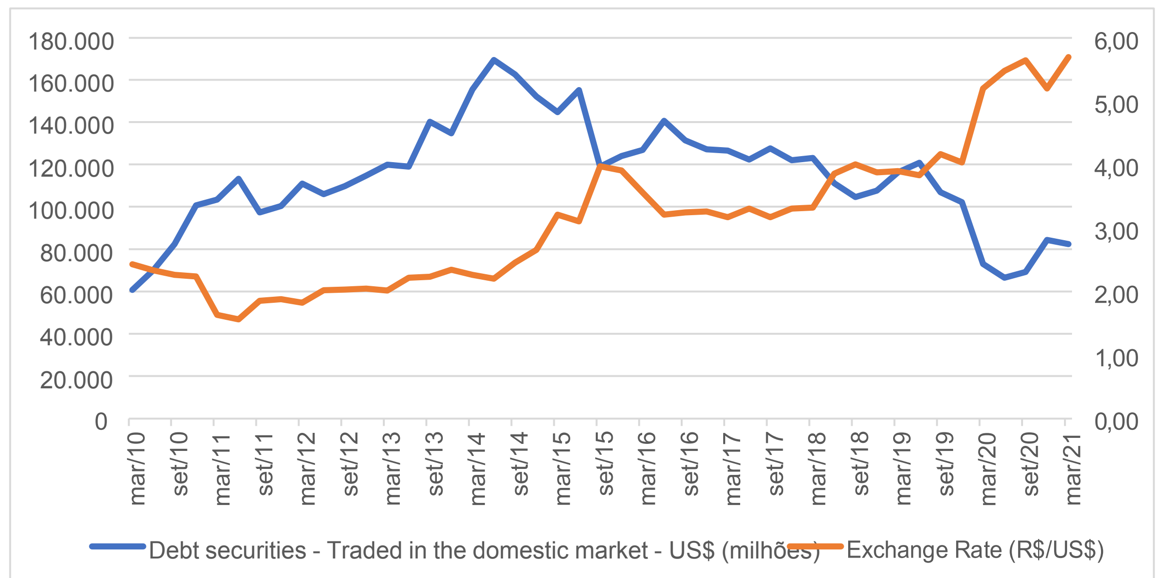
Graph 1 shows the importance of devaluing in the adjustment of "net international investment position" (correlation of 0,8266), a process that relies in the devaluation of domestic assets in dollar prices, as well as in the maintenance of the accumulated international reserves (US$ 355,6 billion in 2020). On the other hand, debt bonds traded in the domestic market (Graph 2) have also adjusted to the exchange-rate, but less proportionately (correlation of -0,3567), an indication that a high proportion of bonds indexed to the interbank rates and one day duration brings difficulties to the adjustment of the "net international investment position". It also points to the effectiveness of international reserves in broadening the freedom of macroeconomic policies, once it was possible to lower interbank rates since 2016, regardless of international liquidity cycles. This included negative real interest-rates during the first wave of the Covid-19 pandemic, also marked by continuous threats of a coup by president Bolsonaro, a period during which international capital flows towards Brazil were significantly reduced.

Figure 1: Net international investment position (US$ millions) (left axis) and Exchange-rate (R$/US$) (right axis)



Source: BCB

Figure 2: Market Value of Outstanding Debt Securities (US$ millions) (left axis) and Exchange-rate (R$/US$) (right axis)



Source: BCB

The Brazilian case thus shows that public debt plays a greater role than simply assuring returns to money holders, as preconised by MMT, but acts as well as an additional element of adjustment between external assets and liabilities, dissuading speculation against exchange-rates as is may risk losses to the holders of financial assets.

It is worth acknowledging that researchers associated with currency hierarchy did not formulate a theory of public finance in peripheral economies, linking external fluctuations to the financing of public deficits. In this, it fails to show the potential of sovereign states and how their issuing of money for public expenditure is connected with exchange-rate crisis beyond its impact on market expectations.

It is therefore necessary to establish a synthesis between currency hierarchy, post-Keynesians and MMT, allowing for a better understanding not only of peripheral economies and their public finances, but also of monetary economics in general.

Currency hierarchy, post-Keynesians and MMT: notes towards a synthesis

A research program envisaging a synthesis between the most relevant
aspects of the three currents of thought could be structured around the following points:

1. The analysis of money acceptance should consider the functions of currency both domestically and internationally, as means of exchange, unit of account, especially as it refers to the denomination of contracts, and value reserve;
2. When considered in terms of its functions, the demand for money does not impact the state's capacity to finance public expenditure without facing financial restraints
3. The degrees of freedom of state action are subject to the impact of international capital flows;
4. Public debt, in particular the structure of public debt, plays a relevant role in reducing volatility of exchange-rates and adjusting net external liabilities;
5. Control of external accounts is essential for the state to determine long term interest-rates without decreasing the duration of assets;
6. The ability to issue sovereign currency brings about important tools to deal with the currency hierarchy and the development process, especially regarding the potential for the capitalization of development banks, a topic certainly deserving of deeper analysis.

A general theoretical system calls for the abandon of the tax-driven monetary hypothesis, which is unable to explain phenomena such as hyperinflation. In this sense, the denomination of contracts should be considered essential to the broad acceptance of money, while its functions as means of exchange, unit of account and value reserve should be kept in the analysis.

This option should not invalidate the postulate according to which countries that issue sovereign currencies do not face constraints to financing public expenditures. As long as money is accepted as means of exchange, there is no reason to suppose any citizen would refuse it, while the state's ability to reduce the terms of bonds and determine indexes and returns assure the rolling of public debt and the acceptance of public bonds. In fact, all essential properties of assets, as proposed by Keynes in chapter 17 of the General Theory in terms of "l" liquidity, "c" carrying cost, "r" returns, are at disposition of states. Eventually, all money issued can be converted into bonds, but in situations of high uncertainty a decrease in terms and, therefore, of durations of bonds will be necessary, once liquidity becomes ever more relevant.

It would be insufficient to discuss the essential properties of assets only in its local aspects. As proposed by currency hierarchy, liquidity premiums vary internationally according to each currency's capacity to function as value reserve in global scale, potentially generating instability in peripheral economies. It is therefore necessary to assess the essential properties of money and other assets both domestically and globally.

MMT´s postulate according to which the sole purpose of public bonds is to assure returns for money holders becomes less convincing when the external liabilities of peripheral economies come into question: not only its denomination in local currencies is relevant, but also its duration. This allows for part of the adjustment of external liabilities to occur in local currencies, instead of entirely impacting exchange-rates, thus reducing the effects over costs and inflation in these countries.

Proponents of the currency hierarchy correctly assume that financial flows became central to explaining monetary crisis in the context of financial deregulation that followed the collapse of Bretton Woods. It may happen that interest-rates are inadequate to induce investment through the mechanisms of Marginal Efficiency of Capital. Fiscal policy could also become subsidiary to the interests of capital markets, even if those interests are irrational from a post-Keynesian point of view. State control of capital flows and the accumulation of international reserves are thus fundamental in order to strengthen macroeconomic policy vis à vis international liquidity cycles. Only capital controls, international reserves and robust positive results in the balance of payments can avoid violent oscillations in interest-rates. If agents expect a policy of low short term interest-rates not to be consistent in time, long term interest-rates are likely to be elevated (Keynes, 2013).

> “The long-term market-rate of interest will depend, not only on the current policy of the monetary authority, but also on market expectations concerning its future policy. Short-term rate of interest is easily controlled by the monetary authority, both because it is not difficult to produce a conviction that its policy will not greatly change in the very near future, and also because the possible loss is small compared with the running yield (unless it is approaching vanishing point). But the long-term rate may be more recalcitrant when once it has fallen to a level which, on the basis of past experience and present expectations of future monetary policy, is considered 'unsafe' by representative opinion”(Keynes 2013).

The monetary authority should then have control over external accounts in order to be able to systematically reduce interest-rates, without having to raise them shortly after as a way to prevent capital flights.

The monetary authority should also pursue low interest-rates in order to influence long term interest-rates. If inconsistent, monetary policy will lead to a rise in M2, as agents hold wealth in money or short term bonds, meaning, in the scope of this article, a shorter duration of public debt.

> “Thus a monetary policy which strikes public opinion as being experimental in character or easily liable to change may fail in its objective of greatly reducing the long-term rate of interest, because M2 may tend to increase

> almost without limit in response to a reduction of r below a certain figure. The same policy, on the other hand, may prove easily successful if it appeals to public opinion as being reasonable and practicable and in the public interest, rooted in strong conviction, and promoted by an authority unlikely to be superseded" (Keynes 2013).

Currency hierarchy has relevant insights on how exchange-rates and monetary policy can be managed more efficiently, broadening the temporal horizon considered by agents when deciding on long term investments necessary to any economy. If agents expect a low interest rate policy not to be sustainable over time, demand for liquidity related to the speculative-motive should increase, thus reducing the duration of public debt. A decrease in long term interest-rates should then be possible at the cost of loss of control over the structure of public debt.

However, exchange-rate crisis can perdure over time, making it necessary for governments to implement a strategy of exports diversification, in line with propositions of structuralist economics, taking into account the price and income elasticities of potential exports. Only by presenting successive positive results in the balance of payments can one prevent a macroeconomic policy from being held captive by subjective market assessments and international liquidity cycles. The use of public development banks funded by countries issuers of sovereign currencies is likely key to development in general and diversification of exports in particular.

Conclusion

The establishment of a theoretical system requires it to explain diverse real phenomena of its field of study. The explanations should be coherent and complete within the fundamental concepts of such system, that is, it should avoid ad hoc or any other explanations based on concepts not akin to that system.

MMT correctly explains the workings of public finances in different countries that issue sovereign currencies, even at the periphery. It is, however, unable to explain in its own terms how external dynamics end up subordinating internal ones, forcing policy-makers to adopt restrictive measures in spite of the sovereign currency.

It seems necessary, then, to abandon tax-driven demand for money, which is insufficient to explain phenomena like capital flights and hyperinflation. Post-Keynesians have already shown enough understanding about monetary phenomena in explaining the importance of money as unit of account and value reserve, as well as the deleterious effects on macroeconomic policy when it does not play said roles.

The functions of money should be considered both in its domestic aspects as well as internationally. Leaving behind tax-driven demand for money in favor of the functions of money does not, however, hinder the state´s ability to finance public expenditure without restrictions, at least as long as the currency can be used as means of exchange.

The control of international financial flows is fundamental for peripheral economies capacity to practice systematically low interest-rates and therefore pass them on to long term interest-rates without increasing demand for liquidity in the system. The rise in demand for liquid assets to

satisfy speculative-motive can reduce the duration of public debt, making it hard to adjust external liabilities in moments of crisis, as it may put too much emphasis on the devaluation of the exchange-rates.

The concepts put forth by MMT can be read in parallel with Keynes' idea of finance-funding, as they may help peripheral economies to avoid repeating past mistakes. By acknowledging there is need of ex-ante savings to finance public investments and that the state can generate purchasing power, governments can escape the error of insisting on the opening of the economy with the goal of attracting external savings.

Structural problems regarding the balance of payments still pose a challenge to analysis, given that the need of imports to supply essentials and capital goods remains a reality for most economies. However, the possible use of state funding to boost development banks is promising, despite the said need for imports.

The MMT has the merit of presenting a simple and transparent explanation of the logic of public spending as monetary issuance, of taxation with the destruction of currency and guarantee of its value and of government bonds as a determinant of interest rates. This simple explanation reaches an audience that goes beyond readers of academic studies of economics, which allows a wider audience to be informed about the fiscal possibilities of the State. However, the academic debate should seek to explain the various economic factors, even if an explanation becomes complex and less accessible to many readers. Future research should provide economists with a deeper understanding of the logic of public spending, taxation and government bonds, which in this work is still in initial form.

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