2. Macroeconomic policy under a managed floating exchange rate regime: a critical appraisal of the international currency hierarchy literature

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INTRODUCTION

The concern of economists with external constraints in the periphery is not a novel one.[1] Even the term "periphery" has long been employed to describe economies that are structurally dependent on the external sector, in opposition to "center" economies that have developed productive capabilities. This dichotomy between periphery and center is at the core of the origins of the Latin American Structuralist School, which has been a major influence for most heterodox economists in this region of the world. Development and growth constraints in the context of the periphery are the main object of Latin American Structuralism.

Currently, one of the most important strands in heterodox economics that openly embraces the influence of Structuralism is what we call throughout this chapter the "International Currency Hierarchy" (ICH) literature. Although there are similarities between ICH and Structuralism, their arguments regarding the existence of an external constraint in peripheral economies are essentially very distinct. While Structuralism has been mainly concerned with the productive capabilities of the peripheral economies, the ICH literature is focused on asymmetries of the international monetary system (IMS) and its consequences over peripheral countries. Even the dichotomy between periphery and center, we should note, is not exactly the same. In the ICH literature, the center–periphery relation is established relative to countries that issue peripheral currencies and countries that issue central currencies rather than the difference in productive capabilities.[2]

The other major influence openly embraced by the ICH literature is the post-Keynesian school.[3] Uncertainty, expectations, and liquidity preference theory are key elements in their theoretical framework, which is used to analyze monetary, fiscal, and exchange rate policies in the periphery of the IMS. The asymmetrical hierarchy of currencies in the system, according to the main argument of the ICH, would be responsible for the higher volatility of the exchange rates at the periphery, lack of autonomy for monetary and fiscal policies, and, ultimately, would be an obstacle to the implementation of broader development policies. The attempt to unify in some way these two schools of thought can be clearly detected in the name "Keynesian Structuralism,"[4] which is often adopted by authors of the ICH literature (see Prates, 2015; Paula et al., 2017; Fritz et al., 2016, 2018).

The theoretical framework proposed in the ICH literature has been largely disseminated by heterodox macroeconomists in Brazil. However, while ICH's main objects are monetary issues, and most ICH researchers identify themselves as post-Keynesians, one can hardly find any mention of the endogenous money approach, which is an essential feature of modern post-Keynesianism. Therefore, the purpose of this chapter is to debate whether or not the argument that peripheral countries do not have macroeconomic policy autonomy in a managed floating exchange rate regime remains valid when analyzed under the endogenous money approach. To be clear, we consider throughout this chapter the case of countries that have monetary sovereignty. A monetarily sovereign government in the modern monetary theory's (MMT) perspective is one that solely defines the official money of account, issues the currency denominated in its own money of account, imposes non-reciprocal obligations denominated in its own money of account (tax), and has the prerogative to decide what it accepts in payments and what it delivers in payments for its own obligations, goods, and services (Wray, 2015; Mitchell et al., 2019). That stated, one should notice that, from this perspective, to have monetary sovereignty, a country has to issue its public debt—entirely or in majority—denominated in its own currency.

The chapter begins with a brief overview of the ICH literature and its main concepts. Once they are established, we go through the main arguments regarding the constraints on monetary and fiscal policies of peripheral countries. Next, we present the circuitist/endogenous money approach for open economies and its implications for a central bank's ability to set and keep the targeted interest rate in an exchange rate regime with substantial interventions—the *dirty* floating. Following up, we make a critical appraisal of the arguments contained in the ICH literature in light of the endogenous money approach, considering that most peripheral economies actually operate a managed floating exchange rate regime.

PERIPHERAL CURRENCIES AND MACROECONOMIC POLICY CONSTRAINT

The ICH literature is openly influenced by both Latin American Structuralists and post-Keynesians (Fritz et al., 2016, 2018), and is deeply embedded in the current heterodox economics in Brazil and other countries. One could safely point to the Institute of Economics at the University of Campinas (Unicamp; Brazil) as a stronghold of the ICH literature, with many professors being some of the most important early (see Miranda, 1997; Carneiro, 1999) and current researchers in this literature.[5] As the Institute of Economics at Unicamp is one of the most influential research and teaching institutions of heterodox economics in Brazil, it comes as no surprise that ICH has been far-reaching in Brazilian heterodox macroeconomics.

The well-known center–periphery relation in a modified (monetary) version is at the base of the ICH. According to their analysis, the gradual erosion of the Bretton Woods system during the 1970s—financial and monetary market openings and deregulations with the *pari passu* abandonment (for the majority of the countries) of the fixed exchange rate regime—increased the deleterious impacts of the asymmetrical IMS that were kept at bay by the stricter regulations of the post-Second World War period. While the asymmetrical hierarchy in the IMS is not identified as a recent phenomenon, the end of Bretton Woods—meaning the end of the gold-dollar standard with fixed exchange rates—and financial globalization would be blamed for the narrower autonomy of the macroeconomic policy of countries at the periphery.

Asymmetry of the International Monetary System

The asymmetry of the IMS is responsible for the differences between countries that issue peripheral currencies, the country that creates the top central currency (the United States), and those that are at intermediate positions. Other terms employed in ICH's papers to describe the same hierarchy are "Northern" and "Southern"—"Northern" meaning the United States, which is at the top, but also other countries that issue currencies that have an intermediate position, as they are also liquid, yet with smaller liquidity premiums relative to the key one (Fritz et al., 2018). In earlier works of the ICH, the most common terms to describe this phenomenon were "convertible" (central) and "non-convertible" (peripheral) currencies (see Carneiro, 1999; Prates, 2005), but these have since fallen out of use. Some other variations can be found, but all with the meaning stated above.[6]

The distinction between central, intermediate, and peripheral currencies is rooted in the capacity of national currencies to perform "the three functions

of money on the international scale: means of payment, unit of account (and denomination of contracts), and store of value (international reserve currency)" (Paula et al., 2017, p. 187). Implicit in this argument is the idea that money is what performs the three functions simultaneously. On the one hand, central and intermediate currencies are national currencies that are able to settle payments, denominate prices (and contracts), and store value beyond domestic borders. However, among central currencies, some are only partially able to perform on an international scale—they are called intermediate currencies—and the key currency of the system (the American dollar, currently) is the only one that fully performs all three functions of money on a global scale. On the other hand, peripheral currencies cannot fully perform any of the three functions of money on an international scale and often have limited use even domestically. But, according to the ICH, not all peripheral currencies are exactly the same; a few are partially able to perform internationally—although on a very reduced scale—and the majority are barely accepted within their own national territory.

It is worth noting that, since a few peripheral and intermediate currencies are able to partially perform the three functions of money internationally, the line dividing both groups may be blurred rather than clearly marked like it is in the extreme cases. The existence of this spectrum in the hierarchy, instead of a binary division, is recognized and pointed out by many authors in the ICH literature.[7] However, while there is a recognition that the hierarchy is more of a spectrum, the analytical framework of the ICH adopts a simplifying assumption of a binary division—in which all peripheral currencies are taken as unable to perform on an international scale at any level[8]—and generalize the conclusions regarding macroeconomic policy autonomy at the periphery. As useful as this simplification may be, it clearly overlooks the diversity within the peripheral currencies' group and results in substantial loss of accuracy to analyze the reality of many economies.

The key reason why a peripheral currency is not able to perform the functions of money internationally is the lack of liquidity at the international level. Thus, in the simplified division, the central currency is considered to be the liquid currency, and peripheral currencies are considered to have a negligible degree of international liquidity. Consequently, the demand for peripheral currencies would be very unstable and often dependent on the business cycle. In periods of increased global liquidity (low interest rate in center currency economies and a good degree of confidence), investors search for higher yields in emerging markets, making the demand for peripheral currencies temporarily grow (Paula et al., 2017). Because the opposite is also true, when global liquidity and the degree of confidence decrease, the demand for peripheral currencies fades away. We must distinguish the market liquidity—which fluctuates with global liquidity—from the structural international liquidity of the currency that

remains unchanged (or changes at a much slower pace than global liquidity). The ICH literature is mainly concerned with the latter.

Therefore, although peripheral currencies may seem to become more liquid during periods of high global liquidity, their structural liquidity remains unchanged. As a result of being issuers of structurally illiquid assets, monetary authorities of peripheral economies end up offering high yields in an attempt to establish a more stable demand for their national currency. In other words, a stricter monetary policy is employed in peripheral currency economies to compensate for the lack of liquidity and to attempt to provide some stability to the exchange rate (Prates, 2015; Paula et al., 2017; Fritz et al., 2018; Bonizzi et al., 2019).

Monetary Policy and Exchange Rate

The fundamental link between being at a low level in the currency hierarchy and the lack of macroeconomic policy autonomy envisaged by the ICH literature is given by the necessity to at least partially control the exchange rate—meaning that central banks in peripheral countries have to be proactive at the foreign exchange market. There is a shared understanding among subscribers of the ICH literature that countries at the periphery cannot (and should not) let the exchange rate freely float because of the substantial deleterious effects it would inevitably bring to the economy. But besides that, controlling the exchange rate to maintain a competitive and stable level is considered to be the "main target that peripheral emerging economies should pursue to achieve external competitiveness" (Paula et al., 2017, p. 196).

It is argued that even with the end of the Bretton Woods system and, consequently, the ascent of the flexible exchange rate as the predominant regime in center countries, the periphery (understandably, from the ICH standpoint) remains wary of letting the exchange rate float freely. Controlling, at least partially, the exchange rate would also be beneficial because it would curb the uncertainty of most agents in the economy. Although many peripheral economies officially adopt a floating regime—as has been the case in Brazil since 1999—in practice, interventions in the exchange rate market are frequent and substantial. This is often referred to as the "fear of floating," a term found in the conventional economic literature (Calvo and Reinhart, 2002) and adopted in the ICH literature (Fritz et al., 2016; Paula et al., 2017). As Rodrik (2006) points out, since the early 1990s, central banks of developing countries (roughly the peripheral currency issuers) have been accumulating foreign reserves at a much faster pace than developed countries (roughly the central and intermediate currency issuers).[9]

Given the acknowledged reality that a flexible exchange rate regime simply does not exist in practice at the periphery, two strands of arguments are devel-

oped in the ICH literature to explain the lack of monetary policy autonomy. The first is that peripheral countries lack monetary policy autonomy because domestic goals have to be overlooked to set an interest rate that is more adequate to keep the exchange rate from going too high or too low—and this would have to be done only by means of the monetary policy, independently of the constraints in the external sector.[10] The high volatility of the exchange rate involves costs and risks for peripheral countries that would far exceed the ones faced by central countries, including inflation, international competitiveness loss, financial fragility, and slow economic growth (Paula et al., 2017; Conti et al., 2014).

When there is high global liquidity and investors are searching for higher yields at the periphery of the IMS, the absence of interventions in the foreign exchange market and the maintenance of interest rates at the same level by central banks would lead to an (excessive) appreciation of the domestic currency. This, in turn, could reduce international competitiveness,[11] decrease net exports, and slow economic growth. It also may lead to domestic private agents borrowing at lower interest rates in foreign markets, leading to increased indebtedness in foreign currency, potentially causing a problem of currency mismatch. Conversely, during low global liquidity periods, investors tend to leave peripheral economies in case the monetary authorities do not increase the basic interest rate, which would imply depreciation of the domestic currency, leading to higher inflation and uncertainty. In summary, for the ICH literature, central banks at the periphery would be, in principle, either forced to intervene in the exchange market or to reset the basic interest rate with the exchange rate as the primary objective. Then, according to this reasoning, all domestic goals of the monetary policy at the periphery would be secondary concerns that only occasionally can be addressed. In this sense, the monetary policy at the periphery is considered reactive to changes in the external sector, reflected (not only, but mainly) in the exchange rate. Thus, it cannot be autonomous.[12]

The second strand of arguments of the ICH for the lack of monetary policy autonomy is that substantial interventions in the foreign exchange market by the central bank cannot be performed because they would impair its ability to set the short-term interest rate. Before exposing the reasoning coming from the ICH literature which suggests why, in this scenario, the central bank monetary policy is impaired, one should first explain how these operations—usually called sterilizations—are de facto performed by central banks. The mechanism is the following: during a period of high global liquidity, central banks at the periphery purchase foreign currency at the foreign exchange market to prevent appreciation of the domestic currency. In this intervention, the central bank pays for the foreign currency by crediting high-powered money (reserve balances) in the banking sector. This increased amount of reserve balances in the monetary market would then create a downward pressure on the interest rate

of the interbank system that can only be avoided with a sterilization operation. Sterilization is carried out with the central bank selling government securities from its portfolio to drain the added reserve balances and offset any potential undesired impact on the interest rate. In similar fashion, during low global liquidity periods, the central bank sells foreign currency from its portfolio to prevent domestic currency depreciation. However, the sale of foreign currency ends up draining reserve balances from the banking sector, bringing about an upward pressure on the interest rate. In this case, central banks purchase government securities in the monetary market to inject reserve balances to offset any potential undesired impact on the interest rate.

In the ICH literature, however, sterilization is understood as a policy decision of the central bank, and not as a regular operation currently performed de facto by contemporary central banks to keep the short-term interest rate at this targeted level. It is important to highlight that, if sterilization was a policy decision—meaning that the monetary authority, for any reason, could choose not to sterilize the reserve balances created to pay for the dollar it is purchasing (in the case of inflows)—there would be changes in the monetary base leading to undesired changes in the basic interest rate. If one assumes that position (e.g., that the central bank could decide not to sterilize, or could be "forced" to that), one has to conclude that interest rate setting would be a result of foreign currency flows rather than being autonomously set by the central bank. Following this reasoning, one should ask, why would the central bank forego the sterilization strategy and altogether monetary policy autonomy? The plain reason pointed out by ICH would be the excessive "fiscal cost"[13]—the increase of the public debt entailing interest payments—of sterilizing exchange market interventions.

As clearly stated by Prates (2010), that would happen when the central bank is driving monetary policy with the primary objective of controlling or reducing the volatility of the exchange rate:

> Furthermore, in the Brazilian economy case, during this period [January 2003–June 2007], the impossibility of the Central Bank to control, simultaneously, the basic interest rate and the nominal exchange rate in this context was taken to the limit because of two specificities …
>
> The adoption of a more aggressive purchase of currency—with the objective of influencing the exchange rate trajectory—with partial sterilization of its monetary impacts would put the inflation targeting regime anchored in the maintenance of a high basic interest rate at risk. (p. 33, our translation)

According to the passage above, the central bank could perform (or be forced to perform) a partial sterilization of the foreign currency flows. As a result, in a context of surplus in the overall balance of payments, the interest rate could be forced downward. Of course, this would jeopardize the operation of the

inflation target regime, since the central bank would not be able to freely raise the interest rate according to the level indicated by the Taylor rule.[14] And more than that, if the central bank allows the short-term interest rate to escape from the targeted one, substantial instability in the national financial system should be expected, since all financial transactions are done based on a short-term interest rate that is at the base of the yield curve. Hence, if the central bank, concerned with the "fiscal situation," decides (for any reason) not to sterilize and leave the short-term interest rate to vary—a situation that, as far as we know, has never happened in countries that adopt *dirty* floating regimes with inflation targets—that could bring about important financial distress, besides its effects on the inflation target regime.

Fiscal Policy Constraint

Unlike the emphasis given to the link between exchange rate volatility (and the necessity to, at least partially, control it) and the monetary policy (and the necessity to have it as a tool to create a more stable demand for the peripheral currency), the constraint on fiscal policy appears in the ICH literature as an afterthought, only comprehensible when taking into account the prior considerations about exchange rate and monetary policy. The analysis of fiscal policy autonomy is based on the important assumption that fiscal policy is subordinated to monetary and exchange rate policies in the context of an inflation targeting regime and the need to keep the exchange rate at a competitive level in a *dirty* floating regime (Fritz et al., 2018). As for the ICH, monetary and exchange rate policies are the most relevant macroeconomic policies for price stabilization and economic development, respectively, whereas the fiscal policy role is basically limited to accommodating the other two macroeconomic policies.

To begin, we must go back to the sterilization issue. As the ICH literature considers sterilization as a policy decision under the monetary authorities' discretion, when there is foreign reserve net inflow and the central bank intervenes in the foreign exchange market to prevent domestic currency appreciation, the monetary authority has to choose between sterilizing or not. To put it clearly, the central banks' choice would be to (i) carry on sterilization and keep its ability to maintain the short-term interest rate at the targeted level, or (ii) forego sterilization to avoid increasing public debt and fiscal costs. Under the assumption that fiscal policy is subordinated to monetary policy, it is argued that the role of fiscal policy is heavily constrained by the necessity to sterilize.

One can see this relation very straightforwardly stated in an overview of the ICH literature presented by Palludeto and Abouchedid (2016):

> the accumulation of reserves ... results in additional pressure on public finances and also reduces the potential for other development policies because it reduces the financial resources of domestic authorities. The cost of reserve restricts the role of fiscal policy, which is to act in times of low economic activity and promote sustainable aggregate economic growth. (p. 80)

Therefore, according to the ICH, fiscal policy in peripheral economies cannot be autonomously conducted by the government at the risk of leading public finances to a point at which the central bank may be forced not to sterilize.[15] Fiscal policy has to be run passively, with the objective of reducing pressure on public finances and allowing for sterilization. Otherwise, there is the risk of running out of financial resources. One can identify in the ICH literature a trade-off between the government being able to set the interest rate and having fiscal policy autonomy in peripheral economies, as stated by Fritz et al. (2018):

> As peripheral emerging economies have to implement foreign reserve accumulation as a defensive and precautionary response to enhance their capacity of restraining speculative attacks in times of capital flows reversals, the need to sterilize the monetary impact of that policy (to counter the downward pressures on the policy rate) results in fiscal costs due the high interest rate differentials. (p. 216)

Another constraint on fiscal policy presented in the ICH literature is the discipline imposed by the globalized financial markets. Due to the volatile demand for peripheral currency and the deleterious effects of an abrupt depreciation of the national currency, the governments of peripheral countries would be subject to important pressures from international investors to which they would have to comply. Even considering that international investors adopt a mistaken economic theory (from a heterodox point of view) to reach their conclusions, they still could require governments at the periphery to adopt a fiscal policy based on sound finance doctrine, creating a self-fulfilling prophecy. Governments in peripheral economies that do not comply with the imposed discipline would be at constant risk of a capital flight (Fritz et al., 2018). Vergnhanini and Conti (2017) succinctly explain that "[not] much is needed to cause the 'flight to liquidity' movement ... Any action that goes against 'market discipline' and the so-called 'sound finance' may lead to a self-fulfilling prophecy of currency depreciation" (p. 27).

Although this argument seems to be instinctive at first sight, what does it mean theoretically? How exactly would a negative budget result, or an increasing public debt/gross domestic product (GDP) relation, trigger a capital flight?

Considering all else equal—domestic and international interest rates—the reversing of the interest rate differential that could trigger international capital to leave a peripheral economy would mean that the risk spread increases in response to fiscal indicators. In other words, fiscal policy autonomy would be constrained because peripheral economies' governments are disciplined by foreign investors. If the government does not comply with the markets, increasing risk spread would lead to either higher basic interest rates—to compensate for the risk spread—or to a capital flight, domestic currency depreciation, high inflation, and, possibly, an external crisis.

A CRITICAL APPRAISAL OF THE ICH LITERATURE IN LIGHT OF THE ENDOGENOUS MONEY APPROACH

The lack of macroeconomic policy autonomy, argued in the ICH literature, has been a major topic of debate in Brazilian heterodox economics regarding policy prescription, including many researchers who subscribe to post-Keynesianism. However, some elements in their core argument, presented above, seem to be out of touch with the endogenous money approach.

Endogenous Money Approach in the Open Economy and the ICH Literature

While the endogenous money approach is a well-known and essential feature in modern post-Keynesian strands—and this approach encompasses not only acknowledging that the commercial banks create money endogenously, but also that central banks exogenously set interest rates and must act in the monetary market, buying and selling reserves/government bonds to keep the targeted interest rate—its extension to incorporate the external sector is still not unequivocally acknowledged. This extension is established through the compensation principle,[16] which extends not only the endogenous money approach, but also the circuitist logic to the open economy. After a brief presentation of the compensation principle, we proceed to make a critical appraisal of the ICH main arguments.

According to the compensation principle, inflows or outflows of foreign currency do not impair a central bank's ability to set the interest at the level it believes is the most appropriate, whether it is a floating, managed floating, or even fixed exchange rate regime. Even in peripheral economies that are forced by the asymmetrical hierarchy of the IMS to control their exchange rate to some extent, the compensation principle should still be valid.

To explain the compensation principle, we assume a fixed exchange rate regime for the purpose of simplicity. The central bank establishes a fixed rate of conversion from the domestic currency to a target foreign currency (most

likely the American dollar). The overall balance of payments result—surplus or deficit—would create a tendency for nominal variations of the exchange rate, forcing the central bank to intervene in the foreign exchange market. If there is a surplus, the central bank purchases foreign currency by crediting reserve balances at the banking sector. At the initiative of this sector, excess reserve balances are utilized to buy interest-yielding assets (government securities) or pay their interest-bearing debt (if it is an asset-based or overdraft economy, respectively),[17] rather than held as bank reserves—a non-interest-yielding asset (Lavoie, 2001; Angrick, 2017). This process is triggered by the banking sectors' simple and logical decision to seek a higher return for their assets. One should note that while individual banks may use the credited reserve balances to purchase assets other than government securities, for the whole sector the credited reserve balances inevitably end up as government securities or as payment of debts with the government.[18]

Therefore, sterilization is not subject to a discretionary policy decision of the central bank. On the contrary, it is part of the reflux mechanism through which reserve balances created by the central bank in the foreign exchange market intervention flow back to the same central bank through the purchase of government securities by the banking sector. The central bank acts passively in the sterilization process, simply accommodating the demand of the banking sector for interest-yielding assets—public bonds. Instead of a change at the monetary base that would be caused by the exchange market intervention, there is an automatic compensation at another item on the central bank's balance sheet.[19] As a consequence, every foreign exchange market intervention is automatically sterilized at the banking sector's own initiative, under the normal functioning of the central bank—and independently from any macroeconomic policy decision (Serrano and Summa, 2015).

One important recognition to be made is that, from the monetary authority's perspective, and considering—for the sake of simplicity—a fixed exchange rate regime, while sterilization can go on limitlessly in the case of an overall balance of payments surplus, a tendency to deficits in the balance of payments would be limited by the amount of foreign currency at the disposal of the central bank to sell at the exchange market. So, in the deficit case, it is most likely that the central bank would either raise the basic interest rate to reverse the deficit or forfeit the fixed conversion of the domestic currency into foreign currency, effectively abandoning the fixed exchange rate regime. One should note that this is not a limit of the sterilization process itself, but rather a limit of the fixed exchange rate regime given by the total amount of foreign reserves previously accumulated.

On the other hand, in a *clean* flexible exchange rate regime, the absence of a central bank's interventions in the foreign exchange market means that reserve balances will not be created and, subsequently, the banking sector

will neither be able to buy the additional amount of government securities nor cancel part of their debt with the government. In other words, the quantity of money—monetary base—remains endogenous without the explicit operation of the compensation principle. As to the more real managed floating regime, or *dirty* floating, the compensation principle operates in the same way as in the fixed exchange rate regime, the difference being the amount of intervention in the foreign exchange market carried out by the central bank.

One can notice that there is a very marked contrast between the compensation principle and the ICH literature. In fact, sterilization's being a part of the normal functioning of the central bank (compensation principle) or being a policy decision of the central bank dependent on the state of public finances (ICH literature) may seem like a subtle difference, but it is essential for conclusions about monetary policy autonomy. Differently from the ICH argument, in reality there is no such thing as non-sterilized or partially sterilized foreign exchange market interventions. Even a managed floating regime with substantial interventions in the exchange market does not affect the central bank's autonomy to exogenously set and keep the interest rate at the level it believes to be the most appropriate.

In light of the compensation principle, as we could notice, there is no trade-off between monetary policy autonomy and fiscal policy autonomy. An increasing (or already very high) public debt/GDP ratio is not a threat to the sterilization process, which is automatically triggered by the banking sector looking for yields in the monetary market, independently of the fiscal situation. In other words, it is not that a peripheral economy with a high public debt/GDP ratio, and/or with negative budget results, has to choose either being able to set the interest rate or having an active fiscal policy.

In the case of countries that issue public debt denominated in foreign currency, unlike monetarily sovereign countries, there is the possibility of government default, and the monetary authority could be forced to increase the interest rate to roll the government's debt. So, while many peripheral economies issue their public debt in foreign currency—and do not have monetary sovereignty in the MMT's sense—one can point to other peripheral economies that issue public debt mainly or totally denominated in its own currency.[20] In other words, issuing public debt denominated in foreign currency is not a defining feature of the set of economies that has been currently called peripheral economies. Also, as sterilization is part of the normal functioning of modern central banks, being merely the operation of exchanging reserve balances in excess for government securities, differently from what has been posed by the ICH literature, it does not impair the implementation of an active fiscal policy.

It is also important to emphasize that the validity of the compensation principle is not disproved by the fact that the central banks of peripheral economies

take into consideration, or even set their monetary policy decisions based on the overall balance of payments results and, consequently, on the exchange rate tendency. It would be expected that an outflow of foreign currency would trigger a more restrictive monetary policy—mostly to raise the cost of leaving—but not as a result of the foreign currency outflow forcing the basic interest rate upward (Lavoie, 2001). The autonomy of the central bank to make monetary policy decisions, its ability to set and keep the short-term interest rate where it decides, is preserved even when there are substantial interventions in a managed floating exchange rate regime.

Fiscal Discipline

Besides the understanding—criticized above—that sterilization drains financial resources from the governments and constrains monetary and fiscal policies, there is also the argument that globalized financial markets impose fiscal discipline on peripheral economies. As presented above, among some authors there is an implicit idea that recurrent budget deficits and/or increasing (or already high) public debt/GDP ratio would cause a higher risk spread, narrowing or even reversing the interest rate differential. Calvo et al. (1996) suggested a similar mechanism, referring to the impact of the sterilization process:

> since sterilization involves increasing the number of domestic bonds to offset the currency inflow, it results in an increase in public debt. Eventually, this policy could result in a rise in public debt so large as to undermine the credibility of policymakers, especially if the public begins expecting a partial repudiation of the debt-expectations that may well halt the inflows altogether. (p. 134)

With a strict interpretation of this line of reasoning one would paradoxically conclude that an overall balance of payment surplus in a managed floating regime would lead to an increased perception of risk from international investors caring about the soundness of their portfolio. We consider that a more robust explanation for the increasing risk spread charged by investors should take into account the foreign reserve position of the central bank relative to the foreign currency denominated debt (Medeiros and Serrano, 2001).

Going further with the reasoning, one can pose the following question: If the international investors are subscribers of the sound finance doctrine, would they be compelled to withdraw their capital from "fiscally undisciplined" economies because they believe it to be too risky? To address this question, Jorge and Bastos (2019) analyzed the auctions of the Brazilian National Treasury in the 2000s and found no evidence that it was "threatened" by the market. Specifically regarding the international investors, the author concluded that "downgrades of international agencies *did not* cause a persistent pressure on

auction rates nor a persistent change in the amount of bonds sold to the market" (Jorge and Bastos, 2019, p. 10, emphasis in original)

So, from what is stated above, it is not a stretch to understand that international investors are not likely to give up a higher yield on their capital because of their commitment to sound finance doctrine. Therefore, in our view, the "discipline of the market" argument, which is often used to justify the lack of macroeconomic policy autonomy, cannot simply be invoked in the case of all peripheral countries. Perhaps a more specific analysis would be able to pinpoint in which cases the argument is valid, but certainly it is not appropriate to make this argument for the whole periphery.

CONCLUSION

The concern with external constraints and vulnerabilities, especially at the periphery, is mandatory. We acknowledge that the external sector vulnerability is a key limiting factor for the countries that are in general defined as peripheral economies. In this sense, the ICH literature has deepened the analysis about the external vulnerabilities related to monetary and financial dimensions of these economies and the limitations they bring about, enlarging the traditional debate about the relation between center and periphery focused on incomplete productive capabilities.

However, at this point, it remains rather unclear in which sense being at the bottom of the ICH's currencies pyramid would be a constraining factor to monetary and, especially, fiscal policies. The lack of mention of money endogeneity in a broad sense—as was treated above—in the ICH literature led us to believe that a critical appraisal of the fundamentals behind their core argument in light of the endogenous money approach would be interesting. That could even lead to a reappraisal of what is money in a monetary economy of production.

As stated in this chapter, our research has found elements in the ICH literature that are inconsistent with the endogenous money approach. As a result, our conclusion is that the ICH literature's main discussion, about macroeconomic policy autonomy, would greatly benefit from a clearer statement regarding this essential feature of contemporary post-Keynesianism.

NOTES

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2. Hereafter, mentions to periphery (or peripheral countries) and center (or center countries) refer to the ICH's concepts focused on monetary asymmetries of the IMS.

3. See Lavoie (2011) about the existence of multiple strands within post-Keynesianism.
4. Do not mistake it for Palley's term, structural Keynesianism, which refers to another strand of post-Keynesianism (Lavoie, 2014). Also, to the best of our knowledge, there has not been a critical appraisal of the fundamentals behind their core argument in light of the definition of money and of the endogenous money approach. As we argue in this chapter, macroeconomic policy limitations invoked by the ICH literature seem inconsistent with money endogeneity and, consequently, ought to be scrutinized before being incorporated into policy recommendations.
5. As it would take us far from our objective and would not significantly change the proposed debate, we do not go into a detailed discussion of whether or not the ICH literature is a school of thought. It is important to note, though, that the authors who are identified as part of the ICH literature have, to some extent, a homogenous theoretical framework with only small differences between them.
6. One should note that this hierarchy is not the same as the one proposed by Minsky (1986) and followed by others such as Wray (2015) and Bell (2001). The Minsky hierarchy is about domestic money: state money on top, banking money in the middle, and other debts at the bottom layers of the hierarchy (or pyramid).
7. See Conti et al. (2014) and Paula et al. (2017).
8. The difficulty in pinpointing whether some national currencies pertain to the group of central or peripheral currencies can be perceived by inconsistencies between different authors in the classification of some currencies—the Australian dollar, for example. This could possibly be related to the lack of a clear determination of the causes for the hierarchy. See Kaltenbrunner (2015) and Conti et al. (2014) for two very different explanations for the existence of the international currency hierarchy.
9. This is not only due to interventions to control the exchange rate, but is also part of an issuance strategy of the central bank of developing countries to prevent external debt crises.
10. Current account balance and the amount of foreign reserves.
11. The emphasis on the effect of the exchange rate appreciation on external competitiveness is discussed in much more detail in the New Developmentalism school. The essence of the discussion focused on deindustrialization remains very similar in the ICH literature, as one can see in Fritz et al. (2016, 2018).
12. According to the ICH literature, some monetary policy autonomy could be achieved with the imposition of capital controls that reduce speculative flows to and from peripheral economies. By hindering exchange rate volatility, capital control measures subsequently allow more freedom for monetary policy (Fritz et al., 2016, 2018).
13. The discussion about the "fiscal cost" of sterilization will be carried out in more detail in the following subsection.
14. There is no suggestion in the ICH literature that the inflation targeting regime is the most adequate or even that it works properly.
15. Palludeto and Abouchedid (2016) point out the exception when foreign reserve accumulation is accompanied by GDP growth due to net export growth. Public finances, in this case, would not be necessarily constrained by reserve accumulation.

16. The terms "compensation thesis" (Lavoie and Wang, 2012), "compensation view" (Angrick, 2017), and "Banque de France view" (Lavoie, 2014) can also be found in the literature.
17. See Lavoie (2014) for a detailed explanation about the difference between asset-based and overdraft economies.
18. Part of the reserve balances are kept as central banks' compulsory reserve requirements. Banks also hold a minimal amount for settlements with the government and with other banks.
19. Which item compensates for the lack of changes in the monetary base depends on the institutionality and relation of each central bank and banking sector. See Angrick (2017) for examples of the compensation principle taking place in different Asian economies.
20. As it is in Brazil, for instance, where public debt in its majority is denominated and settled in Reais, the local currency.

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