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The Currency Hierarchy and the Center-Periphery Relationship Revisited

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Abstract

This paper aims to reassess the center-periphery relationship in light of recent developments taking place in the international monetary system, with particular emphasis on the currency hierarchy. The focus of analysis of the center-periphery relationship in the literature has been historically limited to the international division of labor, the pace and diffusion of technical progress associated with it, and the pattern of consumption it embodies. By considering Latin American Structuralism and Dependency Theories, it was noted that the center-periphery theories gave little importance to the financial dimension of global capitalism. Today however, this seems to be its most relevant feature. According to the hypothesis adopted here, the financial sphere, and especially the currency hierarchy, is an essential aspect to understand the contemporary center-periphery relationship, particularly with regard to the degree of policy autonomy of the peripheral countries; one of the main dimensions in which it manifests itself. As has been demonstrated, because of its subordinate position in the currency hierarchy, the periphery is subject to greater external vulnerability, greater instability of exchange and interest rates, and, finally, a more modest policy space.

Keywords: currency hierarchy; center-periphery; development
JEL: B590; O100

Introduction

The spread of capitalist relations around the world is not a homogeneous or even a regular process. Assuming that capitalism will merely spread spatially and temporally, only reproducing the traces of its origin, is a serious mistake. Simply a quick look at the history of the capitalist system will reveal this. If it is true, as Marx (1976) suggests, that the analysis of capitalism in countries where it is already fully established, provides evidence of its future path in other countries,[1] it is also a fact that this observation is far from complete. The establishment of the capitalist system in a particular region or country is not independent of the existing political, economic, and cultural conditions. Nor is it independent of the international context in which it appears.

The recognition that different countries or regions also create distinct capitalist systems is a longstanding observation. Indeed, several authors and theoretical approaches looked to the elements of capitalist economic development in order to identify the factors that could be at the root of the inequality between different geographical areas, and eventually design national or supranational policies to prevent that situation. As highlights Vaggi (2008), one can find elements of what would constitute the heterogeneous program research in

[1] "*De te fabula narratur* [The tale is told of you]" wrote Marx (1976, p. 90) to the Germans referring to England. Further, Marx states categorically: "The country that is more developed industrially only shows, to the less developed, the image of its own future" (Marx, 1976, p. 91).

economic development, in the writings of Thomas Mun, William Petty, Adam Smith, David Ricardo, Thomas Malthus, Friedrich List, Karl Marx, among others. Although difficult to delineate, economic development can be defined as the branch of research dealing with the economic structure of poor regions or countries, incorporating reduction of poverty and inequality, improving health and education, and increasing production capacity and income *per capita* (Chenery; Srinivasan, 1988, p.xi).[2]

Among the various approaches to the study of economic development throughout the twentieth century that have been dedicated, especially after the Second World War, a prominent space is occupied by those who developed the view that the global capitalist system is guided by the relationship between a center which is advanced and developed, and a periphery which is backward, and underdeveloped. According to this perspective, not only are there several types of capitalist countries, but, these are not even in the same position at the international level, whether in terms of economic dynamism and social welfare, or political and/or economic autonomy. That is to say, when considered in its totality, global capitalism appears as a heterogeneous and hierarchical system. If, on the one hand, capitalist relations are unevenly spread, taking the suggestion of Trotsky (2008),[3] they result in an organization in which its various parts are not on an equal footing, but are in a permanent relationship of dependence and subordination.

There have been many attempts to understand this process and the implications that it had, and still has, among various national capitalist economies, especially in Africa and Latin America. Indeed, several studies between the 1950's and 1970's by authors from many theoretical frameworks, are still considered the best representative analyses of the center-periphery relationship and the limitations that a periphery position in the world economy imposes on its development. There are two major schools of thought: Latin American structuralism, and dependency theories. Even if these are viewed as distinct approaches, there is a common thread between them. The center-periphery relationship is associated with the international division of labor, the unequal development of technical progress, and its effects in both regions, and the pattern of consumption that it embodies (Vernengo, 2006). Here, it is observed that the center-periphery relationship results from the global configuration of the productive sphere and the unequal trade transactions arising from it. As suggested by Vernengo (2006), theorists of center-periphery relationships disregarded the financial issues of global capitalism. Although this omission is not critical in an international monetary and financial system characterized by control of capital flow and the existence of a fixed exchange rate system, as was agreed at Bretton Woods in 1944, this premise has become increasingly less functional, and even harmful, to analyses that aim to shed light on the contemporary nature of the center-periphery relationship, and the obstacles it places in the path of the least developed countries. The dismantling of the Bretton Woods agreements, and the consequent liberalization and deregulation of financial markets around the world from the 1970's were highlighted in different approaches, by Braga (1997), Chesnais (1997), Brenner (2003), Glyn (2006) and Belluzzo (2006), as the main factors conditioning the dynamics of the global economy in the coming years and, therefore, consideration of them is crucial for anyone who wishes to seriously understand the relation between the center and the periphery.

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[2] For more details about the concept of economic development, see Sen (1988).

[3] Trotsky (2008) is possibly the best writer who first summarized the way in which the capitalist system constitutes itself as a globally dominant mode of production through the formulation of what became known in the literature as the law of uneven and combined development. According to the author, the development of capitalism takes an "uneven and combined" form. The spread of capitalist relations is subject to particular and unequal historical situations, and combines these, giving them a new meaning, and uniquely includes them in the accumulation of private wealth. The combination of pre-capitalist elements with those present in the more advanced capitalist regions is now the accepted rule. For an analysis of the law of uneven and combined development, see Lowy (1995) and Van der Linden (2007).

This work aims to cover this gap, particularly regarding one of the central aspects of the financial dimension of contemporary capitalism; the currency hierarchy. The hypothesis adopted here is that the currency hierarchy, in a context of financial globalization, is an additional dimension of the center-periphery relationship, primarily by reducing the degree of policy autonomy of the peripheral countries. Beyond this brief introduction, the study consists of four sections. Briefly examined below, are some of the main topics traditionally addressed by theorists of the center-periphery relationship, divided into two major groups: the Latin American structuralism and dependency theories. The third section, in turn, is dedicated to the analysis of the currency hierarchy and some of its implications; and the fourth section deals with the restrictions it imposes on the development of the periphery, especially the lack of regional policy autonomy. Finally, there will be some concluding remarks.

1. Latin American structuralism and dependency theories: an overview

The perception that the process of the economic development of underdeveloped nations cannot be considered a natural result of the organization of the global capitalist system, but rather that this same global organization has perpetuated the situation of underdeveloped nations in many parts of the world, has made many authors challenge the idea of convergence associated with conventional economic theory, with neoclassical content (Saad-Filho, 2005). Research groups, especially in Latin America, developed their own unique theoretical apparatus, in trying to provide justification for the socioeconomic status of the region.

The heyday of Latin American studies on the center-periphery relationship occurred between the years of 1950 and 1960; after which, with rare exceptions, research programs declined. Among the earliest and most influential examples of this broad stream of thought, is Latin American structuralism, which has been associated since its very inception, with the Economic Commission for Latin America and the Caribbean (ECLAC).[4] This school of thought developed from the initial contributions of Raul Prebisch, first Executive Secretary of ECLAC, in his *Introduction* to the *Economic Survey of Latin America (*1949), which focused on the limitations to the development of the region resulting from its specialization in primary sectors. Structuralism is referenced, as is the reason why the theory acquired that name, since it is related to economic structures, blockages and imbalances arising from it, to the periphery (Love, 2005, p 101). In addition to Prebisch, other writers such as Celso Furtado, Octavio Paz, Aníbal Pinto, Osvaldo Sunkel, Maria da Conceição Tavares, are part of this school.

Structuralism begins with the premise that the world economy is defined by an industrialized center, with organized labor unions possessing great bargaining power, and a periphery with an abundant supply of labor, specialized in primary commodities for export, and a sector of low dynamism, dedicated to the domestic market. We observe, therefore, a dualistic conception of economic organization. On the international level there is a center, in which industrial activities are concentrated, and a periphery, dedicated to the export of primary products; and at the domestic level, the periphery shows a modern export sector and a backward sector dedicated to the national market (Saad-Filho, 2005). The gap between income generation, employment, and the technical progress associated with each of these sectors enables the periphery to be characterized, in direct contrast with core countries, by the structural heterogeneity of its economic structure (Pinto, 1970).

According to Palma (2008), Structuralism is dedicated to the examination of three tendencies that result from this configuration of the international division of labor in the

[4] ECLAC is a regional body of the United Nations linked to the Economic and Social Council, created in 1948 with the purpose of preparing studies and alternatives for the development of Latin American countries.

periphery; unemployment; external imbalance; and, finally, the tendency towards deterioration of the terms of trade, i.e., the ratio of the unit price of exports and the unit price of imports from the periphery. Dualism, or more precisely, the structural heterogeneity, that appears in the periphery, is a necessary element of each of these trends.

Employment in the periphery is associated with the growth of the economically active population, the rate of expulsion of the labor from underdeveloped sectors, and capital accumulation in the modern sector. Ultimately, it is noted that unemployment results from the inability of the export sector, the most dynamic, offset the asymmetries of the labor market, generated by its economic structure.

The specialization of the peripheral economy and the structural heterogeneity that characterizes it still result in an additional weakness, the external imbalance. Devoted to primary-export activities, the relevant portion of the demand for manufactured goods from the periphery is met by imports from central countries, which, in turn, satisfy their needs for commodities by importing from the periphery. Due to the fact that the income elasticity of demand[5] for primary goods is generally less than unity, contrary to what occurs with the manufactured products, "for a given rate of growth of real income in the center, the disparity between the income elasticities of imports at each pole will impose a limit upon the rate of growth of real income in the periphery" (Palma, 2008, p. 138). Attempts to overcome this limit, dictated by the international division of labor, are reflected in a permanent external imbalance in the peripheral economies.

According to the structuralist perspective, the income gap between the center and the periphery is not just a permanent feature of geo-economic organization of capitalism, but it expands due to the tendency towards deterioration of the terms of trade, also known as the Prebisch-Singer hypothesis.[6] Since the price of products exported by the periphery reveals a downward tendency relative to the price of goods that it imports, the limit on growth imposed by the external imbalance would be increasingly restrictive. The structural heterogeneity as part of the deterioration of terms of trade, can be seen in two complementary ways, first, by the supply side, and, second, by the demand side (Saad-Filho, 2005).

On the supply side, there is the impact of the abundant availability of labor in the periphery, which puts pressure on wages, and the low unemployment and high level of organization of workers that prevents wages from declining in the center. An increase in productivity in the modern sector, results in falling prices in the periphery, due to declining unit costs and high competition in the segment. Thus, the benefits of rising productivity in the periphery are transferred to the center by means of falling prices. In contrast, an increase in productivity in the center is not expressed in falling prices, but is appropriated by the workers and capitalists of the region. To the extent that the prices of primary products from the periphery tend to fall relative to the prices of manufactured goods from the centre, the terms of trade will also decline.

On the demand side, since the income elasticity of demand for primary goods is relatively smaller than the income elasticity of demand for manufactured goods, it follows that with income growth in the center and/or in the periphery, there is a tendency towards deterioration of the terms of trade. Therefore, increases in productivity and income combine to perpetuate an unequal structure of organization in the global capitalist system (Kay, 1991).

According to the structuralist approach, overcoming the peripheral condition, i.e., develop the economy, simply requires industrialization. The implementation of the manufacturing sector, particularly the branch of means of production, therefore, would be able

[5] Income elasticity of demand measures the response of the demand for a good to a given change in income. Formally defined, it is the ratio of the percentage change in demand for a particular good and the percentage change in income during the same period.

[6] For a historical overview of the Prebisch-Singer hypothesis as a distinctive element of Latin American structuralism, see Toye and Toye (2003).

to give economic dynamism to peripheral countries, and thereby remove the barriers to development stemming from their specialization in primary goods. Because of its focus on industrialization, structuralism largely supported the processes of Import Substitution Industrialization (ISI),[7] in place since the 1930's, whose subsequent failure was associated with the decline of this school of thought. Although structuralism must not be confused with the ISI, this model of development has become commonplace among several of its leading scholars and a reference point for many of its critics (Saad-Filho, 2005).

Although the second half of the twentieth century has witnessed the industrialization of several peripheral economies, which were able to incorporate important manufacturing sectors, this progress does not appear to have elevated them out of their original condition, as suggested by structuralist analyses. Despite having become industrial economies, Brazil, Argentina, Mexico, and many others, did not become developed countries, but still remain in the periphery of the capitalist system. Instead, a rise in income inequality, accelerating inflation, and external debt, has been observed.

Given this situation, which somehow manifested itself as a limitation to the structuralist theoretical apparatus, a heterogeneous alternative school of thought regarding the center-periphery relationship emerged during the 1960's and 1970's: dependency theories. In trying to understand the ways in which the relationship between the center and periphery results in powerful barriers to development in a region or a country, even one that has a relatively complex manufacturing sector, dependency theories combine elements of structuralism and Marxism, particularly the Monopoly Capital school(Saad-Filho, 2005). Moreover, the dependency theories not only engaged in the examination of the limits of peripheral capitalist development, but also, under the impact of the Cuban Revolution (1953-1959), were related to the issues of formation and the degree of autonomy of the national bourgeoisie, and how it can be overcome. Thus, dependency theorists are also part of the long debate about the nature and necessity of capitalist development in the periphery in the transition to socialism (Palma, 2008).

According to Love (1990, p. 168), four basic features characterize dependency theories: i) the historical perspective of the center-periphery relationship; ii) unequal exchange; iii) rejection of dualism; and iv) non-viability/autonomy of the national bourgeoisie. As noted, the first three items were derived directly or indirectly from the structuralist approach, and the criticisms that were raised by dependency theorists. The fourth element, in turn, is a typical Marxist one.[8]

Although dependency analyses share these common characteristics, and allow us to consider them as the same school of thought, it is possible to identify significant differences within the group. In fact, according to the many criteria adopted from the literature a larger or smaller number of groups within the dependency theory school was observed. In looking at the relationship between the internal and external socio-economic structures that comprise the periphery, Palma (2008) notes that there are three schools of thought,[9] the first group, which the main references are the works of Andre Gunder Frank, Theotonio dos Santos, and Ruy Mauro Marini, emphasizes the impossibility of capitalist development in the periphery; the second group, in turn, comprised of authors such as Celso Furtado,[10] Aníbal Pinto and Osvaldo Sunkel, seeks to reformulate the Structuralist approach from a critical perspective regarding the obstacles to national development; and the third

[7] "ISI is an attempt by economically less-developed countries to break out of the world division of labor which had emerged in the nineteenth century and the early part of the twentieth century. […] Import substitution consists of establishing domestic production facilities to manufacture goods which were formerly imported" (Baer, 1972, p. 95). As highlights Saad-Filho (2005), this strategy involved an enlargement of state intervention in the economic sphere.

[8] It is possible also to take item 3, the rejection of dualism, as a Marxist inspiration in dependency theories.

[9] For other classifications, see Packenham (1998) and Dos Santos (1998).

[10] Regarding changes in the intellectual history of Furtado, see Hadler (2012).

group, headed by Fernando Henrique Cardoso and Enzo Faletto, the co-authors of the 1969 influential book *Dependence y Desarrollo en America Latina,* contrary to the formulation of a general dependency theory, highlights the need to analyze the specific ways in which dependency has manifested itself in different national economies.

Considering that the underdevelopment of the periphery is not a temporary stage, but a permanent feature of the way in which the development of the center operates, the first group, whose Marxist inspiration is more evident, argues that the peripheral economy, since its origin, is completely integrated into the global capitalist system. Thus, the periphery is part of a typical capitalist economy, limited in its development by the very capitalist development of the center, for which the surplus from the periphery is directed by an unfavorable exchange ratio in the international market, and by the receipt of profits by transnational corporations operating in its territory.

Referring to the inadequate policies of import substitution, and the process of industrialization itself, as instruments to promote the development of the periphery, the second group, in turn, represents a shift in focus in relation to structuralism. Authors such as Furtado, exponents of structuralist analysis, began to view the limits of peripheral industrialization as signs of a dependency relationship. In fact, as highlighted by Palma (2008), industrialization through import substitution not only seemed to exacerbate the problems of balance of payments of the periphery, but also did not reduce unemployment as expected, and moreover, also resulted in high inequality in the distribution of income. Thus, theorists of this school began to consider the impossibility of peripheral capitalist development, but without pointing directly to socialism as a solution. The redirection of surplus to the center, and the imbalance between the modernization of consumption patterns and the production structure, reveals the nature of the dependency of the periphery according to this perspective. Industrialization, previously considered by structuralists as the way *par excellence* to overcome the peripheral condition, instead is transformed into simply one more way in which the spread of capitalism worldwide, generates new contradictions in the periphery, and restricts the pace of its development.

The third set of authors of dependency theory, beyond the general aspects of the evolution of the world capitalist system considered by the two groups above, highlights the particularities of the periphery in its relationship with the center. According to this approach, the center-periphery relationship is not a one-way street from the center to the periphery, but it is also conditioned by the way in which the periphery is positioned as a result of internal struggle between its social groups. Therefore, emphasis is given to the role played by local elites in the maintenance of underdevelopment, or, in other words, dependent and associated development. For Palma (2008, p 133):

> The system of 'external domination' reappears to an 'internal phenomenon' through the social practices of the local groups and classes, who share the interests and values of external forces. Other groups and internal forces oppose this domination, and in the concrete development of these contradictions the specific dynamic of the society is generated.

The economic outcome of the center-periphery relationship, remains, however, as in other approaches, as the transfer of surplus to the center and the limits that such phenomena imposes on the periphery, in this case, particularly, by the furtherance of the interests of local and transnational elites.

Therefore, in general, it can be ultimately considered that the center-periphery relationship, beyond the conflict of interests between the ruling classes of the periphery and the center, also shows for the dependency theorists, despite its internal differences, the international division of labor, the unequal development and assimilation of technical progress, and the pattern of consumption linked to this movement, which results in the transfer of surplus.

Although we recognize the limits the limits of the treatment here given to structuralism and dependency theories, which is not claimed to be original, but intended to summarize the main elements of both streams of thought, it must be acknowledged that both approaches have a common thread. In short, for theorists of the center-periphery relationship, this is determined by the structure of the productive sphere worldwide or, in other words, by the nature of the productive relationship that a country has with the international economy (Vernengo, 2006). According to this perspective, the development of peripheral economies would be dictated by the nature of its production and the political-institutional structure associated with it.

Theorists of the center-periphery relationship have perhaps overlooked an essential element of capitalism, particularly important for understanding the current economic dynamics; the financial sphere. Specifically, there is one well established aspect of the world capitalist system that has been disregarded by theorists of the center-periphery relationship which has become even more evident with the developments of the last several decades; the currency hierarchy.

2. The currency hierarchy in contemporary capitalism and its implications

The International Monetary System (IMS) shows, in every period of history, the interaction between four fundamental characteristics: the form of international currency; the exchange-rate regime; the degree of capital mobility; and the currency hierarchy (Prates, 2005, p.265). This last element expresses the fact that the different national currencies are not equivalents at international level, in regard to its three traditional functions (unit of account, means of payment and store of value). Although little is stressed in the literature, the currency hierarchy has been identified by Keynes in the *Treatise on Money* (1930), in the analysis of the different degrees of autonomy of the monetary policies of the debtor (England), and creditor economies (France and USA) (Prates and Cintra, 2008). Indeed, the proposals of Keynes at the Bretton Woods Conference reflect the perception of the hierarchical nature of IMS: the creation of the *International Clearing Union*, a central bank of central banks responsible for issuing a bank currency, the bancor,[11] that would prevent, for example, countries with internationally illiquid currencies from resorting to deflationary adjustments to deal with the problems of liquidity and solvency in the Balance of Payments (BLOCK, 1978).

The current IMS, resulting from the collapse of the arrangement agreed upon at Bretton Woods[12] in the 1970's, a political and institutional regime that was the background of the period that became known as the Golden Age of Capitalism, presents a *sui generis* combination of the four elements above, that is not favorable to the periphery.

First, the dollar is the dominant currency, i.e., the dollar is the only currency that fully meets the functions of the unit of account, means of payment, and store of value internationally. As previously stated by Marx (1976), the dollar is the world currency.[13] As Serrano (2003) notes, the contemporary international monetary standard, i.e., the form of international currency, unlike what had once been, is now totally fiduciary. In fact, the United States abandoned in the 1970's the already bankrupt Bretton Woods regime,[14] and the gold-

[11] Bancor was the name given to the supranational currency conceived by Keynes between the years 1940 and 1942 and proposed by the British commission at the Bretton Woods Conference. This offer naturally was rejected by the American delegation.

[12] For details on the Bretton Woods system, see Bordo (1994) and Helleiner (1994).

[13] "World money serves as the universal means of payment, as the universal means of purchase, and as the absolute social materialization of wealth as such (universal wealth)" (MARX, 1976, p. 242). For a study that attempts to develop this aspect of Marxist theory, see Smith (2005).

[14] John Connally, Secretary of the Treasury during the administration of President Richard Nixon (1969-1974), adequately expressed the direction of U.S. policy in the period in relation to the change in the international monetary system: "The dollar is our currency but your problem."

dollar standard introduced post-war, in favor of a flexible monetary system in which the dollar maintains no fixed relationship with any specific commodity, as was the case before with gold. Detached from the "barbarous relic," the IMS become a system that Serrano (2003) calls a floating dollar standard. The selection of the dollar as the international currency was reinforced by the interest rate shock in 1979, which led to the inauguration of the strong dollar policy, and by the deregulation and financial liberalization that followed (Prates, 2005). Tavares (1985) correctly argues that these measures and the consequent changes in the IMS, resulted in a debt crisis for several Latin American countries, is indicative of the U.S. strategy to reinforce its hegemony.[15] An additional reason for the strong dollar policy was the need to finance the U.S. budget deficit and the current account deficit, which increased during the 1970's, symptoms of lower production-technological dynamism in the country. The combination of interest rate shock with the net debtor position, made the U.S. debt securities the principal financial asset as a store of value demanded by international investors (Prates, 2002; Serrano, 2003). Thus, the form taken by international currency can be synthesized as a "flexible, financial and fiduciary" dollar standard (Prates, 2005, p. 269).

Moreover, the policies adopted by the United States to defend its hegemony continued the trend of the increasing degree of financial openness,[16] the increasing mobility of capital, and the accelerated development of the Euro market; setting it as the second feature of the modern IMS. Measures aimed at removing barriers to the free movement of capital around the world have become a standard part of the recommendations by important multilateral organizations, such as the International Monetary Fund (IMF) and the World Bank, and were eventually adopted by a large number of countries (Helleiner, 1994).

The greater capital flow mobility, in turn, was the ultimate cause of the collapse of the fixed but adjustable exchange-rate system of Bretton Woods, replaced by a floating exchange-rate system (Eichengreen, 1996). This high capital mobility environment, associated with the flexible exchange system that resulted from it, is what has been referred to in the literature as financial globalization (Kregel, 1996). The currency hierarchy, in this context, as will be discussed below, is a key element to understanding the greater instability of exchange and interest rates which has marked the past few decades.

Table 1 below summarizes the main features of contemporary IMS, as opposed to that of Bretton Woods.

Table 1 – Bretton Woods and contemporary IMS

Features	Bretton Woods	Contemporary
Form of international currency	Gold-dollar	Flexible, financial and fiduciary dollar
Exchange system	Fixed but adjustable	Flexible
Capital mobility	Low	High
Currency hierarchy	Low impact on exchange/interest rate instabilities	High impact on exchange/interest rate instabilities

Source: Prepared by the authors.

[15] The same argument is explored by Tavares and Melin (1997) and Tavares and Belluzzo (2005).

[16] The degree of financial openness can be regarded as "[...] the degree of the ease with which residents can acquire assets and liabilities denominated in foreign currencies and non-residents can operate in national financial markets [...]. Three broad types of transactions can be distinguished in this respect. First, inward transactions: allowing residents to borrow freely in international financial markets, and nonresidents to invest freely in domestic financial markets. Second, outward transactions: allowing residents to transfer capital and to hold financial assets abroad, and non-residents to issue liabilities and to borrow in domestic financial markets. Third, domestic transactions in foreign currencies: allowing debtor-creditor relations among residents in foreign currencies, such as bank deposits and lending in foreign currencies" (Akyüz, 1993, p. 27).

The advantages for the U.S. economy that such a system provides are widely recognized and noted by several authors,[17] (Serrano, 2003; Prates, 2005; Carneiro, 2008a, 2010). Among the benefits that flow to the United States due to the dominance that the dollar plays in the currency hierarchy, two deserve particular attention.

In the first place, because it is the issuer of the key currency, the U.S. does not have any external constraint. It is worth saying that deficits in the balance of payments that may eventually occur are automatically financed by the acceptance of dollars or dollar-denominated assets by the counterparty. According to Serrano (2003, p 251.):

> Now, the U.S. can incur permanent deficits on the current account without any concern about the fact that its net external liabilities may be increasing, for these 'external' liabilities are denominated in the American currency and not convertible into anything else.

In fact, this is exactly what happened, the United States incurred from the decades of 1970-1980, increased current account deficits, rapidly increasing its foreign liabilities, without losing the role played by its currency. Furthermore, since the U.S. economy faces no external constraint, historically recurring on the periphery of the capitalist system, it is free to change the value of the dollar against other currencies by changing its interest rate. In other words, the United States is the only national economy that can manage its monetary policy according to domestic interests exclusively. While other countries have limits, in varying degrees, to variation in the domestic interest rate due to the need to balance their external accounts, and avoid a leak/flood of international capital, the United States has complete autonomy. Consequently, the U.S. monetary authorities have ample room to maneuver and implement countercyclical policies when necessary, even if these policies may damage other national economies (Cintra; Prates, 2008; Carneiro, 2010). In fact, since nothing requires U.S. policies to be consistent with the domestic goals of other countries, the U.S. can, by its policies, markedly influence the direction of international capital flow, increase uncertainty regarding the trajectory of interest rates and exchange rates, all of which could be transmitted to other countries whose currencies are at a lower level in the hierarchy (Carneiro, 1999).

In this sense, the analysis of the currency hierarchy is within the context of contemporary IMS, marked by financial globalization. As seen above, the dollar as the international currency is at the top of the hierarchy; and possesses high capital mobility and the predominance of a floating exchange rate system. The analysis in the two subsections below is aimed at describing the concept and the main elements of the currency hierarchy, and some of their implications.

2.1. The elements of currency hierarchy

The position of each currency in the IMS is determined by its ability to perform its functions of unit of account, means of payment, and store of value internationally. According to De Conti, Plihon and Prates (2014), the use of the currency in the international context defines its liquidity in this sphere. If you consider that "a liquid asset [is one that] can be converted without costs and delays in means of payment" (Plihon, 2004, p. 27, our translation), we have that:

> the currencies which perform the functions of money internationally are liquid by definition, since they are already an international means of payment and are also a unit of account and store of value in a framework that enables the conversion of money held in purchasing power or settlement of contracts without generating any loss. Conti, Prates and Plihon (2014, forthcoming, our translation)

[17] In a study regarding dollar dominance in the world economy, Eichengreen (2011) recognizes the "exorbitant privilege" that the acceptance of dollar as the world money gives to the American economy.

Thus, the currency hierarchy is actually a hierarchy between the different degrees of liquidity that the various national currencies exhibit in the world economy.

When considering the three functions of money in the IMS, several authors, including Cohen (1971), and Krugman (1984), divide them into two dimensions: public uses and private uses (Table 2).

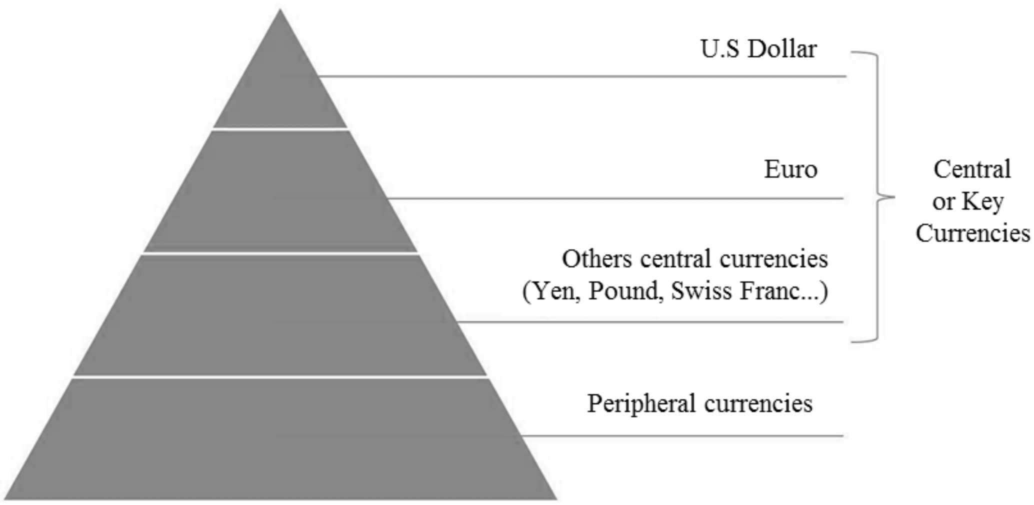
Table 2 – Functions of money: public and private dimensions

Functions of money	Public dimension	Private dimension
Unit of account	Reference (anchor)	Denomination
Means of payment	Intervention	Vehicle
Store of value	Reserves of CBs	Private assets

Source: Cohen (1971), Carneiro (2010, p. 3).

As a unit of account, liquid international currency works as an anchor for other currencies in the public sphere, and in the private sphere, it exercises the function of denominating a series of contracts. In turn, as a means of payment, international currency performs in the public sphere the role of an instrument of intervention by the monetary authorities in the value of its own currency, in relation to international liquid currency. In the private context, as a means of payment, liquid currency serves as a vehicle of the various transactions that occur internationally. As a store of value, in turn, international currency is used as collateral in financial wealth held by public entities such as the Central Bank, and owned by private agents as well (Carneiro, 2008a). The currency that performs all the functions in both dimensions at the international level, commonly referred to as the central currency, i.e., the dollar, euro, and yen, becomes, as defined by Aglietta (1986), a key currency.[18] The currencies that do not perform any of their functions internationally, or only meet them partway, are referred to by De Conti (2011) "peripheral currencies." The hierarchy can be illustrated according to the figure below.

Figure 1 – Currency hierarchy in the current IMS



Source: Prepared by the authors from De Conti, Prates and Plihon (2014).

But what exactly does a currency need to do, in order to become a key currency? The authors who seek to explain the selection process for the international use of currencies, reflect a wide divergence, which allows for the identification of two groups. The first group, represented by Cohen (1998), Krugman (1984) and Tavlas (1998), contends that the

[18] In the original French, *divise clés*. *Divise*, as its synonym in Portuguese, *divisa*, means international purchasing power.

determination of the international use of a currency is given by demand. That is, international agents, through the market, determine the currencies that exert their functions internationally. The second group, represented by Belluzzo (1997) and Aglietta and Deusy-Fournier (1994), assert that the selection of the international use of a currency is linked to supply. In other words, it is the issuing countries themselves that make the international currencies, and not merely the free market choice by international agents (De Conti, 2011).

The determining factors can be organized into five groups, using the classification proposed by De Conti (2011):

i) *The size of the national economy and integration with the world economy:* according to De Conti (2011, Ch.1), countries whose currencies are liquid internationally typically have GDP's and trade and financial flows; indicators of integration with the world market; that are bigger than other countries.

ii) *Geopolitical power:* according to Prates (2002), Herr (2006) and Belluzzo (1997), power relations influence the currency position in the IMS. The most powerful countries can enforce the use of their currencies through active participation in multilateral organizations, and by military power, among other forms of enforcement (De Conti, 2011).

iii) *Political will:* according to De Conti (2011, p. 63, our translation) "a country that meets the conditions [...] to internationalize its currency may participate in the process through public policies to that end." The most explicit example of this case is the United States, which has always promoted the international use of the dollar, through the Bretton Woods regime, and the strong dollar policy at the end of the 1970's, among other measures.

iv) *Strong and/or favorable institutions:* Cohen (1998), Krugman (1984), Tavlas (1998), and Reinhart, Rogoff and Savastano (2003), highlight the importance of strong institutions for internationalization of a currency. There are two basic types of institutions; multilateral institutions to support market transactions; and specific institutions, to promote the opening of local financial and exchange markets, allowing the currency to participate in international competition.

v) *"Responsible" economic policy and good macroeconomic performance:* Some authors, such as Herr (2006), and Reinhart, Rogoff and Savastanho (2003), emphasize that economic policy is crucial for the international use of a currency. That is, fiscal discipline, transparent and credible monetary policy, and a proper balance of payments, will increase the degree of confidence of international agents in a given domestic economy, helping its currency to be chosen.

2.2. Currency hierarchy and financial asymmetry

Contemporary currency hierarchy is intrinsically linked to financial asymmetry (Prates, 2005; Cintra; Prates, 2011). This, in turn, has two dimensions: i) capital flow directed to emerging countries,[19] is determined by external dynamics to those countries, which are permanently vulnerable to reversal by changes in the phase of the economic cycle, with increase/decrease of the liquidity preference of global investors, and changes in the monetary policy of the countries that issue international currencies; and ii) the marginal insertion of peripheral countries in global capital flow. The share of assets issued by these countries in the portfolio of global investors is residual.[20] But at the same time, the volume of capital flow from global investors to emerging countries is not marginal in relation to the size of their markets.

In this context, the different degrees of liquidity of currencies internationally will imply different rates of return on assets where they are used (De Conti; Biancareli; Rossi,

[19] According to Prates (2005, p.283, our translation), "the term 'emerging countries' refers to the peripheral capitalist countries that received most of the capital flow from the core countries in the 90's."

[20] It should be emphasized, however, that the share of assets specified in peripheral currencies in the portfolios of large investors increased, especially after the return of capital flow in 2009.

2013). In the case of peripheral currencies, their illiquid condition at the international level requires greater compensation of its assets, as there are inherent uncertainties in currencies that do not have the "liquidity of the key currency." But in moments of euphoria in liquidity cycles, agents demonstrate a pro-cyclical behavior; and a great appetite for risk and low liquidity preference, which results in a search for yield, and the illusion that the peripheral currencies have become liquid internationally.

This perception is illusory mainly for two reasons. First, because of the existence of financial asymmetry, the factors affecting capital flow are predominantly external to issuers of peripheral currencies, i.e., the behavior of the flow follows the phases of global economic cycles, and the level of interest rate in the country that issues the key currency (Prates, 2005). This implies that in times of reversal of the liquidity cycle, agents abandon the “search for yield" strategy and seek the liquidity of the key currency. Second, some characteristics wrongly attributed to the liquidity of the key currency are actually related to another factor, which can be called market liquidity, referring to the conditions in which an asset is traded in a market. These conditions are determined by the institutions (public or private) that operate in the market, by their size, the history of transactions, and by the agents themselves (institutional investors, foreign, nationals, etc...) who participate in the market (De Conti, 2011, p. 171).

Thus the division between groups of currencies that perform their functions internationally cannot be overcome in the short term, due to their structural character. Only market liquidity is susceptible to change in the short term, but within each group of currencies. It is erroneous to think that the increase in financial openness and market liberalization has a positive impact on the liquidity of the currency. This relationship is often negative, since financial openness could undermine the performance of some functions of money in the domestic sphere, causing more instability to the countries of peripheral currencies (Carneiro, 2008a; De Conti, 2011).

The illiquidity of peripheral currencies internationally makes speculative behavior common in peripheral financial markets. Additionally, the asymmetrical character of the international financial system implies that the pro-cyclical and destabilizer dynamics of capital flow, due to the process of financial globalization, may have a greater adverse effect on emerging countries. Thus, in moments of optimism, agents are willing to invest in assets that do not have the liquidity of the key currency, but in times of greater uncertainty, derived from financial market instability, there is a high preference for the liquidity of the key currency.[21] Therefore, the wide range of fluctuations in exchange rates of peripheral currencies is exacerbated, because "the relationship between flow of financial capital and turnover in exchange markets is radically higher in these countries" (De Conti, 2011, p.184, our translation).

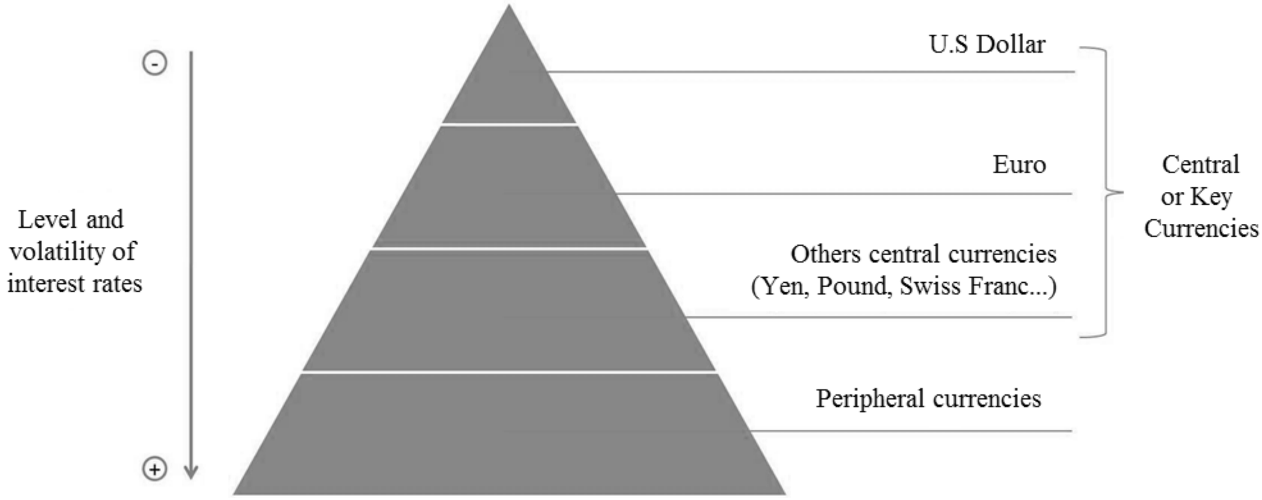
Moreover, according to Andrade and Prates (2013), the instability of the exchange rate in emerging countries, due to the illiquid condition of their currencies at the international level, affects the relationship between the domestic interest rate and the foreign interest rates, implying a high risk premium in relation to the key currency. Thus, the volatility of the exchange rate in emerging countries generates significant volatility in interest rates in these countries (Prates, 2005). Furthermore, the components of the interest rate, listed by De Conti (2011),[22] contribute to the fluctuation of this key price. According to the author, the interest rate of peripheral countries is comprised, in part by the interest rate of the key currency issuer; by the illiquidity premium associated with holding assets specified in peripheral currencies;

[21] According to De Conti (2011), changes in market psychology can also change the exchange rate without capital flow fluctuation. This occurs when the future exchange rate changes through arbitration, which impacts the spot market of the currency in question.

[22] It should be noted that the authors’ use of selected factors affecting interest rate determination does not include all possible factors.

by factors linked to the market liquidity such as country risk, which "indicates the additional premium that must be paid by the bond issuer for the risk that ownership of the asset means to the holder" (De Conti, 2011, p.178, our translation); and the expected exchange rate.[23] Most of the relevant factors to determining interest rates are external to emerging countries, and are affected by the very existence of the currency hierarchy in the context of financial globalization. It has been observed that countries that issue peripheral currencies coexist with an "impossible duality" (Flassbeck, 2001), because the financial openness in itself restricts the autonomy of monetary policy, regardless of the exchange rate system that has been adopted. Thus, the currency hierarchy implies heterogeneity in the level and volatility of interest rates globally, as shown below (Figure 2).

Figure 2 – Currency hierarchy and interest rate in the current IMS



Source: Prepared by the authors from De Conti, Prates and Plihon (2014).

However, the risk premiums are partly linked to the characteristics of national economies, including market liquidity. This internal component can become an important tool to reduce not only the interest rate volatility, but also the exchange rates. Thus, although the instability of exchange and interest rates make the exchange rate policy essential, and, at same time, complex in peripheral countries, because of the battle against increased exchange rate volatility, and result in a loss of autonomy in economic policy, particularly the monetary policy, there are recent examples, as will be discussed below, that show that the management of market liquidity may reduce the exposure of the periphery to hostile external conditions, despite the subordinate position occupied by its currency internationally. However, even if such measures can give some flexibility to the management of economic policy in peripheral countries, the currency hierarchy, an essential aspect of IMS, keeps presenting itself as a formidable barrier.

3. The currency hierarchy: a "new" dimension of the center-periphery relationship

The proposed argument, as previously set forth, is that the currency hierarchy, in a context characterized by financial globalization, imposes serious limits on economic policy, according to the position occupied by the currency in the IMS. In this sense, the currency hierarchy limits the ability of peripheral countries to overcome the socioeconomic conditions in which they find themselves, because it reduces the degree of policy autonomy. Therefore, the currency hierarchy presents itself as an additional dimension of the center-periphery relationship, which not only adds to existing limitations faced in the productive sphere, but

[23] Therefore, this formulation differs from the theory of uncovered interest parity, because it incorporates the "fundamental issue of international liquidity of currencies" (De Conti, 2011, p.177, our translation).

adds more restrictions, thereby reinforcing the heterogeneous character of the organization of the world capitalist system.

The idea that the currency hierarchy, in the current configuration of IMS, restricts the role of economic policy in peripheral countries, is well established in the literature under the concept of macroeconomic asymmetry. According to Prates (2002, p. 150, our translation), the currency hierarchy and financial asymmetry associated with it "(...) implies macroeconomic asymmetry, which relates to different degrees of policy autonomy of the countries that comprise the system."[24] Thus, the currency hierarchy can be seen as an application and extension of the concept of macroeconomic asymmetry.

First, however, there needs to be a specific delineation of the type of autonomy of policy to which we refer. Although there are various meanings, the term autonomy can be understood in this context as "the relative absence of externally imposed constraints" (Nelson, Meerman; Embong, 2008, p 326.). Thus, the degree of autonomy of policy is the space that domestic authorities have "to minimize damage, increase benefits, or seize opportunities arising from some change in international conditions" (Nelson, Meerman; Embong, 2008, p 326.). When restricted to the economic area, the policies about which the literature refers are, in general, macroeconomic: exchange, monetary, and fiscal. However, the limitations imposed by the currency hierarchy to the periphery are not confined to this space of policy action. Indeed, by reducing the degree of autonomy of macroeconomic policies, the hierarchy of currencies in a context of financial globalization also limits the space for other forms of intervention in the economy, such as productive and technological development policies. Therefore, it is possible and desirable to expand the macroeconomic concept of asymmetry, in order to incorporate other instruments of operations of the domestic authorities, as these too are restricted by the current configuration of the IMS.

The degree of policy autonomy associated with the concept of macroeconomic asymmetry may be linked, in this case, to what has been viewed in the literature as policy space, even though it has originated from the debate about international economic rules prescribed by multilateral agencies such as the World Trade Organization and the IMF. Policy space can be defined as "the scope for domestic policies, especially in the areas of trade, investment and industrial development" (Unctad, 2004, p. 2). In general, policy space refers to the "freedom to choose the best mix of policies possible for achieving sustainable and equitable economic development given their unique and individual social, political, economic, and environmental conditions" (South Centre, 2005, p. 1).[25] In so considering the degree of policy autonomy, the concept of macroeconomic asymmetry is expanded, in order to incorporate the various types of development policies,[26] and thus is best suited to the issue that we are illustrating here, namely: the relevance of currency hierarchy in the context of financial globalization as an added dimension to the center-periphery relationship.

The literature references several negative impacts on policy autonomy of peripheral countries, with specific regard to financial globalization, but rarely is the analysis related to currency hierarchy. Indeed, aspects that traditionally have been identified as causes of macroeconomic imbalances in the periphery, during the process of financial liberalization, and the financial crises that have occurred in various regions over the past three decades, such as original sin, currency mismatch, fear of floating, sudden stops, and debt intolerance, can instead be construed as typical results stemming from the effects of currency hierarchy. Therefore, what follows below is not a review of the debate about the problems of financial

[24] See also Ocampo (2001) and Biancareli (2010a).

[25] See Page (2007) and Mayer (2009).

[26] We consider development policies of all types of state economic intervention focused on specific sectors, as opposed to macroeconomic policies, with long-term perspectives, whose goals in light of the changing market forces, are to generate more employment and income, reduce inequality, increase productivity, and thus increase the competitiveness of the economy. This includes concern that the benefits derived from it are shared by the community. The most common are agricultural, industrial, and reducing regional inequalities.

openness in the periphery, nor the origin of concepts that have been suggested to explain them.[27] In other words, it is not our goal here to reconstruct the arguments that support each of the above aspects and/or the criticisms which have been included in the literature. We start with a pragmatic analysis of the relevant elements that relate to the economic dynamics of the periphery showing that they can be reinterpreted in light of the hierarchy of currencies in the current context of the IMS. Although conventional wisdom has first advocated financial globalization as a valid method for the development of peripheral countries, the results over time obtained from the beginning were clearly unsatisfactory, leading to a theoretical review by the mainstream[28] (Biancareli, 2010b). To the extent that the benefits that financial globalization would bring to the peripheral countries were not realized, several authors have suggested various critical reasons for this failure, many of which already formulated by heterodox economists. Even if, as Biancareli (2010b) asserted, authors saw negative impacts of financial globalization on peripheral countries, they did not view these impacts as results caused by the hierarchical character of the IMS.

One of the first effects of financial openness treated by conventional literature was the existence of a "fear of floating" among the peripheral countries, namely, the difficulty of these economies to fully adopt a floating exchange rate system (Hausmann, Panizza and Stein, 2001). This fear is observed especially in countries with a higher degree of pass-through,[29] and which have a high portion of liabilities specified in foreign currency, generating significant currency mismatch (Biancareli, 2010b). In fact, currency mismatch was another important effect identified in the literature. Subject to currency mismatch between assets and liabilities, the peripheral economy has its monetary policy restricted by the necessity of limiting exchange rate fluctuations in order to protect its internal agents, thus eviscerating the flexible exchange rate system that was supposed to prevail. Another negative impact of financial globalization, pointed out by Calvo and Reinhart (1999), which relates directly to the "fear of floating," is the occurrence of sudden stops in capital flow to peripheral countries. Contrary to what occurs in central countries, the movement of capital to the periphery, as already explained above, represents only a marginal fraction of the entire portfolio of investors, but nevertheless represents a significant portion of the peripheral markets. Thus, sudden changes in the direction of capital flow, such as a sudden stop, not only are more likely in the case of peripheral economies, but these sudden changes will be particularly harmful to external liquidity and solvency condition.

Among the various explanations for the above phenomena, one that deserves particular attention is a concept referred to as “original sin.” According to Eichengreen, Hausmann and Panizza (2007), original sin refers to the inability of a country to issue foreign loans in its own currency. According to the authors, this condition, characteristic of peripheral economies, ultimately results from the "structure of global portfolios and international financial markets" (Eichengreen, Hausmann and Panizza, 2007, p. 160). Although the authors did not explore the reason why this configuration of allocation of global financial wealth and financial markets exists in general, it is not difficult to conceive it as a result of unequal quality of international currencies. To the extent that the peripheral currencies do not fully satisfy, by definition, their three basic functions at the international level, it is not feasible for periphery countries to issue debt in their own currencies in the international market. This problem, according to Carneiro (2008a) and Vernengo (2006), is one of the largest constraints against the development of peripheral economies.

[27] For analyses in this direction, see Biancareli (2010b).

[28] Conventional wisdom or “[...]mainstream economics is that which is taught in the most prestigious universities and colleges, gets published in the most prestigious journals, receives funds from the most important research foundations, and wins the most prestigious awards” (Dequech, 2007, p. 281).

[29] *Pass-through* refers to the transmission of exchange rate changes to domestic prices (Farhi, 2007).

Furthermore, not only the composition of the agents' balance sheet in different currencies is relevant, but the maximum level of foreign periphery debt considered safe by investors is lower than that of the center, thus reducing the financing capacity of the region, and therefore constituting an additional source of interference with the ability to implement effective economic policies. In fact, there is evidence, as noted by Reinhart, Rogoff and Savastano (2003), that the periphery is characterized by high debt intolerance.[30] Although various authors were able to correctly identify this factor, it was attributed to the long history of default of the peripheral economies, which, in turn, is due to reckless management of economic policies and weak institutions. However, by crediting intolerance to a periphery country's own indebtedness as a factor that could be changed by a reorientation of domestic policies, the authors lost sight of the structure of the SMI, against which, the periphery can do little, if anything.

The need for foreign loans and the inability to issue them in a country's own currency, can lead to serious currency mismatch situations, and as a result, leave the peripheral economies more vulnerable to the fluctuations of the international liquidity cycle. The crises that affected many peripheral countries in the second half of the 1990's illustrate this susceptibility. In order to try to reduce this risk, much of the periphery began to adopt a dirty float system.[31] In a pure flexible exchange rate system, the greater instability of the interest and exchange rates to which the peripheral economies are subject, by virtue of the position internationally occupied by their currencies in a context of financial globalization, has a major impact on domestic agents. The nature of capital flow, especially if it includes investment in assets in peripheral currencies, is impacted by outside factors. This imposes a substantially greater degree of vulnerability on the region than that which would be faced by developed economies. In times of increased uncertainty as perceived by holders of financial wealth, the periphery undergoes sudden changes in the direction of capital flow, which worsens the conditions of liquidity and solvency of the region, and virtually requires the dirty float. According to Prates (2007, p 30.):

> "the dirty floating regimes grant significant degrees of liberty to emerging countries in the management of exchange rate policy. Under these regimes, these countries may choose different institutional formats, objectives and goals, as well as the adoption of technical management of capital flows that extend the degrees of liberty of exchange rate policy (attenuating the conflict with monetary policy) and the effective intervention in times of excess and shortage of foreign exchange."

The implementation of the dirty float system also revealed an important strategy of peripheral countries in an attempt to mitigate the negative consequences of the current configuration of IMS: the "precautionary demand" for international reserves (Aizenman et al., 2004). Rather than maintaining a competitive exchange rate, known as the "mercantilist argument," the central banks directly intervened in the foreign exchange market from the 2000's, especially in the period of the capital flow boom between 2003 and 2007. This action by the central banks is related to the expansion of external liquidity capacity support in times of reversal of capital flows (Prates, 2010). This not only reinforces the hierarchical character of the established monetary standard, it also results in an added cost to the peripheral economies due to the interest rate differential, i.e., the difference between the remuneration of reserves and interest on domestic government bonds (Rodrik, 2006).

Thus, it is observed that the currency hierarchy in a context marked by financial globalization has two immediate effects with respect to macroeconomic policy autonomy. The currency hierarchy not only limits the scope of monetary policy, which takes the place of

[30] Strictly speaking, the debt intolerance was described in the literature as a parallel interpretation to others, particularly original sin, in explaining the financial crises in peripheral countries (Biancareli, 2010b).

[31] The dirty float regime is characterized by "[...] governments and/or central banks occasionally intervening to attempt to influence the value of the currencies and volatility of the market" (BAILLIE, 2008).

an exchange rate policy, leading to necessary management of the impacts of greater global liquidity instability in relation to peripheral economies; but it also, generates an extra cost on public finance, even though it was intended to create instruments guaranteeing some stability to exchange and interest rates, and avoid Balance of Payments crises related to foreign debt and/or sudden stops in capital flow. By limiting the possible actions of domestic authorities, it reduces the possibility of a stable and secure environment for private investment in the periphery. Naturally, the adverse effects of the current IMS are largely conditioned by the degree of financial openness of peripheral regions. According to Tavares and Belluzzo (2005, p 130.), in peripheral economies, because of the illiquidity of their currencies:

> interest and exchange rates have become more sensitive to sudden changes in expectations of wealth owners. For these countries, the new financial integration has been accompanied by frequent problems of external liquidity, with large fluctuations in asset prices and currencies. This generates the severe limitations imposed on monetary and fiscal policies that undoubtedly have been more inflexible and lasting in the case of countries that have opened their capital accounts [...].

The 2008 financial crisis provides an interesting example of this process. The 2008 panic was followed by the breakdown in September 2008 of the investment bank Lehman Brothers, which immediately caused a quick "flight to quality," i.e., capital flow was directed massively to dollar assets, despite the turbulence that originated in the North American financial markets. This caused a sharp depreciation of peripheral currencies (Eichengreen, 2011). However, the coordinated countercyclical action of central countries, maintaining low interest rates and fiscal stimulus packages, made capital flow return with vigor to the peripheral economies, which lead in turn to a sharp appreciation of local currencies. Note that the periphery only tried to adjust itself to the international context, and to the extent possible, stabilize the exchange and interest rate. With the establishment of the capital account, the floating exchange rate system, and the international illiquidity of the local currency, there is little room for domestic authorities to act anti-cyclically. Citing Ocampo (2001), Cintra and Prates (2008, p. 188) observe that the center, with autonomy, is a policy maker and, in turn, the periphery, as a subordinate, is a policy taker.

Although this does not appear to be an encouraging scenario for the periphery, several countries in the region were able to reduce the effects of currency hierarchy by restricting capital flow. With the rise of a new phase in the global liquidity cycle since 2009, many peripheral countries have adopted capital management techniques,[32] in order to limit the unwanted effects on the exchange and interest rates. These techniques involve capital controls and prudential regulation,[33] and are aimed to control capital flow, and contain currency appreciation (Fritz and Prates, 2014). The experiences of developing countries with capital management techniques was addressed by the IMF (2011), through an analysis of emerging economies that received high portfolio flows throughout the crisis. The counties studied were Brazil, Indonesia, South Korea, Peru, South Africa, Thailand, and Turkey. These countries were characterized by high ratio of net capital flow to GDP, and a high share of portfolio flow in the total composition and high exchange rate appreciations. The use of these techniques by developing countries was necessary to reduce instabilities and unwanted fluctuations in exchange and interest rates caused by the large inflow of international capital. These measures also helped to contain credit growth, contributing indirectly to controlling inflation, increasing

[32] The topic "capital flow management" gained prominence after the return of capital flow in 2009, with conceptual advances mainly by IMF, an institution traditionally favoring financial openness. For a literature review on the issue see Fritz and Prates (2014).

[33] Fritz and Prates (2014) define capital controls as a variety of regulatory instruments (quantitative or price-based, residency or currency-based), designed to manage the inflow and outflow of capital, that are not regulated by the banking system and therefore, are not a part of prudential regulation. Prudential regulation consists of regulatory instruments that affect the position of assets and liabilities of resident banks.

the competitiveness of domestic products, and preventing excessive appreciation of local currencies. As noted above, despite representing a breakthrough as a means to reduce the instability of exchange and interest rates, capital management techniques only affected the restriction on market liquidity. Even if these measures were effective in mitigating the negative effects of currency hierarchy, as illustrated in the IMF study (2011), they have not changed IMS structure.

The effects of the currency hierarchy, however, are not limited to exchange, or monetary and fiscal policies, as noted above. Despite the instability of exchange and interest rates, the internal organization of the contemporary IMS reduces macroeconomic policy autonomy, and it limits critical policy space to use other tools of economic intervention. Exchange and interest rates are key economic variables, as their levels, fluctuation, and the way they are managed by domestic authorities, end up affecting the entire economic system. The feasibility and effectiveness of sectoral development policies, such as industrial, agricultural, technological development, and innovation policy, depend largely on the behavior of these variables and how the authorities act upon them.

There are several ways in which this subject can be examined. Here we will use four brief illustrations of the relationship to support our view.

First, all of the problems discussed above concerning the literature on financial openness, suggest that there is a less favorable environment for private investment in the peripheral economies, because the level and instability of the exchange and interest rates can have an adverse effect on the capitalist calculation, and expected profitability in the long run.[34] The development of sectoral policies in this environment becomes difficult because the same instability that affects the private investment horizon, limits the view of policymakers, and their own effectiveness, since the level and movement of the variables at stake may not be consistent with those that are contemplated in the planning stage by domestic authorities, and might require actions that are not appropriate in order to reach their goals.

Second, reduced monetary policy autonomy restricts the space in which the domestic interest rates may be defined as consistent with viable development policies. Even if monetary policy is administered in an attempt to contain the adverse impacts of the IMS organization on domestic agents, thereby reducing the instability of interest rates, the space in which this form of action can be reconciled with the objectives of an industrial policy, technological development, or other areas, the power to act may not be sufficient. In other words, the interest rate levels to which monetary policy is able to ensure some stability in general, does not correspond to that which makes the development policies feasible. Thus, the very formulation of these policies is limited.

Third, the accumulation of reserves, a strategy adopted by many countries, as already noted, 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 accumulation restricts the role of fiscal policy, which is to act in times of low economic activity, and promote sustainable aggregate economic growth. Reserve accumulation also decreases the available financial resources to implement industrial, agricultural, technological, and development policies. It could be argued that the cost of stability by accumulating reserves, when conducted properly, is at least offset by the economic growth stimulated by a more stable environment. This is the case for countries pursuing an export led model, because the accumulation of reserves in these economies is one consistent with an exchange rate policy dedicated to maintaining the exchange rate at a competitive level, along with favorable growth and development impacts (Prates, 2010). However, for those countries whose reserve accumulation represents a "precautionary demand," such as Brazil and Mexico, the opposite is true.

[34] For the exchange rate-investment relationship in Brazil, see Oreiro, Basilio and Souza (2013).

Fourth, in the peripheral countries that have adopted inflation targeting and dirty floating exchange systems, especially those with a high degree of pass-through, the exchange rate policy has a broad objective of controlling inflation by reducing the impacts of the exchange rate volatility on the price level (Prates, 2010). Moreover, monetary policy in most countries also is subject to inflation targeting. However, the interest rate level that ensures price stability, does not necessarily meet the goals of development policies.[35] The exchange and monetary policy, in the context of the pair floating exchange system-inflation targeting, fails to succeed in increasing the degree of policy autonomy, according to the definition proposed here. In Brazil, for example, the combination of high interest rates and appreciated currency, in the period between 2003 and 2007, greatly contributed to the "non-incorporation of the most technologically dynamic sectors, and also for selection of higher quality Foreign Direct Investment, reinforcing the trend of regressive specialization[36]" (Carneiro, 2008b, p. 53, our translation).

This short list does not exhaust the subject, but is intended to identify some avenues for future research. In many ways, the currency hierarchy limits policy space, restricts the possibility of development of the periphery, and thus reinforces the asymmetric structure of the world capitalist system. In particular, as suggested by the examples above, the currency hierarchy not only limits the level and volatility of key variables, and development policies, but it also interferes with a possible alignment between macroeconomic policies and the policies of periphery countries. In other words, the currency hierarchy, in a context of financial globalization, reduces the policy autonomy of peripheral countries in many levels of operation, and therefore extends the macroeconomic asymmetry between different national economies.

Thus, the analysis of the impacts of the new IMS configuration on the peripheral countries reinforces the hypothesis considered here, namely, that the currency hierarchy currently provides an additional dimension to the center-periphery relationship. In addition to being technologically dependent and hostages of an international division of labor, the peripheral countries are subordinated to a hierarchical IMS. It is clear that the organization of global production, and the many implications that flow from it, is an important component in determining the relationship between the center and the periphery. However, perhaps we need to give greater weight, as indicated by Tavares (2000, p 131, our translation), to “international money, and not technical progress, as a predominant feature of the center-periphery relationship.”

Concluding Remarks

This paper was an attempt to reassess the center-periphery relationship theories taking into account the evolution of the post-Bretton Woods international monetary system, and particularly the IMS currency hierarchy that followed thereafter. It was shown that the center-periphery relationship analyses seem to neglect the financial dimension of global

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[35] In addition to the different degrees of pass-through, Farhi (2007) points out that the various inflation targeting and floating exchange systems among peripheral countries cause different impacts on macroeconomic variables. According to Farhi (2007, p. 35), "the greater rigidity with which the regime (inflation targeting) is implemented, the greater volatility of interest rates and the product, and the increasing costs to society of compliance goals previously established." In relation to the floating exchange rate system, the lower the Central Bank intervention in the foreign exchange market, and the higher its purity, in an environment of financial openness, the greater the volatility of the exchange rate, which further reduces space for sectoral development policies.

[36] Regressive specialization is a term used by Coutinho (1997), which reflects the impact of the opening, put into practice in the 1990’s, and several episodes of appreciation of real on the Brazilian industrial production structure. This finding is supported from three distinct processes; reduced share of industry in GDP; the decrease in the density of production chains; and increasing participation of low-technology sectors in the industrial structure (Carneiro, 2008b).

capitalism, by instead emphasizing the international division of labor, unequal development, assimilation of technical progress, and the consumption patterns linked to this movement.

However, the dismantling of the Bretton Woods monetary and financial system is an aspect of global capitalism too obvious to be omitted. According to what was observed above, the national currencies exist in a rigid hierarchy at the international level, and their effects on the center-periphery relationship are evident. On the one hand, the issuer of the key currency of the system has the ability to manage its policies according to domestic interests, and has no external constraint. In contrast, the periphery is subject, by the international position occupied by its currency in the hierarchy, to greater external vulnerability, instability of exchange and interest rates, and, finally, insufficient policy space. Given this framework, integrating monetary and financial dimensions of global capitalism into the analysis of the center-periphery relationship is not only desirable, but necessary, if we want to understand the limitations and potential that the development of capitalism worldwide imposes upon different parts of the globe.

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