

The endogeneity of money: Post-Keynesian and Marxian concepts compared

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The relationship between the monetary and real sides of the economy is essential for the determination of the boundaries between different schools of thought. This relationship is often studied through the influence of money on the real economy, especially through the so-called (non-)neutrality of money. However, it is also possible to analyze it through the endogeneity of money. Broadly speaking, endogeneity implies that money is created in response to pressures stemming from the real economy, especially business activity. In this case, it follows that there is a close relationship between the 'real' and 'monetary' spheres of the economy, and that real variables influence monetary circulation.

However, the literature has defined endogeneity in widely different ways. One definition has been derived from economic agent hoarding decisions, which determine the velocity of circulation of money. For a second definition endogeneity has been derived from the perception that the credit system responds to (cyclical) business activity. In this case, money is endogenous because demand can change money supply. There is yet another notion of endogeneity, which argues that financial innovation creates substitutes of money, and thereby affect money availability. In all cases, private decisions can lead to the creation of monetary assets and limit the monetary authorities' control over the monetary dynamic.

This paper analyses these definitions, confronting some theoretical contributions on the question of endogeneity by investigating the analytical power of each one. In section one we contrast the Post- Keynesian analyses of endogeneity in Kaldor and Moore with that of Minsky. In our view, Minsky's approach is analytically superior because it reflects a broader understanding of the monetary system. In section two we extract from Marx's work an even broader notion of endogeneity, and show why it is superior to both Post-Keynesian views. We subsequently use the works of Rubin and Brunhoff to develop further Marx's notion of endogeneity. Section three concludes the analysis. The explanatory power of each argument discussed here will be assessed with respect to its ability to illuminate the role of money in the economy, the (limits of the) power of the monetary authorities, and the relationship between money, instability and crises.

I. Revisiting two types of Post-Keynesian meaning of endogeneity

The definition of endogeneity depends on our definition of money and our understanding of its role. The endogenous money view contrasts sharply with the orthodox exogenous money approach, which presumes that money supply is entirely under the control of the monetary authorities. In the orthodox view, money demand either does not depend on the monetary

authorities or, if it does, this dependence is irrelevant. It follows that money supply is independent from money demand, and that it can be used as an economic policy instrument. This view of the money supply process attributes to the monetary authorities control of the quantity of money in circulationⁱⁱ.

In contrast, proponents of money endogeneity argue that the supply of money is not under the absolute control of the Central Bank, but money is also supplied or emerges endogenously as a result of pressures generated within financial markets or by credit availability.ⁱⁱⁱ In spite of internal differences, there is a clear consensus in this camp that pressures within the economy lead to changes in the supply of money.^{iv} The ensuing concept of money presumes a complex unity in its creation and operation that involves society and economic activity as a whole. There are, however, disagreements about how such pressures emerge, and how banks, the Central Bank, and financial intermediaries react to them.

These two different positions may be more clearly defined through the classification initially proposed by Pollin (1991), of ‘accommodative endogeneity’ and ‘structural endogeneity’. Among the advocates of the first position, we may find economists such as Kaldor, Moore, Lavoie and Weintraub, who argue that, instead of a vertical money supply curve relatively to interest rates, as in the case of exogenous supply, one has a horizontal curve, illustrating a situation in which the Central Bank sanctions all the amount of money created by the banking system, supplying any amount of reserves demanded, and interfering in its cost only by determining the interest rate.

In contrast, there are economists such as Minsky, Rousseas, Earley and Evans to whom, in spite of their general disagreement with the so-called ‘verticalists’, there is scope for a certain degree of intervention of the Monetary Authority on the determination of the amount of reserves and, in turn, on the amount of money supply. There is also room for some discretionary action that affects the determination of the interest rates, such that the money supply curve can be conceived as non-horizontal. We shall perform a comparison between the works of Kaldor and Moore, on the one hand, and of Minsky, on the other, in order to clarify the reasons for such different positions.

For Kaldor

“in the case of credit money the proper representation should be a *horizontal* ‘supply curve’ of money, not a vertical one. Monetary policy is represented *not* by a given quantity of money stock but by a given *rate of interest*; and the amount of money in existence will be demand determined” (Kaldor, 1982, p. 24)

Kaldor argues for complete monetary endogeneity. For him, supply is entirely determined by demand, and the monetary authorities have no power to restrict the amount of money created. For him, short-term interest rates are determined by the Central Bank through open market operations

and the discount rate. Given these instruments, the Central Bank determines the market interest rate, and the other interest rates will follow the rate that has been signaled.^v

This argument implicitly assumes that the banking system is oligopolistic and transfers its higher costs to the final borrowers.^{vi} The borrowers' interest- elasticity of demand for credit is presumed to be low in the short-run, which implies that Central Bank attempts to control the money supply through cost increases are ineffective (Moore, 1988). However, even Moore admits that the monetary authorities are not passive or powerless; they simply use a policy instrument different from that presumed by the orthodoxy, i.e., they act on prices rather than quantities.

It may seem that the notion of a horizontal money supply is valid only in the long-run. However, Moore explicitly denies this interpretation, arguing that the Central Bank permanently changes the interest rate. Thus,

“a long-run money supply function does not exist, the level of interest rates cannot be specified independently of demand conditions” (Moore, 1988, p. 384).

Therefore, according to him, it is the short-run money supply that is horizontal.

Kaldor and Moore's view contrasts sharply with Minsky's. For Minsky, money supply is money issued by the Central Bank, plus bank money created through loans extended in response to the demand for funds, which make deposits. In addition, there are many different financial instruments deriving from financial innovations. These instruments appear endogenously, either to meet the demand for liquidity or to evade the controls imposed by the monetary authorities and by monetary policy rules. For Minsky,

“changes in financial institutions and money market usages are the result of legislation or evolution” ... “As institutional and usage changes are the result of activities aimed at profit, it shall be expected that such changes occur more frequently in periods of increasing interest rates”...“Higher interest rates... induce institutional changes in money market which lead to an increase in lending capacity. Such institutional changes may or not lead to an increase large enough in lending capacity to promote the same increase in financing which would have occurred in the absence of a restriction by the Central Bank” (Minsky, 1957, p. 171, 172, 182).

This argument is repeated in more recent works. Innovation in financial practices is seen by Minsky (1982a and 1982b) as a characteristic feature of the economy, especially in the upturn of the cycle. New financial instruments are developed and old ones are broadened or find alternative usages, which increases the availability of funds. As a result,

“... the supply of bank financing is within significant limits determined by the interaction of bankers and their customers, and given the existence of a wide spectrum of financial instruments, a substitution of liquid assets for money in portfolios will yield funds to finance position in assets” (Minsky, 1977, p. 146).

The interaction between banks and customers generating financial innovation is considered by Minsky the leading cause of the increase of money and liquid assets. This argument shows that Minsky attaches overwhelming importance to financial innovations in the supply of liquidity. Such innovations result not only from demand pressures, but also from the profit-seeking operations of the suppliers, who offer alternative financial instruments and try to evade the "restrictive actions of the monetary authorities" (Minsky, 1980, p. 511). The problem is, then, how to analyze both the demand pressures, which make money supply endogenous, and the endogeneity of the money supply deriving from the banking system's interaction with its customers. It is also necessary to examine the power of intervention of the monetary authorities, even though it is weakened by the possibility of evasion through financial innovation.

Indeed, Minsky draws attention to the effect of financial innovations (encouraged by rising interest rates) in increasing money velocity of circulation and opposing to restrictions imposed by the Central Bank, emphasizing that

“the resulting relation velocity - interest rate is a sum of the effect of a change in interest rates, where institutional arrangements did not change, and effects of changes in institutions” (Minsky, 1957, p. 183).

Here, Minsky seems to be outlining the short run effect of an increase in interest rates without accompanying financial innovations, in which case contractionary monetary policies may be efficient. In contrast, in the long run financial innovations counteract the monetary contraction through a higher velocity of money. In sum, for Minsky money supply can change in response to either Central Bank money creation, or money creation by banks and other private agents. The latter weakens, but does not entirely eliminate, the controlling power of the monetary authorities.

I.1 Liquidity Preference and Endogenous Money.

The fact of taking into consideration both, the supply and demand sides of money creation, leads Minsky to reach some analytical conclusions which, in our view, are superior to those of the ‘accommodationists’.

The main reason is that the accommodationist view underestimates Keynesian uncertainty by failing to capture the liquidity preference of the banking system^{vii}. The liquidity preference of banks opens up the possibility of non-accommodation of the demand for money, and is one way of interpreting the interdependence between supply and demand that the horizontalists fail to analyze. For Minsky, Keynesian uncertainty can increase the banks' liquidity preference. Consequently, under certain circumstances banks may ration credit or refuse completely to sanction credit demand, even when they can successfully transfer their higher costs to customers. This shows that banks'

liquidity preference must be included as one of the determinants of money supply, and it provides an essential link between money supply and demand, especially after the development of sophisticated credit mechanisms.

Keynes' (and Minsky's) analysis shows that when banks' liquidity preference (or their demand for money) is too high money supply is restricted, regardless of demand. This may cause financial instability and possibly a crisis, because banks will fail to accommodate the liquidity needs of the economy. ^{viii}

Lavoie doesn't accept this interpretation of the abandonment of Keynesian liquidity preference by the horizontalists. However, Lavoie seems to consider a distinctive concept of endogenous money, as will be shown below. For him,

“the discount rate, or the rate on Treasury bills, may be considered as the expression of the liquidity preference of the central bank. Second, commercial banks express their liquidity preference by setting a short-term lending rate (prime rates) at levels that are different from those offered or determined by the central bank, and by resisting changes in interest rates initiated by the central bank” (Lavoie, 1992, p. 195, emphasis added).

However, if the banking system can interfere in the determination of the ‘market interest rate’, which is the most important rate, then the interest rate is not exogenous as argued by ‘horizontalists’. Rather it becomes endogenous, because it depends on bank decisions, their liquidity preference, or on their own demand for money.

This problem reappears when Lavoie states that

“the theory of endogenous money is perfectly consistent with the fact that in times of recession banks are reluctant to lend, and may cut off credit lines. The reason for this is that the price of loans, the interest rate, is not a valid or sufficient exclusion mechanism” (Lavoie, 1992, p. 177),

Even the interest rate determined by the Central Bank cannot be seen as completely exogenous. The interest rate is determined by the Central Bank on the basis of the general financial conditions at a point in time, given not only by bank reserves, but also by financial innovations, the existing financial instruments, and the general liquidity preference. These variables affect not only the attitude of the monetary authorities, but also the structure of interest rates. This element has an endogenous character.

Curiously, Lavoie refers to the influence of liquidity preference on interest rates, but even so, he considers it to be exogenous. When discussing liquidity preference, Lavoie argues that

“The economic model becomes causal-recursive with the rate of interest exogenous; that is, influenced by decisions of the monetary authorities and possibly by the sentiment of the public about liquidity” (Lavoie, 1992, p. 193-194, emphasis added)

The sentiment of the public about liquidity, or liquidity preference, amounts to an endogenous demand for money, which in this case affects the determination of the interest rate that, consequently, becomes

endogenous. How then, under the circumstances presented, can one consider the interest rates exogenous as Lavoie does?

What happens is that, to Lavoie, exogeneity is linked to the fact that

“rates of interest even when liquidity is introduced, are thus exogenous: they depend on preferences and tastes that cannot be explained”(p. 196).

This notion of exogeneity derives not from the mutual dependence between supply and demand for money but, rather, from subjective preferences that prevent it from being precisely determined. It is noticeable that this argument creates another problem for the horizontalist view. If exogeneity is defined as an autonomous influence, then the money supply has to be also considered as exogenous, which opposes the accommodationist' way of thinking. This is because the supply of money also depends on the liquidity preference, equally subjective and difficult to determine and explain (and so an autonomous influence), when it avoid freeing cash, and so reduces the available supply of money.^{ix}

This discussion reveals the enormous importance of the interdependence between money supply and demand in the definition of endogenous money^x. Furthermore, the interdependence between money supply and demand makes the supply and demand framework inappropriate to deal with monetary issues. We shall refer to this later on. First, however, let us examine another aspect of Minsky's study which makes his idea of endogenous money analytically more robust: the emphasis attached to different kinds of money.

I.2 Different Types of Money.

Minsky's analysis of financial innovations focuses on the creation of financial instruments that replace money in some degree. This raises the possibility of existence of different types of money, in addition to money issued by the Central Bank or created by the banking system (the only types of money analysed by the horizontalists). In his analysis, Minsky highlights the qualitative difference between these instruments, which responds to the distinct liquidity preferences of individual agents. This diversity of forms of money implies that there may be a hierarchy between them, in which Central Bank money plays a specific role. For example, Minsky highlights the specificity of Central Bank money when he states that in financial crises this is the only type of money that is demanded, and the only one that can abort the crisis. It is as issuers of high-rank money that the monetary authorities have power (though limited) to intervene in monetary dynamics. This points to three essential aspects of monetary analysis, the necessary (but at times

problematic) convertibility between distinct monetary and financial assets, the distinctive role of Central Bank money in this convertibility, and the reasons why the Central Bank has the power to intervene, but not to control, monetary dynamics.

Even though Minsky argues that money supply is not horizontal with respect to the interest rate, he is far from the orthodoxy. On the one hand, Minsky admits that the monetary authorities have some power to influence the supply of money. On the other hand, he limits their power to determine the interest rate by arguing that its level depends partly on market conditions and on the liquidity preference of the public and the banks, which may change the available liquidity through financial innovation. Accommodative endogeneity, as the name suggests, eliminates the possibility of analyzing financial crises, since the demand for funds is always met and the Central Bank's can freely perform its role as lender of last resort. This denies the possibility of analyzing the instability and liquidity crises of the capitalist system, and leads to a more orthodox (and less realistic) stance. For this reason, these writers have turned to inflation as the only means to introduce instability into the system.

Moreover, as Kaldor's accommodative endogeneity relies completely on the monetary authorities to determine the interest rates, it ends up allowing them to control monetary dynamics merely through a change in instruments: not through money supply, as in mainstream analyses, but through the level of interest rates. This approach fails to appreciate the difficulties that surround monetary policy in the real world, and which limit the power of the Central Bank. This is why the horizontalists are closer to the orthodoxy than Minsky. Rather than explaining what factors make the economy intrinsically unstable, they simply assume that the monetary authorities can, with some ease, impose on the economy the stability that the market cannot guarantee on its own.

Skepticism regarding the effects of monetary policy may be uncomfortable, but it induces a search for more adequate control instruments and alternative economic policies. Accommodative endogeneity establishes distinct policy objectives (interference with production, rather than price stability as in orthodox analyses), and privileges another set of policy instruments (interest rates, rather than money supply), but it ends up shadowing the orthodoxy by failing to properly consider the limits to the power of monetary authorities.

Lavoie argues that:

“to portray monetary stance of the central bank, or liquidity preferences by banks through an upward-sloping money supply is to reintroduce the standard LM curve of neoclassical analysis” (Lavoie, 1992, p. 202).

In response, one might say that the perception that supply and demand tools are inadequate to analyze the monetary sphere is more important than the slope of the money supply curve. The

insufficiency of supply and demand analyses when these curves are not independent is clear in this case. While for goods and services supply and demand are independent functions, the same does not apply to money. In this case, when the liquidity preference of banks and other agents increases, money demand simultaneously increases, and the available liquidity falls because of banks' greater lending restrictions or the agents' increased reluctance in making cash available. This is an important conclusion from the analysis of money endogeneity. Another weakness of the supply and demand approach is that it gives analytical priority to the quantitative analysis of monetary dynamics and obscures the role of money as a social relation or as an essential coordination rule in economies that involve conflicts, hierarchies and complex institutional arrangements in the creation, conversion and retention of money and in the process of coordination production, circulation and distribution.

II. A broader notion of endogeneity

It is possible to read in Marx's monetary analysis a broader notion of endogeneity than the above two. For Marx, money becomes fully developed only in the capitalist mode of production, because it is linked to commodity production, which is completely developed only under capitalism.

Marx's monetary view assumed here is one that sees money in capitalism as solving the private-social contradiction typical of commodities production, as is the case of the capitalist economy. The commodity is characterized by a contradiction between the private character of labour at the time of its execution and its social character, because it is performed in a society where labour is socially divided. The solution of the contradiction between the existence of private, and simultaneously social, labour requires the emergence of money. Money transforms the private-social contradiction into the commodity-money contradiction, where the commodity pole represents private labour, and the money pole represents social labour. Money is responsible for the socialization of private labour, making the conversion of commodities into money absolutely necessary for the existence of commodity economies.^{xi}

This implies that money does not emerge by chance or fall from heaven; quite the opposite, money emerges among commodities, initially as a commodity itself, to solve problems intrinsic to commodity production. For Brunhoff (1971, p.9), money "is something linked to the commodity, one and the other implying socio-economic relations typical of commodity production". It is therefore impossible to eliminate or neutralize it unless the commodity character of the economy has also disappeared. If money emerges and develops because of the commodity logic underlying capitalism, this implies that money is (broadly) endogenous, or rather, that it is internally (endo) generated (genous).

This understanding of endogeneity can be related to Rubin's analysis of Marx's genetic method. For Rubin, the genetic (dialectic) method moves from relatively concrete and complex concepts towards relatively abstract and simpler concepts (e.g., from money to exchange value, value, and abstract labour), as captured by the analytic method. The opposite movement subsequently takes place, from simpler and abstract to complex and concrete concepts (abstract labour, exchange value, money), as in the synthetic method. According to Rubin (1978), Marx calls their synthesis the genetic method, because it enables us to trace the origin and development of complex forms. This is also called the dialectic method (p.110). This method seeks the fundamentals in a way that is inherent and endogenous to the system.

Exploring the analytical origin of money, as Marx does, instead of merely positing it, is of great importance for understanding the transformations of monetary systems. In their critique of French structuralism, Aglietta and Orlean (1984) point out the analytic potential of this kind of procedure. According to them, structuralism cannot account for the origin of money; as it simply assumed to exist. Consequently, "[t]here is also no hope of analysing the historical transformations of monetary systems" (p.17).

The genetic method is superior because it captures dynamic phenomena. It identifies basic tendencies, and allows definite conclusions about their dynamic evolution to be reached. The identification of the reasons for the existence of money (above) is essential to justify the intervention of the monetary authorities (below). In this context, we will treat the monetary authorities as endogenous, which broadens the notion of endogeneity of money. Moreover, it helps to develop the (endogenous) reasons for the necessity of their intervention in monetary dynamics, and indicates the limits of their power.

Marx's perception of money as a result of the inherent needs of commodity production surfaces in many different instances. As Arnon (1984a, p. 562) rightly argues, "the point of departure for both the *Contribution* and for *Capital I* was the analysis of a commodity-money that emerges with the emergence of "social labour" as "universal labour". Money goes through quantitative and qualitative changes in order to respond to the structural and transitory needs of production. This is especially true when Marx deals with money as a means of hoarding, and with credit. In both cases, changes in the availability of money derive from pressures intrinsic to the economic process.

Concerning the analysis of the means of hoarding function of money, Marx states that it works as the abductor channel of circulation, or rather, the availability of the means of circulation inversely depends on the public's desire to hoard, which in this regard is endogenously determined^{xii}. When

exploring the function of money as a means of hoarding, in the *Capital*, he emphasises the necessity of keeping money in order to pay for expected expenditures. In Marx words:

“as the production of commodities further develops, every producer of commodities is compelled to make sure of the nexus rerum or the social pledge. His wants are constantly making themselves felt, and necessitate the continual purchase of other people’s commodities, while the production and sale of his own goods require time, and depend upon circumstances. In order then to be able to buy without selling, he must have sold previously without buying.” (Marx, 1974, p. 131).

Marx develops the idea of money as: “exchange-value in the shape of a particular commodity” or “absolutely social form of wealth” (Marx, 1974, p. 131-132). Money can be demanded as a means of hoarding and in this case “social power becomes the private power of private persons” (Marx, 1974, p. 132). In qualitative terms as an “universal representative of material wealth” money is limitless. However, its limited quantity constrains its possibilities. Thus, “the desire after holding is in its very nature insatiable” (Marx, 1974, p. 133). These ideas had already been presented in the *Grundrisse*, in the *Contribution*, in which money is the “general commodity” and “universal labour”^{xiii}, and in the *Theories of Surplus Value*, where Marx defines hoarding as a larger demand of the general equivalent than the demand of all particular commodities (Marx, 1975, II, p. 602).

According to Marx, an increase or reduction of hoards works, in general, as “conduits for the supply or withdrawal of money to or from the circulation...” (Marx, 1974, p. 134), which endogenously affect the availability of money. This is what allows Lapavistas to state that “the entry of money into the sphere of exchange was shown to be endogenous to the theoretical schema and elicited by commodity circulation”(Lapavistas, 1994, p. 460). Surprisingly, Marx refers to the commodity money, seen by Kaldor as exogenous. This point will be developed in section II.2.

When Marx studied the debate between the Currency and Banking Schools^{xiv}, he agreed with Tooke that the demand for money responds to the business cycle, and encourages bank credit creation. The idea of endogenous forces that affect the availability of the medium of circulation was presented when Marx analysed money as a means of hoarding, and is further developed in his analysis of credit. In *Capital III*, when he deals with credit and the medium of circulation, Marx insists on the importance of forces endogenous to capital accumulation as the source of changes in the quantity of circulating money. In doing so, he was confronting directly the quantitative perspective of the Currency School.

According to Marx, “the quantity of circulating notes is regulated by the turnover requirements, and every superfluous note wends its way back immediately to the issuer”(Marx, 1971, p. 524). This leads him to agree with Tooke and the Banking School^{xv}. In his analysis Marx argues that the quantity of circulating medium changes with the industrial cycle (Marx, 1971, p.

526), and that “note circulation is just as independent of the state of the gold reserve in the vaults of the bank which guarantees the convertibility of these notes, as it is of the will of the Bank of England” (Marx, 1971, p.525). In sum: banks change the quantity of circulating money in order to face endogenous forces, and in so doing escape from the control of the Monetary Authority.

In his discussion on the origins of banks, Marx develops the idea of money flowing to the banks as a consequence of the dynamic of the accumulation process. These flows are formed by “reserve funds” which are transformed in money that can be lent, of “deposits of money-capitalists who entrust them with the business of loaning them out” and of “money savings and the temporarily idle money of all classes”(Marx, 1971, p. 403). In this kind of argument money constitutes a reserve fund or becomes temporarily idle accordingly to the evolution of the accumulation process. Marx mentions many different reasons of this, all them related to the path of accumulation. Thus, the availability of loanable funds is also in this sense endogenously determined. Finally, when criticizing the Currency School’s idea of the stable velocity of circulation, Marx again addresses the question of endogeneity. For him:

“the velocity of the money flowing as medium of circulation (...) depends entirely upon the flow of purchases and sales, and on the chain of payments, in so far as they occur successively in money. But credit effects and thereby increases the velocity of circulation”(Marx, 1971, p. 521).

He adds that

“in periods of predominant credit, the velocity of the circulation of money increases faster than commodity-prices, whereas in times of declining credit commodity-prices drop slower than the velocity of circulation. ... The reverse is true in a period of crisis.”(Marx, 1971, p. 448).

These quotes show that, for Marx, monetary dynamics, the availability of the medium of exchange and finance are determined by forces endogenous to commodity circulation. In a recent work, Brunhoff (1998) observes that:

“the general equivalent is not endogenous either as a commodity (gold) or as an asset.

Money cannot be a commodity that is produced and exchanged like others, so its price of production was not taken in account by Marx. But there is a market price and a state price of gold (the mint price fixed by the state)” (Brunhoff, 1998, p. 178).

The meaning of endogeneity rejected by Brunhoff is not the same as that which we have discussed; it refers to the endogenous determination of the value of money through supply and demand.^{xvi} As we will see in the next section, this conception leads to a view of monetary dynamics that can be seen as a hierarchically articulated pyramidal structure, with a private and a public levels.

II.1 Money as a social relation and the role of the monetary institutions

For Marx, money is an essential social relation in economies where the private-social contradiction holds,^{xvii} and money plays an important role in the coordination of these economies through the socialization of private labour. This is a conflictive process, because the private-social contradiction cannot be eliminated, but merely shifted to another level:

“Money is inscribed in the functioning of a kind of production where it plays, as an element of fulfillment of exchanges, a connecting role between producers-traders, separate and interdependent at the same time” (Brunhoff, 1981, p.9).

This conception of money as a social relation makes it specific. It is through monetary contracts that the workers sell their labour power. This not only inserts the workers into the capitalist logic of production, but explains exploitation too. Money capital must buy the commodity labour power in order to obtain profit. Profit is always monetary, and it upholds the social position of the capitalist. Thus, money cannot be confused with goods or with ordinary commodities, which do not have a similar social role.^{xviii}

If money is a social relation and the agent of the socialization of private labour, it cannot remain at the mercy of private interests.^{xix} On the contrary, money mediates between these interests in order to shift the private-social contradiction and allows capital accumulation to proceed through monetary purchases and sales. Thus, there is a need for centralizing state action over money, and the public character of the monetary authorities ensures their relative independence from private interests. This is what immanently “imposes” the necessity of state action over money. State actions are hierarchically superior to private actions. When the state mediates the relationship between private agents it shifts the private-social contradiction. This mediation is necessarily non-neutral, because it follows a non-neutral (and necessarily exploitative) capitalist logic, even though in some cases it may contradict the interests of individual capitalists.

The public character of the monetary authorities' actions, and the private character of banks and other agents, shape a hierarchic monetary structure and makes explicit the simultaneously public and private character of money and of monetary dynamics.^{xx} The public character of the monetary authorities cannot be confused with the social character of monetary dynamics as a whole, of which the monetary authorities are only one part. This illustrates the relativity of the power of the monetary authorities. As public entities, they have superior status vis-à-vis banks and other private agents; but as a part of society they suffer from pressures determining monetary dynamics as a whole. This makes the autonomy of the monetary authorities merely relative and limits their power to intervene in the economy.

The public character of the monetary authorities does not, of course, eliminate its class foundations. The monetary authorities are continually intervening to supply enough medium of circulation to allow accumulation to proceed, while preserving the character of money as the general equivalent. This is made through a *tatônement* that may include conflicting objectives. The monetary authorities care for the continuity of the process of accumulation as a whole, while on some occasions having to provide credit to buy time when the class struggle is particularly acute. At other times, they attempt to control inflation, possibly against sectional interests. In both cases, they respond to the same broad, non-neutral logic of a capitalist mode of production built on the exploitation of labour.

In Marxist literature money socializes private labour as and when the commodity is converted into money; when this takes place the private labour contained in the commodity becomes social labour. Money is the social representation of labour, and it is the immediately social recognition of its labour content that allows it to reflect the value of other commodities. When money no longer is a commodity the immediate link with labour content ceases to exist. In spite of this, money continues to socialize private labours. However, its social role as mirror of value must be re-established continually through social practices involving bank-creation of money, the sanctioning of bank money by the monetary authorities, and the validation of the national currency through its conversion into international money. These processes represent the socialization of money itself, or its need to permanently reaffirm itself as a general equivalent, socially recognized as being able to fulfil the role of mirror of value, of "generally abstract social labour".

This limits the monetary power of the state, and reconciles value generated in production with circulating values distributed as income, even though this process may sometimes happen brutally, through crises (Mollo, 1979). This relationship, and the necessary (but not assured *ex ante*) compatibility between production and distribution, as well as Marx's analysis of class conflict, give his theory of crisis an objective content.

Banks are forced to convert their money into the national currency because of their private character. Consequently, the conversion of commodities into bank money merely anticipates the socialization of private labour, or pre-validates private labour from a social point of view, in which case validation is incomplete. In the absence of a Central Bank currency with intrinsic value convertibility is established only through the confrontation between different monies in the centralized system:

“the central money serves as a common means of payment and safeguards the unity of the system, in spite of the plurality of book-keeping currencies; it allows the system to function as if there were a single money issued by a single bank. And the convertibility between book-

keeping money and fiduciary money finds itself safeguarded by the same form of centralization;....” (Brunhoff, 1971, p.124).

This illustrates the peculiarity of Central Bank money, and its hierarchically superior position. When the Central Bank sanctions commercial banks' creation of money which has prevalidated private labour, this does not socialize private labour either; it merely pseudovalidates it, because the Monetary Authority is merely public, rather than social.^{xxi}

Lipietz explains this hierarchical structure saying that credit “represents a value in the course of realization”. When credit

“confronts particular fruits of private labour to be realized, as commodities, it still represents legal recognition of the social character of that private labour. The only difference is that instead of finished labour (gold production), the labour involved here is in the course of realization. Instead of the law being: Gold is exchangeable, it becomes: these values in process must be considered as realised”(Lipietz, 1985, p. 86).

Credit is seen here as representing value (in process), and when banks extend credit they are "anticipating the social validation of the private labour set in train by their clients"(Lipietz, 1983, p. 92). A Central Bank is necessary to ensure that the debt symbols issued by the banks "represent some socially useful labour", which necessarily involves some public authority. In doing so, the Central Bank "does more than antevaildate credits by waiting for the independent values they represent to return in the shape of 'already recognized money'", as banks in general do. The Central Bank pseudo-validates them - for example, by changing credits with bank X on value in process A for central banknotes which everybody has to accept as real money" (Lipietz, 1985, p. 91).

Lipietz points out that his concept of pseudovalidation is different from Brunhoff and Cartelier's (1974), because "they use 'pseudo' to mean that the values represented are not really validated". For Lipietz "they still are not really validated but they are treated as if they were, until they come to be ... or not " (Lipietz, 1983, p. 04, footnote 15).

In Brunhoff's works, not only the social validation is not completed but also the determination of the value of money under an inconvertible system presents problems. The monetary power of the state is always limited by the need to establish the mutual equivalence and convertibility between different monies, in spite of the problems that may exist.

The social recognition (socialization) of money itself requires that the national currency be exchangeable into international money. Even the international currency, when it is also a national currency, has to go through a process of social recognition by being convertible into other currencies, in order to maintain its role as the general equivalent. If this does not happen the

international currency is at risk of general discredit. This also limits the monetary power of the state.

The process of social validation involves society as a whole, and is completed only when production, circulation, and distribution operate smoothly. Otherwise crises may emerge, expressing difficulties in the socialization of private labour^{xxii} and in the conciliation between what has been produced and what has circulated and been distributed as income. Crises show that although monetary dynamics is endogenously determined, it does not completely accommodate the needs of capital accumulation, because it has limits defined by the law of value and by the need to reproduce money as the general equivalent.

This view of the role of money and the imposition of the law of value presumes independence between individual labour processes and between production, circulation and distribution as a whole. There is, however, an objective content for crises, that limits this independence and forces the conciliation of production, circulation and distribution as stages of the same social process. This is why, for Lipietz,

“whatever changes occur in the law of value as a result of equalization (or non-equalization) of rates of profit, or because of the presence or absence of rent etc., these changes are limited: it is real commodities that are produced and exchanged, and the sum of their prices, which correspond to the revenue from their sale, can buy them and them alone” (Lipietz, 1985, p. 37)^{xxiii}

The development of this view, which de Vroey (1985) calls the abstract labour version of the labour theory of value, has led to the conception of a centralized monetary system (Brunhoff, 1971) where fiduciary money is the "socializing element of the operations affected by private economic elements" (p.120). Bank money "only becomes socialized itself by reason of the production and trade operations which it finances", but the different types of money must be mutually convertible. This convertibility is established through Central Bank money (Brunhoff, 1971, p.120). The convertibility between different types of money is nothing more than the permanent process of socialization of money itself, which guarantees its role as the general equivalent, agent of the socialization of private labours, and representative of social labour. This process coordinates capitalist society in a very intricate way. This analysis explores the character of money as a "social relation", regardless of whether or not it is a commodity which requires labour for its production, and demonstrates the contemporary validity of Marx's concept of money.

Marx's view that money is a social relation, and his perception of its origin being related to the commodity logic of capitalism, reveals why the logic of capitalist production requires that the monetary authorities should centralize monetary dynamics. This makes the monetary authorities themselves endogenous. This solves a problem in Minsky's approach: in his view, the monetary authorities are exogenous. In contrast, Marx's account of the genesis of money allows us to

understand the necessity of the state's monetary intervention as inherent to the logic of capitalism, and in this sense as something endogenous. It is also the endogenous character of the monetary authorities that allows us to analyse the social conflicts which are reflected as pressures on the monetary authorities, and understand the limits of their power.

Marx's analysis also allows us to realize that monetary relations are hierarchical, and shed light on the qualitative differences between the various types of money (which are strong points in Minsky's analysis). Being hierarchically superior, the monetary authorities have the power to intervene in the monetary dynamics. However, their endogenous character implies that they suffer pressures from the society as a whole, which limits their power to intervene. In his comments to the monetary controversies of the 19th century, Marx argues that intervention by the monetary authorities is a powerful tool on the one hand, and a limited one, on the other. First, he says that note circulation is independent of "the will of the Bank of England" (Marx, 1971, p. 525). On the other hand, after saying that the circulation of bills is independent from bank reserves, he argues that "this applies only under present conditions prevailing in England, and even here only in so far as legislation does not decree different relationship between the note issue and metal reserve" (Marx, 1971, p.525). Thus, he seems to admit that the state can intervene in the monetary dynamics, even though he denies that the state has absolute power to control circulation or even the quantity of the medium of exchange. Marx concludes that "only the requirements of business itself exert an influence on the quantity of circulating money"(Marx, 1971, p. 525), which strengthens the endogeneity argument further.

II.2 Money Endogeneity and Hoarding.

According to Kaldor, endogenous creation of money is only possible through the expansion of credit-based money, because this is the only case where an increase in demand causes an increase in supply. When money is commodity-money,

“the activities of the mining industry increase the world supply of money which is thus determined by factors that are largely independent of the public’s demand to hold money” (Kaldor, 1982, p. 69).

Then, for Kaldor, the Quantitative Theory of Money and the exogeneity of money supply that it implies are appropriate in a world of commodity-money, yet not in a world of credit-money.

It is curious that Marx has developed his critique of the quantity theory of money through an analysis of hoarding, precisely at the time when commodity-money prevailed. Marx states that hoarded money operates as a feeding channel of circulation, allowing the changing needs for cash to be continually met whatever the stage of the cycle. This is why, according to Marx, cash "never

overflows its banks" (Marx, 1970, p. 148). Foley (1986) claims that this reasoning clashes with the presumption of a stable velocity of money, so dear to the quantitativists. Marx's approach recognizes that money is endogenous even when it is a commodity. This is because dishoarding (because of an increase in money demand) corresponds to an increase in cash availability, in which case supply is not completely independent of demand. In addition to the development of the credit system, the problem of cash adaptation to business needs will be more and more closely linked to growth of bank credit (Foley, 1986) and to financial innovations, assuming a much wider scope.^{xxiv}

Kaldor's view that demand is not influential on the supply of commodity money stems from his failure to take hoarding properly into account. This is paradoxical, coming from a Post-Keynesian, since this function is the closest to Keynes's liquidity preference.

Keynes's articles written after the General Theory (Keynes, 1937a and 1937b) are very clear in this respect. When he introduces the finance motive, arguing that this is the demand for money to cover the interregnum between the decision to invest and actual investment, Keynes shows that money supply can be explained by the interaction between public and banks, and that changes in liquidity preference are highly influential. He claims that:

“...too great a press of uncompleted investment decisions is quite capable of exhausting the available finance, if the banking system is unwilling to increase the supply of money and the supply of existing holders is inelastic” (Keynes, 1937a, p. 248, emphasis added).

In order to clarify the relationship between finance, liquidity preference, and hoarding, Keynes states that

“If we mean by ‘hoarding’ the holding of idle balances, then my theory of the rate of interest might be expressed by saying that the rate of interest serves to equate the demand and supply of hoards - i.e., it must be sufficiently high to offset an increased propensity to hoard relatively to the supply of idle balances available” (Keynes, 1937a, p. 250).

It is for this reason that Keynes liked Herbert Bab's suggestion to

“regard the rate of interest as being determined by the interplay of the terms on which the public desires to become more or less liquid and those on which the banking system is ready to become more or less unliquid” (1937b, p. 219).

We can see that the notion of availability of liquidity depends on demand or on liquidity preference, making the former endogenous. Therefore, it is not true (as Kaldor claims) that under a commodity-money system

“the only way in which ‘new money’ can be absorbed is through a fall in its value in terms of other commodities which, by definition, equals the rise in the value of other commodities in terms of money” (Kaldor, 1982, p. 69).

Kaldor's difficulty to accept a demand for money on its own is to a certain extent common to all

horizontalists, who fail either to explore the qualitative differences between different types of money, or to consider the idea of liquidity preference by banks, as we have seen above.

The broader concept of endogeneity that we have proposed allows for a better understanding of endogeneity as deriving from the means of hoarding function, since it may clarify the reason for such function in capitalist economies. In addition to this, a broader concept of endogeneity can explain the endogenous supply of commodity money, since it derives from the logic of commodity-producing economies.

III. Summary and Conclusion: In Defense of an Agenda for Complementary Research.

Minsky's analysis is superior to the horizontalist on three counts: because it opens the possibility of analyzing the chronic instability of capitalism; because he recognizes the existence of a hierarchy of agents (Central Bank, banks and other private agents), and because it recognizes that different monies exist and must be mutually convertible in order to facilitate capital accumulation.

The importance of these issues to the functioning of a monetary economy is indicative of the analytical superiority of Minsky's work. However, his analysis is insufficient on two counts, and alternative lines of research based on Marx may help to improve it. The first insufficiency relates to the analytical weight of Keynesian uncertainty in explaining the instability of capitalism, and the second arises from Minsky's conception of exogenous monetary authorities.

Post-Keynesian writers argue that problems in the convertibility between financial and monetary assets (and the resulting instability and financial crisis) are due to the formation of expectations under uncertainty.^{xxv} Even though uncertainty may partially explain the behavior of agents in complex situations, an explanation based only on uncertainty is inadequate, because it leads to theoretical indeterminacy. It is well known that uncertainty derives from the unknown future and/or from decentralized decisions in capitalist economies. However, economists cannot base their theories on the unknown future, because this leaves only two alternatives: economists should either become prophets, or recognize that their theories are jeopardized by the impossibility of advancing hypotheses about the economic process.

The unknown future and the decentralization of decisions point to a fundamental problem related to the role of money, the need for coordination.^{xxvi} This is an impediment to the acceptance of new classical monetary thought, where this problem simply does not exist (and money is not important) because agents know, a priori, the correct economic model (which is always the monetarist), and the results of the model are path-independent.^{xxvii} This is why long-run adjustments are always realized regardless of coordination through money. The importance of Keynes' contribution was, on the one hand, his perception that in monetary production economies money

indirectly coordinates economic decisions and, on the other hand, his perception that time is historical, which makes coordination essential. Under historical time, whatever happens in the short-run affects the long-run; consequently, it becomes essential to analyze short-run adjustment processes. Keynes's awareness of the importance of money allows him to assess the problems arising from a generalized preference for money, which may block the smooth flow of goods.

When they deal with the problems of coordination Minsky and the Post- Keynesians rely exclusively on uncertainty resulting from the subjective action of agents faced with the unknown future. Although this is important it cannot be the only variable explaining economic behavior. Convention was the way used by Keynes to escape from the theoretical indeterminacy deriving from uncertainty, yet even conventions are not free from analytical problems because of the role of subjectivity in establishing or changing them. It is necessary to understand the operation of the economy in a way that, without ignoring historical time, allows us to escape from the theoretical indeterminacy that results from subjectivity and radical (Post-Keynesian) uncertainty.

Marx's materialist conception of history has been developed to analyse how productive forces and social relations of production are structured and coordinated, and to identify their laws of motion. These laws (eschewing determinism) allow us to deal with the future. This is the basis of our proposed research agenda. As has been pointed out, the concept of money as a social relation allows us to explain money's coordinating role in a capitalist economy, regardless of the existence of commodity money, and without its behaviour being based exclusively on uncertainty.

In this article, we have shown that Marx's monetary views involve a broader notion of endogeneity than the Post-Keynesian. This is because, on the one hand, Marx's analysis of hoarding and credit allows us to see endogeneity as being related to the availability of money and depending on internal pressures arising from the pace of business (as in Post-Keynesian analyses). On the other hand, Marx's analysis of the genesis and role of money defines a broader notion of endogeneity, based on the existence of money as something that develops as a result of forces endogenous to the logic of the economic system.

Marx's genetic method allows us to analytically derive the need for the intervention of the monetary authorities, which increases our understanding of their role and posits them as endogenous too. Apart from broadening the notion of money endogeneity, this has also justified the limits to state action in the monetary field. It is because money solves the private-social contradiction that it cannot be left at the mercy of private interests. Hence the need for a monetary role of the state, that is inherent to the logic of commodity economies such as capitalism. The state's action has a public character which makes it hierarchically superior to the actions of private agents, and which guarantees the power of the monetary authorities to intervene over monetary dynamics.

However, the public character of state action does not allow it to have complete control over monetary circulation, because it is a relation which involves the society as a whole and the state is merely part of society.

These observations show that the approach developed here captures hierarchical differences between agents and institutions, distinct qualities of money, as well as conflicts, instability and the possibility of crisis, which are some of the strongest points in Minsky's analysis. However, the treatment of money as a social relation in the abstract labour version goes beyond Minsky's analysis, because it also explains what inherently (endogenously) imposes the centralization of the monetary dynamics by the state, and opens up the possibility of discovering the logic of the state's actions. At the same time as explaining why the state has the power to intervene, we can also explain the limits to the monetary power of the state, which are related to the endogeneity of the monetary authorities. This solves the second insufficiency in Minsky's approach, his conception of the monetary authorities as exogenous, which brings him closer to the orthodoxy.

This second insufficiency in Minsky's thought arises from his conception of exogenous monetary authorities. The assumption of exogeneity is necessary to him because it justifies his conclusion that instability is inherent to capitalism. In his papers on financial fragility and instability, Minsky points out that the monetary authorities can abort financial crises. If, however, the monetary authorities are endogenous this would imply that something endogenous, inherent to the system, can counteract the crisis. In this case, the inherent character of the crisis (or of financial instability) would be lost.^{xxviii}

Minsky's belief in the exogeneity of the monetary authorities prevents him from explaining their existence, which is what enables a better understanding of their role and the limits of their power. It is, therefore, necessary to develop an analysis of endogeneity that includes the monetary authorities. This requires a broader concept of endogeneity than that dealing only with supply and demand. The analysis developed here on the basis of Marx's insights not only shows that the monetary authorities are endogenous, but also makes it possible to explain crises as being intrinsic to the logic of capitalism.

Finally, Marx's treatment of money avoids the demand and supply approach criticized above. Our approach is primarily concerned with hierarchical social relations which, in addition to strictly economic aspects, must also include socio-political variables. This highlights the importance of the qualitative analysis of processes, institutions and social procedures, rather than merely observing quantitative variables as in the supply and demand framework.

According to Brunhoff (1971) the Marxist conception of money radically changes the way we see the relationship between money and the economy, and it gives a new meaning to the notion of money supply. For her,

“the Marxist conception allows for such a change because it starts off from the analyses of a commodity-producing economy which is necessarily a monetary economy, and not from a real economy to which money is added. The initial problem is no longer that of supply, confronted by a demand, of a particular product, money, but that of the formation of money as a specific socio-economic relation, expressing the way in which a certain structure of exchanges goes with a certain kind of production” (p.3).

The supply and demand framework remains linked to quantitative analyses (volume of reserves, level of interest rates, etc), and loses the qualitative content of a hierarchical system permeated by social relations which is characteristic of a complex and interdependent monetary structure. These observations emphasize the conclusion that the broader concept of endogeneity proposed here has several analytical advantages. This vindicates Dow's (1988) argument that the word 'endogenous' means what is explained by a particular theory. A broader concept of endogeneity implies that we have greater explanatory power over a larger number of phenomena and, therefore, that we are progressing from an analytical point of view.

FOOTNOTES

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ⁱⁱ Besides being feasible, the control of the money supply is seen by orthodoxy as useful to achieve price stability. The convenience or not of such control, however, will not be discussed herein, since it is not so related to the issue of endogeneity as is the discussion of feasibility or not of monetary control.

ⁱⁱⁱ There are other forms of defining agreements about the meaning of endogeneity, as those put forward by Rousseas (1989, p. 474), to whom those accepting endogeneity establish a course of events going from income change to money demand and then to money supply (that is to say, what happens to supply is an effect and not the cause), varying, however, the degree to which they believe that money supply is a result of demand. Davidson discusses two concepts of endogeneity, the first related to money supply elasticity and the second to the interdependence between money supply and demand, showing that the concepts may lead to different conclusions. Therefore, in order to identify money supply as the cause (the orthodox position) it is necessary, for Davidson, to define it as a perfectly inelastic function and besides, to assure that the supply curve may shift independently from demand. On the other hand, for the supply to be identified as an effect (as assumed by heterodox advocates) it is sufficient for it not to be perfectly inelastic in relation to interest rates or to consider the changes in supply and demand to be interdependent (Davidson, 1988). What is important, however, to highlight is that the Post-Keynesian conception of endogenous money implies a residual and variable multiplier of the banking system (and not stable as the orthodox economists believe). Such variability is the result of a greater or lesser preference for liquidity by the public and/or the banks, which highlights the importance that money can have in these analysis, upon being desired by itself, instead of merely serving to buy goods. For further details about endogeneity see the theoretical and applied arguments of Davidson, 1989; Dow, 1996; Fand, 1988; Meulendyke, 1988; Moore, 1991 and Palley, 1991.

^{iv} This paper deals with the capitalist economy as a whole, avoiding considerations about national or international, closed or open, when we talk about the endogeneity of money supply.

^v For Kaldor (1982, p. 24) “at any time, or at all times, the money stock will be determined by demand and the rate of interest determined by the central bank”.

^{vi} For Moore, banks operate as price-takers on the wholesale market where they seek deposits and try to balance the excess

or scarcity of money. When lending they operate on the retail market as price-makers applying mark-up over the wholesale market interest rates. (See B. Moore, 1989b and R. Bezerra, 1994).

^{vii} This matter was analysed by several authors among them Dow, 1996. The idea of uncertainty which is different from traditional probability theory which deals with risk, is emphasised by Keynes as a central difference between his own economic view and that of the “classical” school, because it is uncertainty that explains liquidity preference. According to Keynes, “by uncertain knowledge, let me explain, I do not mean merely to distinguish what is known for certain from what is only probable... The sense in which I am using the term is that in which prospect of a European war is uncertain, or the price of copper and the rate of interest twenty years hence, or the obsolescence of a new invention, or the position of private wealth-owners in the social system in 1970. About this matters there is no scientific basis on which to form any calculable probability whatever. We simply not know” (Keynes, 1937c, p. 213-214).

^{viii} This argument differs from Carvalho’s (Carvalho, 1993, p. 120), for whom “given the speculative nature of capitalistic production, a perfectly accommodative banking system would represent a factor of instability rather than otherwise”. Although we agree that “money value erosion” may result from it, and be a source of instability, Minsky explores another important Post-Keynesian aspect of such instability, in the rupture of financing conditions that check investment.

^{ix} Lavoie (1992) himself agrees that this effect of financial innovation hinges on liquidity preference, especially when he refers to “the portfolio substitution effect and the interest elasticity effect on business expenditures” (p. 183). He argues that these are the only “operative factors” of changes in money supply by the Central Bank.

^x See the references to Davidson (1988) in our footnote 3.

^{xi} For a more detailed analysis see Brunhoff (1974 and 1979) and Mollo (1989 and 1991).

^{xii} See section II.2 for a comparison between Marx’s and Kaldor’s views of commodity money, that articulates the notions of endogeneity and hoarding.

^{xiii} See Arnon (1984a). It is surprising that, according to Arnon, in the *Contribution* Marx follows Tooke in arguing that there is a difference between hoards and “reserve funds of coin, which form a constituent element of the total amount of money always in circulation” (Marx, 1970, p. 137). In spite of this, he begins his exposition on hoarding in *Capital* dealing with money as an element demanded in order to face continuous purchases, without any mention to this difference.

^{xiv} For a discussion about some ideas of the debate Currency School x Banking School, see Mollo, 1994.

^{xv} Lapavitsas (1994) analyses the similarity between the positions of Marx, Tooke, and Steuart on the “law of reflux” and the different forms of money.

^{xvi} I am particularly grateful for the comments of S. de Brunhoff on this issue.

^{xvii} Although I am insisting here on the importance of money for the solution of the private-social contradiction, it should be noted that this process implies, at the same time, the abstraction of concrete labor, which is also carried out by money. For further details, see Mollo (1991).

^{xviii} For an analysis of the peculiarities of money in Marx and its relationship with crises, see D. Lavoie, 1983.

^{xix} This conclusion is in sharp contrast with the arguments of Hayek and the Free Banking School.

^{xx} See Guttman (1994).

^{xxi} On this, see Brunhoff (1974, 1979 and 1982), Lipietz (1983) and Mollo (1990).

^{xxii} See Mollo (1989).

^{xxiii} For an analysis of the possibility of crises related to money, see P. Kenway (1983) and D. Lavoie (1983).

^{xxiv} Desai, when dealing with money endogeneity, stresses that James Steuart was one of the authors who analysed dishoarding as a channel for changes in money supply (Desai, 1989, p. 148).

^{xxv} See, for example, Aglietta (1986, 1987), and Minsky (1977, 1980, 1982).

^{xxvi} According to Carvalho (1993, p. 118), in monetary economies “parallel to the ex post coordination of activities performed by the market, the importance of ex ante coordination stands out, arising from the creation of a system of future contracts determined in money”.

^{xxvii} Keynes analysis of classical school can be used to observe the newclassical perspective on the way that agents apprehend the economic model. For him “this does not mean that they were dealing with a system in which change was ruled out, or even one in which the disappointment of expectation was ruled out. But at any given time facts and expectations were assumed to be given in a definite and calculable form; and risks, of which, tho admitted, not much notice was taken, were supposed to be capable of an exact actuarial computation. The calculus of probability, tho mention of it was kept in the background, was supposed to be capable of reducing uncertainty to the same calculable status as that of certainty itself...” (Keynes, 1937c, p.212-213).

^{xxviii} See Mollo, 1988.

REFERENCES

- AGLIETTA, M. – **La Fin des Devises Clés: essais sur la monnaie internationale**, La Découverte, Paris, 1986.
 “Des principes keynésiens pour organiser un pôle monétaire européen”, in Zerbatto et alli., **Keynesianisme et Sortie de Crise**, Dunod, Paris, 1987.

-
- AGLIETTA, M. E ORLEAN, A. - **La Violence de la Monnaie**, PUF, Paris, 1984.
- ARON, A. - "Marx's theory of money: the formative years", in **History of Political Economy**, vol. 16, n. 4, winter 1984 .
- ARTHUR, C. - "Engels, Logic and History", in R. Bellofiori (ed.), **Marxian Economics – A Reappraisal**, Macmillan and St. Martin's Press, London/New York, 1998.
- BELLOFIORE, R. (ed.) - "Introduction" of **Marxian Economics – A Reappraisal**, Macmillan and St. Martin's Press, London/New York, 1998.
- .BRUNHOFF, S. - **L'Offre de Monnaie - critique d'un concept**, Maspero, Paris, 1971.
- _____ **La Politique Monétaire: un essai d'interprétation marxiste**, (with P. Bruini's collaboration), PUF, Paris, 1974.
- _____ **Les Rapports d'Argent**, Maspero, Paris, 1979.
- _____ **Etat et Capital**, Maspero, Paris, 1982.
- _____ "Money, Interest and Finance in Marx's *Capital*", in **Marxian Economics – A Reappraisal**, edited by Riccardo Bellofiori, Macmillan and St. Martin's Press, London/New York, 1998.
- BEZERRA, R. - "A Teoria Pós-Keynesiana da Firma Bancária", **Archè**, ano III, n. 7, 1994.
- CARVALHO, F.C. - "Sobre a endogenia da oferta de moeda: réplica ao professor Nogueira da Costa", in **Revista de Economia Política**, vol. 13, n. 3(51), julho-setembro/1993.
- DAVIDSON, P. - "Endogenous Money, the Production Process and Inflation Analysis", in **Economie Appliquée**, n.1,1988.
- _____ "On Endogeneity of Money Once More", in **Journal of Post Keynesian Economics**, spring, 11(3), 1989.
- DESAI, M. - "Endogenous and Exogenous Money", in **Money** The New Palgrave, The Macmillan Press Ltd., London, 1989.
- DE VROEY, M. - "La théorie marxiste de la valeur, version travail abstrait - Un bilan critique", em Dostaler et Lagueux (Ed.) **Un échiquier centenaire - Théorie de la Valeur et Formation des Prix**, La Decouverte/ Presses Univ. du Quebec, Paris/Quebec, 1985.
- DOW, S. - "Money Supply Endogeneity", in **Economie Appliquée**, Tome XLI,n.1, 1988.
- _____ "Horizontalism: a Critique", in **Cambridge Journal of Economics**, n. 20, 1996.
- FAND, D. - "On Endogenous Money Supply" in **Journal of Post Keynesian Economics**, vol.X, n.3, spring/1988.
- FOLEY, D. - **Understanding Capital - Marx's Economic Theory**, Harvard University Press, Cambridge, Massachusetts e London, 1986.
- GUTTMANN, R. - **How Credit Money Shapes the Economy**, M. E. Sharpe, New York, 1994.
- KALDOR, N. - **The Scourge of Monetarism**, Oxford University Press, New York,1982.
- KENWAY, P. - "Marx, Keynes and the possibility of crisis", in Eatwell & Milgate (ed.), **Keynes's Economics and the Theory of Value and Distribution**, G. Duckworth, London, 1983.
- KEYNES, J.M. - "Alternative Theories of the Rate of Interest" in **The Economic Journal**, june, 1937a.
- _____ "The Ex-Ante Theory of the Rate of Interest", in **The Collected Writings of John Maynard Keynes**, vol.XIV, p. 215, Macmillan, Cambridge, 1937b.
- _____ "The General Theory of Employment", in **The Quarterly Journal of Economics**, february, 1937c.
- LAPAVITSAS, C. - "The Banking School and the monetary thought of Karl Marx", in **Cambridge Journal of Economics**, vol.18, p. 447-461.
- LAVOIE, D. - "Some strengths in Marx's disequilibrium theory of money", in **Cambridge Journal of Economics**, v. 7 n. 1, march 1983.
- LAVOIE, M. - **Foundations of Post-Keynesian Economic Analysis**, Edward Elgar, England,1992.

-
- LEVINE, D. – “The Structure of Marx’s Argument in *Capital*”, in Bellofiore, R. (ed.) **Marxian Economics – A Reappraisal**, Macmillan and St. Martin’s Press, London/New York, 1998.
- LIPIETZ, A. – **The Enchanted World – Inflation, Credit and World Crisis**, Verso, London, 1985.
- MARX, K. - **Capital**, Lawrence & Wishart, London, Vol. I - 1974, Vol. III - 1971.
 _____ **Théories sur la Plus Value**, Editions Sociales, Paris, 1975.
- MEULENDYKE, A.M. - "Can the Federal Reserve influence whether the money supply is endogenous? A comment on Moore", in **Journal of Post Keynesian Economics**, vol.X, n.3, spring/1988.
- MINSKY, H. - “Central Bank and Money Market Changes”, in the **Quarterly Journal of Economics**, vol. LXXI, may, 1957, n. 2.
 _____ "A Theory of Systematic Fragility", in Altman and Sametz (eds) **Financial Crises**, John Wiley and Sons, 1977.
 _____ "Capitalist Financial Process and the Instability of Capitalism", in **Journal of Economic Issues**, june, 1980.
 _____ "The Financial Instability Hypothesis: capitalist process and the behavior of the economy", in Kindleberger and Laffargue (eds.), **Financial Crises**, Cambridge, 1982a.
 _____ "The Financial Instability Hypothesis: an interpretation of Keynes and an Alternative to Standard Theory", in **Inflation, Recession and Economic Policy**, Wheatsheaf Books Ltd., Great Britain, 1982b.
 _____ “The Essential Characteristics of Post Keynesian Economics”, in G. Deleplace and E. Nell (ed.), **Money in Motion**, Macmillan Press, London, 1996.
- MOLLO, M.L.R.- "Instabilidade do Capitalismo, Incerteza e Papel das Autoridades Monetárias: uma leitura de Minsky" in **Revista de Economia Política**, vol.8, n.1, jan-mar/1988.
 _____ "Monnaie, Valeur et Capital Fictif", **Ph.D. Thesis**, Université de Paris X, Nanterre, 1989.
 _____ "Estado e Economia: o papel monetário do Estado", in **Estudos Econômicos**, vol.20, n.1, jan-abr/1990.
 _____ "A relação entre moeda e valor em Marx", in **Revista de Economia Política**, vol.11,n.2 abr-jun/1991.
 _____ "As Controvérsias Monetárias do Século XIX: traços ortodoxos e heterodoxos", em **Ensaio FEE**, Porto Alegre, v. 20, Ano 01, 1994.
- MOORE, B. - "The Endogenous Money Supply", in **Journal of Post Keynesian Economics**, vol.X, n.3, spring/1988.
 _____ "On Endogeneity of Money Once More", in **Journal of Post Keynesian Economics**, 11(3), spring/1989 a.
 _____ "A Simple Model of Bank Intermediation", in **Journal of Post Keynesian Economics**, autumn/1989 b.
 _____ "Money Supply Endogeneity: ‘reserve price setting’ or ‘reserve quantity setting’?", in **Journal of Post Keynesian Economics**, vol.13, n. 3, spring/1991.
- PALLEY, T.I. - "The endogenous money supply: consensus and disagreement", in **Journal of Post Keynesian Economics**, vol.13, n.3, spring/1991.
- POLLIN, R. - "Two Theories of Money Supply Endogeneity: some empirical evidence", in **Journal of Post Keynesian Economics**, vol.13 , n. 3, spring/1991.
- ROUSSEAS, S. - "On Endogeneity of Money Once More", in **Journal of Post Keynesian Economics**, 11(3), spring/1989.
- RUBIN, I. - "Abstract Labour and Value in Marx's System", em **Capital and Class**, summer /1978.