Keynes and the Endogeneity of Money[1]

Fernando J. Cardim de Carvalho[2]

1. Introduction

Many strands of Keynesian macroeconomics agree that money supply is endogenous in some sense. More particularly, practically all *Post Keynesian* varieties of macroeconomic theory explicitly reject the so-called *verticalist* assumption that central banks can fully determine the money supply.

Agreement, however, often stops at that. The best known variety of endogenous money assumption in Post Keynesian economics is the one identified as the *horizontalist* view, according to which the money supply curve is horizontal in the money quantity/interest rate space because suppliers of money always *fully* accommodate the demand for money at a given interest rate. It is, of course, intended to be a stylization of how money creation really works, but many Post Keynesians take it as an actual description, close enough to the reality of modern economies, which "horizontalists" identify as *credit-money economies*.

It was Kaldor, not Keynes, who provided the inspiration for the emergence of the horizontalist hypothesis. In fact, Kaldor presented the hypothesis *against* Keynes's views on the matter, arguing that the latter was never able to escape his "classical" training in this field. Kaldor argued that the whole liquidity preference theory was, at best, a "red herring", giving an undue relevance to the concept of money supply.

It is well known that Keynes, in *The General Theory of Employment, Interest and Money*, (GT) explicitly assumed that the money supply was fully controlled by the central bank. It can therefore be reasonably argued that Keynes's view in the GT can be best characterized as verticalist, not far from Milton Friedman's. Keynesians, however, often seek solace in Keynes's previous book, *A Treatise on Money*, to defend the thesis that the GT approach did not convey Keynes's actual views on this point. In the *Treatise*, one can find much richer and more concrete conceptions of how money is created through the interaction of banks and central banks in different monetary regimes.

The *Treatise*, however, is as far from a horizontalist view as the GT. In fact, the *Treatise* does embrace an endogeneity-of-money perspective relying however on very different reasons, and with very diverse implications, than those proposed in the horizontalist literature. It is reasonable to assume that Keynes didn't abandon the Treatise's arguments on this matter when writing the GT. In fact, he stressed, in the preface to the GT, the continuity between the two books. In his words:

"The relation between this book and my Treatise on Money, which I published five years ago, is probably clear to myself than it will be for others; … my lack of emancipation from

---

[11] October of 2012 draft. To be presented at the 16th Conference of the Research Network Macroeconomics and Macroeconomic Policies (FMM) on The State of Economics after the Crisis, Berlin, 25-27 October, 2012.

[2] Institute of Economics, Federal University of Rio de Janeiro. The author thanks the National Research Council of Brazil (CNPq) for financial support.

preconceived ideas showed itself in what now seems to me to be the outstanding fault of the theoretical parts of that work (namely, Books III and IV), that I failed to deal thoroughly with the effects of *changes* in the level of output. … This book, on the other hand, has evolved into what is primarily a study of the forces which determine changes in the scale of output and employment as a whole; and, whilst it is found that money enters into the economic scheme in an essential and peculiar manner, *technical monetary detail falls into the background*." (Keynes, 2007, pp. xv/xvii, my emphases)

The whole analysis of monetary regimes and the role of banks and central banks in the creation of money were apparently among the "technical monetary detail" that didn't find room in the GT.

In this paper we explore the question whether the consideration of banks and central banks offered in the *Treatise* would change the "exogenist" approach to money characteristic of the GT. We begin by recuperating how the money supply appears in the GT and going backwards in time to see how the importation of the Treatise's ideas about banks and central banks would fit in the GT approach, in section 2. Section 3 is dedicated to the severe criticisms raised by Kaldor against Keynes, from which the horizontalist approach was born. A key issue opposing Keynes to Kaldor is the concept and role of liquidity, so section 4 confronts both authors on this theme. Section 5 concludes.

2. From *The General Theory* to *A Treatise on Money*

The continuity Keynes alleged to link the *Treatise* to the GT may not be obvious to readers, at least with respect to the determination of the money supply. Banks are absent from the core model of the GT, where Keynes argues entirely in terms of central banks' choices. Given the enormous importance the behavior of banks had always assumed in his writings previous to the GT, one cannot avoid the surprise, when reading the book for the first time, to realize that every time the quantity of money is referred to, only the central bank is actually identified as its creator. In fact, not even the central bank's behavior is actually analyzed. The central bank's choice of a given quantity of money to supply seems to be entirely left to its own discretion. One can easily understand why so many among Keynes's readers look to the *Treatise* hoping to find a more flexible treatment of the issue there.

As we will see below, the way Keynes describes the behavior of central banks in the GT may very well be a simplification but it is not essentially different from the way he described it in the *Treatise*. Before moving on, to understand Keynes's stand on this matter, it is necessary to establish two preliminary points. First, the protection afforded by holding money against the uncertainty that surrounds the future. Second, the role of commercial banks in the creation and allocation of money throughout the economy.

Probably not much need to be said at this point about the relation between money and uncertainty, a subject that has been exhaustively explored in the Post Keynesian literature.[3] In a nutshell, Keynes argued that holding money constituted a powerful hedge against future events that are impossible to predict properly. When one cannot even imagine what kind of

[3] Just to pick up one well-known example of the literature, see Davidson (1978).

adversity may hit in the future, it becomes impossible to devise specific hedge strategies. In this case, money becomes "a barometer of our distrust of our own calculations and conventions concerning the future … The possession of actual money lulls our disquietude; and the premium which we require to make us part with money is the measure of the degree of our disquietude". (CWJMK, XIV, p. 116)

Money is an efficient hedge instrument because it is the most liquid of assets. As the unit of account for contracts, the value of money as a debt settlement vehicle is fixed.[4] As legal tender, it is convertible at any other good or service, on demand.[5]

But an asset being liquid means that the holder of that particular class of assets *expects* to be able to dispose them quickly, without significant loss, if it is so desired. This means that holding this type of assets should allow the holder to redo her investment strategy without too much loss of time and capital value at any time. When this power of disposal is reckoned, the asset is supposed to pay "gross returns" that include a *non-monetary* yield, in the form of insurance against unexpected adverse future events, along with monetary returns (such as interest, dividends, capital gains, etc).[6]

Liquidity in the sense just described depends of course not only on the access to secondary markets for the relevant types of assets but also on an additional requirement: that the asset in question be relatively *scarce*, that is, that future demand for the item can be reasonably *expected* to be equal or higher than future supply, so that if and when the asset-holder decides to sell she may expect that it will not cause a significant loss of value of the asset, that is, that the offer to sell will create a downward pressure on its market price. To guarantee that in an entrepreneurial economy money should not lose its liquidity attributes, Keynes famously postulated three "peculiarities which commonly characterize money as we know it". (Keynes, 2007, pp. 229/230) The peculiarities are that money elasticities of production and substitution should be very small and that, although the *real* supply of money could still be varied, within a given interval, by changes in money prices of goods and services, money would still maintain its liquidity attribute in the eyes of the public, given its null or negligible carrying costs.

The term "peculiarities" to classify these properties might suggest that they constitute only a minor qualification to Keynes's argument. However, a few pages later, Keynes clarified the importance of the specification of low values for those two elasticities:

---

[4] "… the fact that contracts are fixed, and wages are usually somewhat stable, in terms of money unquestionably plays a large part in attracting to money so high a liquidity-premium. The convenience of holding assets in the same standard as that in which future liabilities may fall due and in a standard in terms of which the future cost of living is expected to be relatively stable is obvious." (Keynes, 2007, pp. 236/7)

[5] Under the extreme conditions of high and hyperinflation, money can actually lose this convertibility attribute. About high inflation regimes and hyperinflations, see Cardim de Carvalho (1992), chapter 11.

[6] "… the power of disposal over an asset during a period may offer a potential convenience or security, which is not equal for assets of different kinds, though the assets themselves are of equal initial value. … The amount … which [people] are willing to pay for the potential convenience or security given by this power of disposal (exclusive of yield or carrying cost attaching to the asset), we shall call its liquidity premium l." (Keynes, 2007, p. 226)

“The attribute of ‘liquidity’ is by no means independent of the presence of these two characteristics. For it is unlikely that an asset, of which the supply can be easily increased or the desire for which can be easily diverted by a change in relative price, will possess the attribute of ‘liquidity’ in the minds of owners of wealth. Money itself rapidly loses the attribute of ‘liquidity’ if its future supply is expected to undergo sharp changes.” (idem, p. 241, fn1)

Keynes proposed the existence of a non-linear relation between the quantity of money and its liquidity attribute. Up to a certain level, an increase in the quantity of money should not threaten money’s liquidity due to a complex pattern of feedback effects. As long as the public believes in the future stability of money’s purchasing power, forward contracts, including wage contracts, will continue to be denominated in money. For this reason, the expectation of price stability that sustain the liquidity of money will not be disappointed. Since the carrying costs of money are negligible:

“The readiness of the public to increase their stock of money in response to a comparatively small stimulus is due to the advantages of liquidity (real or supposed) having no offset to contend with in the shape of carrying costs mounting steeply with the lapse of time.” (id., p. 233)

In other words, as long as the public believes in the future stability of prices, the contract system will help to strengthen this belief and the liquidity premium of holding much will remain much higher than its carrying cost, so that the public will hold additional amounts of money in their portfolios. If trust in the future stability of prices is lost, however, the system of contracts will break down, and money will lose its liquidity attribute, as it happens under hyperinflations. Money’s null or negligible elasticities of production and substitution are meant this scenario from emerging.[7]

These statements are very clear to establish that while the money supply curve may have been proposed to be “vertical” in the GT just as a simplification of “technical monetary details”, in no way it could be assumed to be horizontal without violating a property of money that turns out to be “essential” in so far as the liquidity attribute of money, and its implications for Keynes’s theory of effective demand, depends on its observance. In other words, if one can find in Keynes’s writings an alternative to the assumption that the central bank fully controls the supply of money, it will certainly *not* be the idea that money supply is fully determined by money demand. That money has to be kept rare is an essential theoretical point, not merely a simplifying assumption, in Keynes’s argument.

For the second preliminary, one has to move beyond the GT, both backward and forward in time. The operation of modern monetary systems was a lifelong interest of Keynes’s. Two subjects in particular attracted his attention: monetary regimes and banking. Keynes’s most

[7] “I conclude, therefore, that the commodity in terms of which wages are expected to be most sticky, cannot be one whose elasticity of production is not least, and for which the excess of carrying costs over liquidity premium is not least.” (Keynes, 2007, p. 238)

sophisticated reflections on both subjects are presented in some chapters of volume 1 of the *Treatise* (chapters 1 to 3) and in most of volume 2 of the same work (books 5 and 7).[8]

In the *Treatise*, the process of money creation is examined within the rules that are set by the *monetary regime* a country elects to adopt. In essence, a monetary regime defines what is money[9], and how, by whom and under what circumstances and conditions it may be created.

The class of monetary regimes Keynes considered most closely was that of *managed money* regimes. In these regimes, money is managed in order to maintain its value in terms of some defined standard, which could be a commodity (as in gold exchange standards), a labor unit, or a basket of commodities. Money creation in those regimes is the result of the interaction between the central bank, which creates the monetary base, and of the banking system, which creates the demand deposits that constitute the largest component of the stock of means of payment of a modern economy.

On the role and power of the central bank, Keynes in the Treatise is no different from Keynes in the GT. In the GT, Keynes seemed to have taken the power of the central bank to control the quantity of money as somewhat self-evident. For instance, in chapter 18 of the GT, when summarizing the "model" he presented in the preceding chapters, he included among the givens "the quantity of money as determined by the action of the central bank". (Keynes, 2007, p. 247)

In the *Treatise*, Keynes stated that:

"The first necessity of a central bank, charged with responsibility for the management of the monetary system as a whole, is to make sure that it has an unchallengeable control over the total volume of bank money created by its member banks." (CWJMK VI, p. 201)

Some critics could perhaps rush to the conclusion that since Keynes was writing the *Treatise* when Great Britain was still under the gold standard, he was pointing to conditions pertaining to commodity money regimes. This conclusion would be wrong, however. Keynes considered the gold-*exchange* standard[10] a managed money regime, where preserving the value of gold in terms of the domestic currency still gave some latitude to the central bank to manage the quantity of money. In particular, Keynes rejected the idea that the relevant opposition was defined between commodity money and credit money, as it became almost standard usage after Kaldor proposed it. Banks and the creation of deposits as a byproduct of credit creation were fully incorporated in the *Treatise* model.

---

[8] The basic principles of Keynes's theory of banking would be a central element of his ICU/Bancor plan to create an international monetary system after World War II.

[9] Or, more precisely, what constitutes *state* money. Money may be a commodity, such as gold or silver, or be *representative* money, such as *fiat* money or *managed* money, as in contemporary monetary systems.

[10] In the gold exchange standard, in contrast with the gold standard, a representative of gold, paper money issued by the Bank of England, circulates in its place. Of course, the need to maintain convertibility imposed limits on the ability of the Bank to issue paper money, but those limits could be made more or less elastic if necessary.

A related argument that became very important in the horizontalist literature was minimized by Keynes. As will be seen in the next section, Kaldor gave much importance to the fact that central banks do not set the quantity of money or of bank reserves directly as a target. Rather, they operate by setting interest rate targets. The point is considered essential to sustain the thesis that since central banks usually set the level of a particular rate of interest, *therefore* they have no alternative but to freely supply all reserves banks may demand at that rate.

When Keynes affirmed, however, that central banks can control the quantity of money (or, more precisely, the quantity of reserves supplied to banks) he explained that central banks control it precisely through the choice of a value for the bank rate, that is, the cost of reserves. In other words, Keynes knew that central banks set an interest rate instead of directly imposing quantity limits, but he considered this to be a minor point, merely a question of *operational procedures*. What was clearly more important to him was that the use of interest rate targets didn't imply a reduction of central banks' power to control reserves (and, ultimately, bank money). On the one hand, the central bank could set higher or lower bank rates according to whether it desired to decrease or increase the volume of reserves supplied to banks. Moreover, and even more importantly, even if the central bank was forced for some reason to stick to a given bank rate, it could still compensate its actions through its overall asset purchase policy. As Keynes explained:

"Thus, broadly speaking, the central bank will be able to control the volume of cash and of bank money in circulation, if it can control the volume of its total assets. … Thus, the power of a central bank, to manage a representative money in such a way as to conform to an objective standard, primarily depends on its ability to determine by means of a deliberate policy the aggregate amount of its own assets …" (CWJMK VI, p. 201)

In contrast to what Kaldor would argue later, a central bank is not bound to only buy assets that banks present it to sell, even if there are in effect some groups of assets that, by costume or legal obligation, the central bank cannot refuse:

"What are those assets? A triple classification of a central bank's variable assets (i.e. assets other than bank premises, etc) will be convenient, namely: (1) gold, (2) investments and (3) advances. By 'gold' I mean anything which the central bank cannot create itself, but from or (and) into which it is bound by law to convert its legal-tender money. By 'investments' I mean any asset, other than gold, which the central bank purchases on its own initiative; that it may include bills purchased in the open market. By 'advances' I mean any asset, other than gold, which the central bank has purchased in virtue of an obligation, of law or custom, to purchase which the central bank is bound or is accustomed to make such advances." (CWJMK VI, p. 202)

In other words, what Keynes is proposing is that even if the central bank is bound to make one type or another of accommodating asset purchase, it can still compensate its impact through 'investment' operations, with the opposite sign and effect. There is no evidence that Keynes ever abandoned his belief that central banks were not impotent prisoners of banks' demands.

But the *Treatise* does not just develop in more detail similar views to those Keynes would repeat in the GT. In the *Treatise* we find something else, that was left entirely out of the GT,

which is a detailed analysis of how banks operate and make their balance sheet decisions and *how they create money in the process*.

Banks, in fact, had long been among Keynes's major interests. Most of the approaches to the process of money creation, then as now, considered banks to be a sort of rather passive transmission line between the central bank and the general public who demands deposits and loans. Keynes, in contrast, considered the behavior of banks the key to understand not only how money was created but how monetary variables actually had an impact on the "real" side of the economy.

In the *Treatise*, banks are explicitly characterized as decision-making entities that, like other private firms, try to maximize returns to their activities while exposing themselves to a minimum of risks. As such, they don't react mechanically either to changes in their reserves initiated by the central bank or to changes in the demand for loans coming from firms or private consumers. Their actions depend on how they balance their simultaneous desire for profitability and liquidity.

Under *normal* conditions, banks would use up all of its free reserves buying assets. Keeping idle reserves would not appeal to banks since there were available some classes of highly liquid assets that would still offer some interest revenue, in contrast with cash reserves that yield nothing. According to Keynes, banks had to deal with the return/liquidity dilemma the same way as other private agents, that is, by combining assets with different attributes in terms of cash returns and liquidity premia. Why would banks be concerned with the liquidity of their assets if they can create money? Because payments to other banks, to the central bank and, under some conditions, to clients seeking to cash their deposits cannot be made with the banks' IOUs.

In a similar way to his treatment of central banks Keynes proposed that:

" … what bankers are ordinarily deciding is, not *how much* they will lend in the aggregate – this is mainly settled for them by the state of their reserves – but in *what forms* they will lend – in what proportions they will divide their resources between the different kinds of investment which are open to them. Broadly, there are three categories to choose from – (i) bills of exchange and call loans to the money market, (ii) investments, (iii) advances to customers. As a rule, advances to customers are more profitable than investments, and investments are more profitable than bills and call loans; but this order is not invariable. On the other hand, bills and call loans are more 'liquid' than investments, i.e. more certainly realizable at short notice without loss, and investments are more 'liquid' than advances. Accordingly bankers are faced with a never-ceasing problem of weighing one thing against another …" (CWJMK VI, p. 59, Keynes's emphases)

Banks, in fact, according to Keynes do not just discriminate among the types of assets they buy by charging different rates of interest, they actually ration credit:

"So far, however, as bank loans are concerned, lending does not – in Great Britain at least – take place according to the principles of a perfect market. There is apt to be an unsatisfied fringe of borrowers, the size of which can be expanded or contracted, so that banks can

influence the volume of investment by expanding or contracting the volume of their loans, without there being necessarily any change in the level of bank rate, in the demand schedule of borrowers, or in the volume of lending otherwise than through the banks. This phenomenon is capable, when it exists, of having great practical importance." (CWJMK, V, p. 190)

When banks buy assets (including non-financial firms' debts) they create deposits and therefore increase the supply of money.[11] However, in the *Treatise*, Keynes argued that even more important than the amount of money that is thus created is *where they are directed to*. Keynes considered the traditional approach to money circulation as if it was a unified process a mistake. In his view, one should distinguish between *two* money circuits in the economy, which he called industrial circulation and financial circulation. Industrial circulation referred to money (deposits) used to move goods and services, while financial circulation moved financial assets.[12] The quantity theory of money recognized only the first circuit, ignoring financial circulation. As a result, quantity theorists failed to understand the connection between money and financial markets and the fact, central to Keynes's approach, that in financial circulation money is not only a means of moving assets but it is also an end in itself, an asset to be held in individual portfolios. According to Keynes, to a large extent quantity theorists' expectation that the velocity of circulation of money was stable was often falsified precisely because aggregate velocities is nothing but the average between two velocities, defining each of the two circulations.[13]

Even though Keynes conceded that money is fungible and may migrate from one circulation to the other, he considered that the two circuits were somewhat self-contained in the sense that the fraction of the total money stock that was dedicated to making payments in assets markets tended to remain in those markets, the same happening to the remaining fraction of the money stock in industrial circulation. If some migration did happen, inflationary or deflationary pressures would result, depending on whether money was leaving financial for industrial circulation or the opposite.[14] It was not the quantity of money per se that mattered but what kind of transactions it was supporting.

---

[11] As Keynes's Cambridge students during the Michaelmas Term of 1932 noted in their notebooks, Keynes emphasized that "Money is created when banks buy debts. Money is destroyed when banks get rid of debt, by selling it or having it discharged." (Rymes, 1989, p. 67). A very interesting exchange on this particular point involved Keynes, Reginald McKenna and Lord MacMillan in the February 21, 1930 session of the MacMillan Committee, where McKenna made very forcefully the point that banks created deposits when they made loans, instead of depending on depositors to finance them, receiving Keynes's full support. (CWJMK, XX, pp. 87/90)

[12] "By *industry* we mean the business of maintaining the normal process of current output, distribution and exchange and paying the factors of production their incomes for the various duties which they perform from the first beginning of production to the final satisfaction of the consumer. By *finance*, on the other hand, we mean the business of holding and exchanging existing titles to wealth (other than exchanges resulting from the specialization of industry), including stock exchange and money market transactions, speculation and the process of conveying current savings and profits into the hands of entrepreneurs." (CWJMK, V, p. 217)

[13] Keynes does develop the argument about velocities of circulation. See CWJMK, VI, chapter 24.

[14] The terms "inflationary" and "deflationary" had somewhat different meanings at the time than they have today. Basically, they referred to movements either of money supply or of money income. Inflating money supply meant increasing the amount of money in circulation which should lead or at least to be

In this picture, banks would generate inflationary pressures when it increased advances to customers, for instance, and deflationary pressures if they bought bills and call loans or investments. How banks would determine the share of each class of assets in their balance sheet depended on their profit expectations and their liquidity preference.

Under more exceptional conditions, when uncertainty rose to extraordinary heights, banks could even prefer to accumulate reserves, if they considered that even call loans and other very short-term private assets could represent more risk than they were willing to accept. Such a situation actually happened, according to Keynes, when World War I began, and perhaps again, in the United States, in the 1930s.[15]

In sum, if one takes into consideration Keynes's other works besides the GT one can actually find a theory of money endogeneity. However, this theory of money endogeneity exhibited three peculiar characteristics: (i) it has very little to do with central banks, being focused on banks' liquidity preferences; (ii) it does not imply that interest rates are either more or less controllable than the quantity of money; and (iii) the impact of bank money creation on the economy has seldom to do with total quantities but, rather, with to which monetary circulation newly-created deposits are directed.

The argument developed so far suggests that a positive-sloping, neither vertical nor horizontal, money supply curve should best describe the behavior of money supply conceived by Keynes. Higher interest rates would induce banks to buy less liquid assets, which meant switching finance from financial circulation to industrial circulation. In this approach, total money supply might or might not change but its different allocation between the two circulations should have a large impact on output and employment.[16]

3. Kaldor's Critique of Keynes and the Creation of Horizontalism

Keynes's monetary theory was subjected to heavy 'friendly fire" coming from Kaldor. The criticism was not directed at specific points of the theory as much as at Keynes's monetary theory itself. Kaldor argued that *money* was not in fact a relevant concept since it was virtually impossible to set boundaries separating objects endowed with "moneyness" from those without the attribute, much less identifying any stable relationship between the quantity of money, however defined, and spending categories (Kaldor, 1973a, p. 209)[17]. Keynes's

---

correlated to expanding nominal income. It was only after World War II that the use of the terms inflation and deflation specialized to the description of price behavior.

[15] See, for instance, Morrison (1967).

[16] Keynes's approach to banks and monetary circulation was a development of some of his oldest intuitions. It inspired an approach known as "liquidity preference of banks", explicitly proposed by, among others, Hyman Minsky, Paul Davidson, Jan Kregel, Sheila Dow and the present author. See, for instance, Cardim de Carvalho (1999).

[17] Kaldor (1986) praised the Radcliffe Report, in which he recognizes close kinship with his own ideas, for stating that ""Though we do not regard the supply of money as an unimportant quantity, we view it as only part of a wider structure of liquidity in the economy … *It is the whole liquidity position* that is relevant to spending decisions and our interest in the supply of money is due to its significance in the whole liquidity picture. … The decision to spend thus depends upon liquidity in the broad sense, not upon immediate access to the money. … The spending is not limited by the amount of money in

attachment to the concept of money was a legacy of his "classical" training, which he has failed to let go. According to Kaldor, this was the case not only of the GT but also of the *Treatise*:

"Keynes himself never really questioned the assumption that the [1127] *supply of money*, however defined, is exogenously determined by the monetary authorities. At least his equations (whether those in Treatise on Money published in 1930, or in the General Theory of 1936 are not consistent with any other interpretation." (Kaldor, 1986, 1134)

The functions of money could be performed by different assets in various degrees: many things are "liquid", just more or less so.

Liquidity preference, as a result, was considered by Kaldor a "red herring" because, like the quantity theory of money that was its ancestor, it relied on the assumption that one could set apart unambiguously what constituted money.[18] Even more problematic were its policy implications, since it suggested that monetary policy could be much powerful to affect macroeconomic variables than Kaldor believed to be true.

Kaldor described the money creation process as consisting in two relatively simple steps. It begins with non-financial entities, mostly firms, demanding credit from the banking system. It is assumed that credit is demanded so that those entities can purchase goods or services, such as labor services and material inputs. Kaldor assumes that these demands are accommodated by banks, allowing for the consideration of the risks involved in each individual credit request. How this process of risk evaluation and selection takes place and its eventual impact on the supply of credit is not explored by Kaldor who seems to believe that it does not essentially change the nature of the credit creation process. It can be inferred, however, that Kaldor is considering risks pertaining to the project to be financed or to the borrower's profile, not to the risks of bank's balance sheets, as Keynes emphasized. Be it as it may, Kaldor assumes that when the bank agrees to lend money it creates the corresponding deposits. If the bank was loaned up, the creation of new deposits will force the bank to make up for its insufficiency of reserves. Again following Kaldor's reasoning, the bank does not consider calling back previous loans, instead, it turns to the central bank and demand additional reserves.

---

existence but it is related to the [325] amount of money people think they can get hold of, whether by receipts of income (for instance from sales) by disposal of capital assets or by borrowing." [332]

[18]"'Liquidity preference' turns out to have been a bit of a red herring – not the 'crucial factor' which, in the view of the great economists of Keynes's generation, such as Dennis Robertson or Jacob Viner, and, of a later generation, Harry Johnson or James Tobin, alone enabled Keynes to argue that an economy can be in equilibrium at less than full employment. It has nothing to do with that at all. (Kaldor, 1986, 552) Kaldor interprets liquidity preference theory as consisting merely of a qualification on the quantity theory of money assumption that money velocity is stable. For this reason, "once we realize that the supply of money is endogenous (it varies automatically with the demand, at a given rate of interest), 'liquidity preference' and the behavior of the velocity of circulation ceases to be important. (Kaldor, 1986, 146)

Banks were clearly *not* Kaldor's main concern, anyway. He dedicated much more attention to the choices open to central banks in this process. In fact, he postulated that they have none but to accommodate the demand for reserves placed by banks. The central bank is supposed, initially, to set the price of these reserves, setting the interest rate to be charged from banks, but it cannot deny supplying the reserves demanded by banks at those rates. Since the demand for loans from non-financial entities is supposed to be fully accommodated by banks (except for the already mentioned risk considerations) and the demand for reserves by banks is supposed to be fully accommodated by the central bank (at a given "bank rate"), the supply curve of money (that is, of newly-created deposits resulting from the whole operation) could be conveniently expressed as a horizontal curve in the interest rate/money quantity space (whatever "money quantity" might mean!).

Kaldor did dedicate much more effort to exploring the reasons why the central bank could not limit the supply of bank reserves, as Keynes suggested it should. Kaldor argued that central banks have no choice when faced with legitimate demands for reserves (that is, those demands backed by acceptable collateral or within the rules set by law or custom) but to accommodate them. Central banks can set the interest rate charged for these operations but cannot refuse to satisfy the (legitimate?) demands for reserves from banks.

Kaldor, however, did not appeal to the *legal* obligation of central banks to supply reserves under specified conditions. He actually made a larger point, arguing that a refusal by the central bank to validate, through reserve creation, the demands of banks would threaten the solvency of the banking system. It is not obvious why *any* tightening of the market for reserves could have such a wide and deep effect. Kaldor, however, exemplified what he meant, by citing the demand for cash in the days before Christmas (and before the widespread use of credit cards and other alternative forms of payment). Kaldor asks what would happen if the central bank did not accommodate the higher demand for notes and coins during Christmas?

"Of course, most people would say that it would be quite impossible to prevent the rise in the note circulation without disastrous consequences: widespread bank failures, or a general closure of the banks as a precautionary measure." (Kaldor, 1973b, pp. 266)

Still, it would not "stop Christmas buying", because new forms of payment would be created. (idem, p. 267) It is difficult not to conclude that the example, proposed in all seriousness, it seems, in a direct debate with Milton Friedman suggests that the point was blown out of proportion and should perhaps be reevaluated.

On the other hand, Kaldor does not address Keynes's objection that even if accommodation cannot be refused by the central bank, the latter still has the possibility of effecting compensatory transactions with other assets in its balance sheet. In a similar treatment to that of banks, Kaldor seems to consider a central bank whose range of operation is limited to 'rediscounting' private assets presented by banks.

Finally, Kaldor also seemed to ignore the possibility of setting the bank rate according to a central bank's target for bank reserves, as again Keynes suggested.[19] In fact, the status of the bank rate in Kaldor's approach is unclear. At first, it is argued that a central bank can set a "price" target (the bank rate), but not a "quantitative" target (the amount of bank reserves). Kaldor argued that once the central bank decides the rate to be charged it does not have any choice but to freely supply reserves at that price. It is not clear for how long the central bank is considered to be bound by a given announced bank rate, or why it could not 'modulate' the rate in order to limit or expand access to bank reserves, not by denying legitimate operations but by discouraging them.[20]

Kaldor's point, however, is not exactly what it seems at first sight, and what many of his followers took it to be, that is, that monetary policy does not work by setting quantity targets, but that it should aim at price targets, like interest rates. Kaldor in fact goes beyond that to state that the central bank is not at liberty to set the bank rate either:

"Reliance on monetary policy as an effective stabilizing device would involve large and rapid changes in the level of interest rates and, in consequence, a high degree of instability in bond prices in the capital market. But the relative stability of bond prices is a highly important feature of an effectively functioning capital market, and of the whole credit mechanism in a capitalist economy. If bond prices were liable to vast and rapid fluctuations, the speculative risks involved in long-term loans of any kind would be very much greater than they are now, and the average price which investors would demand for parting with liquidity would be considerably higher." (Kaldor, 1973a, p. 217)

Moving up or down the bank rate (and even more so when one take into consideration its repercussions on yield curves) may directly affect the prices of assets and the solvency of financial institutions, even more powerfully than changes in bank reserves could. In fact, Kaldor's main point is that a central bank cannot decide on the quantity of bank reserves (and, therefore, on the quantity of money), neither can it decide on the level of the bank rate. What Kaldor is saying is that monetary policy should not be seen as an instrument of demand management policy at all.

Moreover, Kaldor seemed to want to eat the cake and keep it at the same time. He actually gave, in distinct occasions, at least three reasons to explain why central banks were powerless to control the money supply. The first, and most influential, was presented in this section, and proposed that central banks do not have a choice but to accommodate banks' demands for reserves at a given interest rate. But Kaldor also contemplated the possibility of central banks

---

[19] In fact, Kaldor *did* acknowledge the point: "But the Central Bank cannot close the 'discount window' without endangering the solvency of the banking system; they must maintain their function as a 'lender of last resort'. … *all they can do is to raise or lower the discount rates when the growth of money stock runs ahead of, or behind, the target*." (Kaldor, 1986, 545) However, he didn't extract any conclusion from this statement regarding the validity of his theses.

[20] As we saw before, Keynes didn't ignore that setting the bank rate was the operational procedure favored by the central bank, but he didn't make much of this fact, since the central bank could, in principle, move the rate up and down according to its objectives with respect to the amount of reserves in the banking system.

actually doing just the opposite when he argued, in his testimony to the Radcliffe Committee, that in "countries where the [monetary] authorities pursue a restrictive policy" money velocity increases so to counteract the policy and support aggregate demand (Kaldor, 1973a, p. 210). But Kaldor also presented a third theory of money endogeneity, according to which scarcity of money proper would lead private (and perhaps some public) agents to create money substitutes:

"What, at any time, is regarded as 'money' are those forms of financial claims which are commonly used as means of clearing debts. But any shortage of commonly used types is bound to lead to the emergence of new types; indeed, this is how, historically, first bank notes and then chequing accounts emerged." (Kaldor, 1973b, p. 267)

Both alternatives are hard to reconcile with the notion that central banks always fully accommodate the demand for reserves and banks always fully accommodate the demand for loans which underlie the horizontalist view.

4. Keynes and Kaldor on the Meaning and Role of Liquidity

It should be obvious that the distance between Keynes's and Kaldor's views on the endogeneity of money is very large. More importantly, it relies less on matters of empirical observation than on fundamental points of theory.

The most fundamental opposition between the two authors seems to reside in their different views of what "liquidity" means and how it fits in the operation of a modern economy. Keynes approaches the concept of liquidity in the context of a theory of asset choice. *Liquidity if the attribute that explains why money is held in portfolios*. In this framework, liquidity relates, as we saw in section 2, to convertibility or, to use Keynes's expression, the power of disposal over an asset. Money is an object of demand because (although not exclusively) it is the most liquid of all assets in this sense. To preserve the liquidity attribute of money led Keynes to suggest that constraints on its availability are a necessary condition for the regular operation of an entrepreneurial economy. Money is actually demanded not only as an asset, but also as means of transaction (for the transaction, speculative and finance motives). One has to know all the sources of demand for money to understand how supply and demand for money determines the interest rate, as set by liquidity preference theory.

In contrast, for Kaldor, liquidity relates to the ability of paying for market purchases. It is the ability to serve as means of payment that defines the liquidity of a given object. *Liquidity is the attribute that explains why money is spent*. Of course, to become a means of payment, all that is necessary is that an object be accepted by both parties to a transaction, so that if it is liquidity that defines "money", everything can be money, as long as there exists somebody or some group willing to accept that object as means of payment.[21] In this sense, there is no pre-established limit of the amount of liquidity that can (or should) be created other than the one

[21] "The decision to spend thus depends upon liquidity in the broad sense, not upon immediate access to the money. … The spending is not limited by the amount of money in existence but it is related to the [325] amount of money people think they can get hold of, whether by receipts of income (for instance from sales) by disposal of capital assets or by borrowing." (Kaldor, 1986, 332)

set by the underlying transactions with goods and services that originated the demand for a means of payment. A horizontal supply curve of money does not violate any of the necessary conditions for an asset to be "liquid" in the sense of Kaldor.

A second theoretical contrast between Keynes and Kaldor relates to the *nature* of liquidity. Keynes proposes a *hierarchical* concept of liquidity, where assets are not only differentiated according to the "size" of their liquidity attributes but also by its nature. Money, and in particular, in modern economies, state money, is not only the most liquid asset but in Keynes's view, its liquidity could be seen as "intrinsic" (as long as the elasticity constraints described in section two remain in force). For Minsky, this class of assets (including also some other obligations issued by the state) constituted what he called *ultimate* liquidity.[22] Other assets *derive* their liquidity attributes from their degree of convertibility into money. They are liquid because (and only as long as) the public *believes* they can exchange them for ultimately liquid assets quickly and without significant loss.

Kaldor's concept of liquidity, in contrast, is flat: there is no difference of *nature* between liquid assets, only of degree. Some objects may be accepted as means of payment more widely than others, so that they will be more liquid than the latter. But anybody can create liquid assets, the state does not have a "privilege" in this area.

A third contrast deals with the implications of these opposing views to monetary policy matters. Keynes believed monetary policy to be a powerful influence on aggregate demand behavior. This belief was not changed by the publication of the GT. Keynes in fact maintained it until his death. Kaldor, on the other hand, as seen in section 3, attacked monetarism, particularly the variety practiced during the Thatcher years, because monetary policy could *not* achieve constructive ends. Trying to influence the economy through monetary means would disrupt its operation, as Kaldor believed prime minister Margaret Thatcher to have done. Fiscal, not monetary, policy should be recognized as the efficient instrument to manage aggregate demand.

A fourth contrast between Keynes and Kaldor refers to the role of banks. Kaldor didn't put much effort in discussing the behavior of banks and its impact on the economy, although some of his examination of the role of speculators in the determination of asset prices can illuminate some aspects of the problem (Kaldor, 1980, chapter 1). Keynes, in contrast, dedicated a lifelong attention to the operation of banking systems, arguably much more time than he dedicated to the operation of central banks. While Kaldor explains his brand of money endogeneity with reference to choices of monetary authorities, Keynes attacks the problem through the examination of choices open to banks.

Finally, money endogeneity in Keynes seems better addressed as a *technical* specification of the model, between variables that are and those that are not explained as a result of the model itself, instead of being taken as given. Kaldor, on the other hand, is motivated by his

[22] "The ultimately liquid assets of an economy consist of those assets whose nominal value is independent of the functioning of the economy. For an enterprise economy, the ultimately liquid assets consist of the domestically owned government debt outside government funds, Treasury currency, and specie." (Minsky, 1982, p. 9)

critique of monetarist attempts to rein on aggregate demand through the setting of money stock targets. It is *controllability* that matters to Kaldor.

It should not be surprising that Keynes and Kaldor have left different legacies in this matter. As already mentioned, Minsky developed Keynes's legacy with his proposal to differentiate between ultimately liquid assets and those assets the liquidity of which is derived from the existing facilities to market them. Davidson was also developing what is here proposed as Keynes's approach when distinguishing between two channels of operation of monetary policy, the *income generating* channel, where the monetary authority gives support to banks financing private spending, and the *portfolio change* channel, where the central bank takes the initiative to influence asset prices and investment decisions (Davidson, 1978, pp. 226/7). Kaldor's legacy, on the other hand, is recognizable most notably in the writings of Basil Moore and some of his younger followers.[23]

5. Conclusion

The use of interest rate as the main instrument of monetary policy has been presented by the Kaldorians as a central piece of evidence in favor of the horizontalist hypothesis. Keynes, however, while accepting that monetary authorities do implement monetary policy through setting one or more interest rates, did not attribute any importance to it beyond its identification as modern operational procedures at the disposal of central banks.

For Keynes, therefore, the main points of contention between him and Kaldor's should be found elsewhere. It was the hypothesis raised in this paper that the contrasts between the two views of money endogeneity spring essentially from their radically different views as to what *liquidity* means, its nature and role in modern entrepreneurial economies. Keynes advanced a concept of liquidity as the power of disposal over an asset, making liquid assets, and money inparticular, being the most liquid of all assets, instruments of flexible strategies of wealth accumulation, a plus in the face of the uncertainty that surrounds the future. Some assets are considered intrinsically liquid, others are liquid because ways were created to facilitate their marketability. Money is endogenously determined because it results from private decisions of wealth accumulation, oriented by the choice between expected cash returns and liquidity premia. Equally important, since money is created as a byproduct of the purchase of earning assets by the banking system, for Keynes the identification of the assets banks purchase was fundamental to determine the destination of newly-created deposits, whether to industrial circulation or to financial circulation.

Keynes, when writing the Treatise and defining the concepts of monetary regime that he never reneged, did not believe that the essential distinction in monetary dynamics was that between commodity money and credit money, as suggested by Kaldor, but that between representative money regimes, particularly between fiat money and managed money. Bank deposits are the main type of means of payment in both types of regimes.

---

[23] An "independent" view in this debate was proposed by Weintraub (1978a, 1978b), which is somewhat similar to Kaldor's, but with a nuance: central bankers are not *compelled* to react the way Kaldor suggested. As Weintraub (1978b) put it: "Thus M_s-endogeneity may not be complete; it has been erratic and only intermittently predictable."

Finally, it should be clear that clarifying Keynes's arguments as to how one could think about endogenous money in his macroeconomic theory is *not* the same thing as stating which theory is correct. At the end of the day, of course, the proof of the pudding is not in the best way to describe the recipe, it is the eating. Whether it is Keynes or Kaldor (or neither) who is correct is an empirical question. The aim of this paper is confined to stressing theoretical contrasts. Having said that, the author may be perhaps forgiven for advancing the view that Keynesians believe that Keynes's views as to the importance of liquidity and liquidity preference, as summarized in this paper, were vindicated by the behavior of monetary and financial systems since the beginning of the current crisis, in 2007 in the United States.

References

Cardim de Carvalho, F., Mr Keynes and the Post Keynesians. Principles of Macroeconomics for a Monetary Production Economy, Aldershot: Edward Elgar, 1992.

Cardim de Carvalho, F., "On banks' liquidity preference", in P. Davidson and J. Kregel (eds), Full Employment and Price Stability in a Global Economy, Cheltenham: Edward Elgar, 1999.

Davidson, P., Money and the Real World, London: MacMillan, 2nd edition, 1978.

Kaldor, N., "Monetary policy, economic stability and growth, 1958. Memoranda of evidence to the Radcliffe Commission", in A.A. Walters (ed), *Money and Banking. Selected Readings*, Harmondsworth: Penguin, 1973a.

Kaldor, N., "The new monetarism", in A.A. Walters (ed), op. cit, 1973b.

Kaldor, N., Essays on Economic Stability and Growth, New York: Holmes and Meier Publishers, Inc, 1980.

Kaldor, N., *The Scourge of Monetarism (Radcliffe Lectures)*, 2nd edition, Oxford: Oxford University Press, Kindle Edition, 1986.

Keynes, J.M., The Collected Writings of John Maynard Keynes, edited by D. Moggridge and E. Johnson. London: MacMillan for the Royal Economic Society. Volumes are identified as CWJMK, followed by the volume number in Roman numerals.

Keynes, J.M., The General Theory of Employment, Interest and Money, London: Palgrave MacMillan for the Royal Economic Society, 2007.

Minsky, H.P., *Can 'It' Happen Again?*, Armonk: M. E. Sharpe, 1982.

Rymes, T., Keynes's Lectures, 1932-35, London: MacMillan in association with the Royal Economic Society, 1989.

Morrison, George, *Liquidity Preference of Commercial Banks*, Chicago: University of Chicago Press, 1967.

Weintraub, S., Keynes, Keynesians and Monetarists, Philadelphia: University of Pennsylvania Press, 1978a.

Weintraub, S., Capitalism's Inflation and Unemployment Crisis, Reading: Addison-Wesley Publishing Company, 1978b.