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Financial innovation and the post keynesian  
approach to "the process of capital formation"

nº 380

Fernando J. Cardim de Carvalho\*\*

Textos para Discussão

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## 1. INTRODUCTION

About three years after the publication of *The General Theory*, Keynes reviewed for *The Economic Journal* a study prepared by a Committee of Statistical Experts for the League of Nations collecting "Statistics relating to Capital Formation". In the review, he admitted that "[in his] *General Theory of Employment, Interest and Money* [he] was seriously at fault in omitting any discussion of what the Committee call 'the process of Capital Formation'." (Keynes, 1939, p. 573). He went on to add: "under the spur of criticism I have since endeavoured to remedy this omission in an article published in this Journal (December 1937b, pp. 663/9)". (idem)

The paper Keynes referred to was his last intervention in the debate initiated with Ohlin's critique of the liquidity preference theory of the rate of interest, a paper called "The 'Ex-Ante' Theory of the Rate of Interest". Ohlin had proposed that the rate of interest should be seen as the price of *credit*, instead of the price of *money*, as defended by Keynes. Ohlin agreed that the rate of interest could not be the result of balancing *actual* saving and investment, because these were identical to one another, but stated that the relationship between *intended* saving and investment presented an entirely different problem. The supply of credit by banks was proposed to depend on the deposits that savers kept for purposes other than direct purchases of goods; the demand for credit should come from those agents planning to spend beyond their current income, typically firms willing to make investments beyond retained profits. Faithful to the Wicksellian spirit, Ohlin's approach was thus to postulate that the rate of interest was determined by the supply and demand for credit, and, thus, *ultimately*, by productivity and thrift.

Keynes's reply was very complex. He admitted that planned investment could influence the rate of interest but not for the reasons raised by Ohlin. Keynes recognized that investment *spending*, like any other class of spending, needed money to take place. The amount of money necessary to effect this expenditure was called by Keynes *finance*, and the demand for money to satisfy this need was attributed to the *finance motive*. In this view, however, the way to satisfy this demand had nothing whatsoever to do with savings. It was demand for money to spend to be satisfied through making money available to spenders.

Keynes's concept of finance may be perhaps the most likely candidate to the title of least understood concept in the modern history of economics. Most of Keynes's critics on this subject simply did not realize, or did not accept, the specific meaning Keynes gave to the word *finance*, at one time different and narrower than what was (and still is) common usage. Keynes himself realized the discussion developed at cross-purposes because of the inability of participants to agree on the meaning of crucial concepts:

"A large part of the outstanding confusion is due, I think, to Mr. Robertson's thinking of 'finance' as consisting in bank loans; whereas in the article under discussion I introduced this term to mean the *cash* temporarily held by entrepreneurs to provide against the outgoings in respect of an impending new activity." (CWJMK 14, p. 229, Keynes's emphasis)

But Keynes also recognized that obtaining finance is just the starting point of the capital formation process. His approach to this problem actually involved many other concepts derived from his principle of effective demand. In the debate with Ohlin, these other aspects were either kept in the background or were introduced piecemeal, when the direction of the confrontation created the need to make a novel point. As a result, Keynes's overall approach is not always clear, leading some critics to see his arguments as

mere *ad hoc* attempts to save his face rather than legitimate efforts at theoretical clarification.<sup>1</sup>

That this was a difficult debate is witnessed by its revival in the late seventies, opposing Kregel to Asimakopulos, among others, on the same subject. This confrontation too ended by exhaustion of the participants rather than exhaustion of the subject. Despite being more restricted in scope than the first round, there emerged again the same difficulty in separating issues pertaining to the analysis of the demand for money, the meaning of savings in the Keynesian system, the forces operating on the interest rate etc.

In this paper, we don't intend to review these two rounds of debates<sup>2</sup>. In fact, we are primarily concerned with the conception of the financial process of investment that springs from the principle of effective demand and is made at least partially explicit by Keynes in his polemics with Ohlin as well as in a number of other writings in which the same subject was dealt with under the rather modest title of "techniques of borrowing"<sup>3</sup>. Our ultimate goal is to examine the implications of Keynes's approach to the evaluation of the efficiency of alternative models of financial organization. In particular, we are interested to discuss whether the recent wave of financial innovation and change has made Keynes's theory obsolete. To seek these goals, we try, in the next section, to reconstruct a Keynesian theory of "the process of capital formation", developing the concepts of finance and funding as theoretical stages of a process in which the creation of liquidity is required to precede the investment spending that will cause savings to be created. Section three will examine the common criticism that Keynes's distinction between those two stages of the financial process results from the undue generalization of relations that are only valid to financial systems organized as they are in the United Kingdom and the United States. Section 4 will then examine the extent to which the most important financial innovations

that have been introduced in the last ten to fifteen years deny or confirm the validity of the conceptual framework proposed by Keynes. A concluding section summarizes the points made in the paper.

## 2. KEYNES ON "THE PROCESS OF CAPITAL FORMATION": A MONETARY THEORY OF CAPITAL ACCUMULATION

In his 1937 paper cited above, Keynes summarized the financial requirements of the process of capital formation as follows:

"The entrepreneur when he decides to invest has to be satisfied on two points: firstly, that he can obtain sufficient short-term finance during the period of producing the investment; and secondly, that he can eventually fund his short-term obligations by a long-term issue on satisfactory conditions." (Keynes, 1937b, p. 664)

The distinction between short-term finance and funding seemed irrelevant in the light of the orthodox approach. In the latter, finance was obtained by an investor when a bank intermediated somebody else's saving to provide the investor with the command on unused resources available for accumulation. In this sense, in the orthodox model, investment was assumed to be funded by savings from the start. For this reason, Keynes concentrated his argument in the debate with Ohlin mainly on the first of the two points, the satisfaction of the demand for short-term finance. From Keynes's point of view, the recognition that there is this first requirement is crucial. It has to do with his views as to the role of money in an entrepreneurial economy, and with how investment and saving are related according to the principle of effective demand.

For Keynes, the actual purchase of an investment good, or the placement of an order to produce the good, requires

money to be effected. In fact, in a monetary economy, the purchase of *anything* depends on having access to money. To the provision of cash, Keynes reserves the word *finance*<sup>4</sup>. One can get hold of cash, or *finance*, in two ways: 1. by selling goods or services; 2. by selling debts to banks or speculators. In the first case, one obtains cash when the *existing* stock of money circulates through the economy as the counterparty of the circulation of goods and services. In the second case, either new money is created as a consequence of supplying new bank loans or inactive balances are transferred to active circulation. If aggregate expenditures remain constant, given money's velocity of circulation, the existing stock of money can *finance* them, be them directed to consumption, investment or any other kind of goods, just by the normal changing of hands consequent upon market transactions. The existing money supply becomes a *revolving fund of money in circulation* (CWJMK 14, p. 232). If, on the other hand, aggregate expenditures are to be increased, everything else remaining the same, new money has to be created:

"The fact that *any* increase in employment tends to increase the demand for liquid resources, and hence, if other factors are kept unchanged, raises the rate of interest, has always played an important part in my theory. If this effect is to be offset, there must be an increase in the quantity of *money*." (CWJMK 14, p. 231, Keynes's emphases)<sup>5</sup>

It is essential in this context to realize that finance can thus be obtained by the sale of goods and services, that is, that somebody can get hold of money and to become capable of executing spending plans by selling some object. That it is possible to obtain finance through this channel is the reason why Keynes is so insistent that consumption, or any other kind of spending, releases as much finance as saving, if not more.

If finance is provided and the investment is made (i.e. the expenditure in investment goods), income is generated

and, out of this income, savings are created in the same amount exactly of the investment expenditures. Saving is the *result* of this process, not its starting point:

"Increased investment will always be accompanied by increased saving, but it can never be preceded by it. Disharding and credit expansion provides not an *alternative* to increased saving, but a necessary preparation for it. It is the parent, not the twin of increased saving." (Keynes, 1939, p. 572, emphasis in the original)

This argument had already been made, if anything even more forcefully, in the 1937 paper:

"The investment market can become congested through shortage of cash. It can never become congested through shortage of saving. *This is the most fundamental of my conclusions within this field.*" (Keynes, 1937b, p. 669, my emphasis)

Why is this a fundamental conclusion in the analysis of the process of capital formation?

The orthodox notion of the process of capital formation could be summarized in the succession of three phases: "the first consists in the setting aside of savings out of current income; the second stage in streams of 'funds' becoming 'available for investment'; and the third stage in the actual outlay of money for the acquisition of capital goods." (Keynes, 1939, p. 570)<sup>6</sup>

In an entrepreneurial economy, the story is more complex and begins with agents planning their expenditures on consumption goods, investment goods or, for that matter, whatever object they want to purchase. To do it, they have to get hold of "finance", that is, of enough money to give the seller in exchange for the desired goods. Planned expenditures, thus, create a demand for money in advance of being effected. This demand could be generally called a transactionary demand for money, since it represents the

money sought for in anticipation of a planned transaction. As Keynes put it, *any transaction* involves demanding money, no matter what the nature of transacted good is:

"It is not an increase of investment as such which requires an immediate increase in 'available funds', but an increase of output whether for investment or for consumption, or, more strictly *an increase in the turnover of transactions for any purpose whatever.*" (Keynes, 1939, p. 573, my emphases).

In the Keynesian language, however, the label *transactions demand for money* is reserved for the money demand in anticipation of routine expenditures, that is the demand "due to the time lags between the receipt and the disposal of income by the public and also between the receipt by entrepreneurs of their sale proceeds and the payment by them of wages, etc." (CWJMK, 14, p. 230). The money demand to allow purchases of investment goods to be made, that is "the demand due to the time lag between the inception and the execution of the entrepreneurs' decisions" (*idem*), is called the *finance demand*, not because it has a different nature, but because "it is subject to fluctuations of its own" (Keynes, 1937a, p. 247).

Keynes emphasized many times that by *demand for finance* he means *demand for money*<sup>7</sup>. To admit that planned investment expenditures may influence the interest rate does not change liquidity preference theory:

"... the conception of the rate of interest as being determined by liquidity preference emphasises the fact that *all* demands for liquid funds compete on an equal basis for the available supply; whereas the conception of a *separate* pool of 'funds available for investment' suggests that the rate of interest is determined by the interaction of investment demand with a segregated supply of funds earmarked for that special purpose irrespective of other demands and other releases of funds." (Keynes, 1939, pp. 573/4)

Taking the demand for finance as a class of demand for money implies that the demand is extinguished when the actual expenditure is completed. Finance is then *released* in the sense that the money that was being previously accumulated has now changed hands, being at the disposal of another agent, who has become able to finance his own planned purchases or to hold it inactive. Unless this money is destroyed, through the settlement of bank debts, for instance, it will remain as potential purchasing power, as somebody's possession ready to be spent when it is so desired. Thus, finance is a *revolving fund*: if the agent who receives the money has spending plans to be financed, money has become available to do it: "The 'finance', or cash, which is tied up in the interval between planning and execution, is released in due course after it has been paid out in the shape of income(...)" (CWJMK 14, p. 233) If this agent's spending plans do not require finance in excess of the cash value he received, he can now realize his own desired expenditures. No additional bank credit is required, so it is not relevant in this context whether or not the investor has settled his debts with banks. *Banks do not have to create new loans*. The next spender in line will use the money he received to make his payments. *Total deposits do not have to change for new payments to be made: they just change hands*. It is in this sense that expenditure *releases* finance. As Kregel rightly insisted in his debate with Asimakopulos, finance in the Keynesian concept has nothing to do with saving or with the multiplier. As long as we are dealing with a constant flow of expenditures, finance remains a revolving fund. It is only when expenditures are *increasing* that new money has to be created and new bank loans have to be made.

Important as the concept of finance is for Keynesian macroeconomics, however, it is still insufficient to account for the process of capital formation as a whole. If investment is not peculiar among other classes of spending in so far as it requires finance to be available, it is peculiar in its being

composed of the purchase of long-lived assets. This raises the problem of how to *fund* it, that is, how to make compatible the long life of the assets purchased and the temporal profile of the liabilities to be issued to allow their accumulation.

Although Keynes was well aware, as we saw, of the need to provide investors with funding facilities, he only explored this point in greater detail when discussing the funding of the British government's loan expenditures in the eve of the Second World War.

Keynes began his examination of the funding problem by stating his point of agreement with the orthodox view: "it is common to the old [orthodox] view and to the new [his own] view that increased loan expenditure can only be met out of increased saving." (CWJMK 21, p. 538) How saving is increased to meet loan expenditures is what differentiates the two views.

In Keynesian theory, saving cannot precede investment because an act of saving in isolation of a new investment, according to Keynes, is nothing but a subtraction from current demand<sup>8</sup>. The result of somebody saving more of his/her current income can only be, in the absence of the creation of a new asset by a new investment, somebody else's dissaving or the causing of a loss to some seller of goods that will be financed by the additional saving. In contrast, a new investment, as, in fact, any discretionary expenditure that one is successful to effect will generate income non-available for consumption, that is, savings. This is a fundamental implication of the principle of effective demand.<sup>9</sup>

Discretionary non-consumption spending, thus, does "create" the amount of saving out of which the loans made to make the expenditure possible will ultimately be funded. Saving is a *result* of the process and its amount can never be lower than the investment that was made. In sum, the



quantity of saving cannot be an obstacle to investment. In fact, if we consider the consumption multiplier, we know that, if there is enough "finance" to allow the investment to be made, the latter will generate sufficient aggregate income to make the saving it creates *desired saving*<sup>10</sup>.

Savings are created simultaneously with investment but this does not mean that it becomes immediately available to fund the debts of investors. In fact, it may not even become entirely available to fund investments at any time in the future.

In order to allow the long-term funding of investors' debts, the additional savings must become demand for long-term assets. According to Keynes, there is a lag between the generation of saving and the emergence of an additional demand for permanent assets by savers. The reasons for this lag, or hypotheses about its duration, are not actually given by Keynes. In fact, it is only said that "the initial period [separating the finance of loan expenditures and their funding] must also be long enough in point of time for the new savings to reach the ultimate holder, who alone is in a position to embark them in a permanent investment, and to allow him to make an unhurried decision." (CWJMK 21, p. 543).

Despite the acknowledgment of the importance of asking how this latter decision is made, Keynes is rather vague about the problem. Most of the papers in which the issue is discussed are, in fact, recommendations of criteria for the actual placement of securities by the British Treasury in its effort to organize the financing of the then incoming war. In any case, one such lag separating the generation of saving and its availability to absorb long-term securities could be the operation of the multiplier itself. This could be the time required for "the new savings to reach the ultimate holder", mentioned above. But Keynes also assumes that there may be a decision lag, during which the saver may

make a temporary position in liquid assets before making his/her mind as to what assets to demand.<sup>11</sup>

This latter kind of lag may be explained, in fact, by the need to formulate accumulation strategies on the part of savers. It would also, however, be influenced by uncertainties about the future value of securities, that is, by the uncertainty about future interest rates. In this point; the monetary character of the Keynesian approach to the process of capital formation is again made explicit. The uncertainty about future rates of interest may generate a bearish sentiment in the securities markets that will stimulate savers to remain liquid. For this reason, a commitment to the maintenance of low interest rates in the present and in the future are essential to induce savers to demand long-term securities. In a somewhat long quotation, Keynes made his point clear:

"Let us suppose, in the first instance, the Treasury bill issue [through which finance was obtained] is expanded by \$200.000.000 with no increase, for the moment, in other types of loans. These bills will all be owned by someone and will represent an increase in private wealth; there must, that is to say, be a corresponding increase of savings. Now these savings will be owned by all sorts of individuals and institutions up and down the country. It is to be supposed that all these people will suddenly change their habits, abandon their life-long practices of investing their savings, and decide that they want to keep all their growing resources absolutely liquid earning interest at 0.5% per annum or less? ... Moreover, there can be only one motive in most cases for such hoarding, namely that the Treasury will be offering loans on terms increasingly favourable to the public as time goes on. The only risk, that is to say, would be a widespread belief that the Treasury are likely to mug their business." (CWJMK 21, p. 540/1)<sup>12</sup>

In another version of the same article, Keynes completed:

"If the Treasury makes it clear that this will not occur, it would be reasonable to expect a fair proportion of this \$200.000.000 to seek investment in the market." (idem, p. 560)

In fact, in an entrepreneurial economy, plagued by Knight/Keynes-type of uncertainty one would expect that part of the increase in wealth would always be kept in liquid or even monetary form. As a result, to accommodate the placement of long-term securities to allow the funding of investments, the monetary authority should provide the economy with all the liquidity it demands, to prevent the rate of interest from rising. In any case, the right moment to make the funding of debts would be revealed by the securities market itself:

"When the public are ready to invest their savings in a more permanent form their demand will have its natural effect in raising the market price of securities." (CWJMK 21, p. 525)

Thus, movements of the prices of securities would signal the moment to proceed to the funding of short-term debts. Trying to place long-term securities before their demand would be tantamount to forcing the issuers' own liquidity-preference on that of the public. The result would be stringency in the securities market and rising interest rates.

In sum, the Keynesian approach to the process of capital formation is distinguished from the orthodox approach first and foremost by its monetary character. The investment process begins with the supply of money to investors. Once the investment is made, saving is created and income rises. The fate of that saving depends, again, on monetary factors, including monetary policy that indicates the likely course of future interest rates. As Keynes insisted again and again, in an entrepreneurial economy saving always exists in the same value as the investment that is made. The problems to be addressed in these economies is not how to generate saving,

but how to make money available to investors, first, and, later, how to make most of the resulting saving available to allow the funding of the investors' debts. As Keynes put it in relation to the latter:

"The savings will come into existence *pari passu* with the expenditure. The only question which arises is as to the ultimate form in which they are held ..." (CWJMK 21, p. 516).

### 3. FINANCE, FUNDING AND THE STRUCTURE OF THE FINANCIAL SYSTEM

In the approach to the process of capital formation just described, the financial support necessary to the realization of investments consists, firstly, in the provision of money to allow the investment expenditure to be effected and, secondly, the opening of channels through which saving can fund, directly or indirectly, the debts created to finance the expenditure. Money does not intrude in this analysis just by being the means to finance the initial expenditure. It is also a form of wealth, with certain attributes. It may be a preferred means of accumulation to investment goods in the first place and it may again be preferred to other financial assets that could be used to channel savings to the funding of investments. In this sense this is a *monetary* theory of capital accumulation.

The financial system, that is the set of financial institutions and markets, their practices and interrelations, of a modern, monetary economy must be organized to meet the demands of the process of capital formation<sup>13</sup>. This means that is must be prepared to make available the necessary finance for the investment process to start, that is, to provide investors with the money required for the planned investment expenditures to take place *and* allowing the investors' debts to be adequately funded.

Perhaps, due to the difficulties the more advanced economies were facing in the thirties even to put their *existing* productive capacity and labor force to use, or because Keynes believed that these economies were getting close to capital saturation<sup>14</sup>, very little emphasis was conferred to growth problems in his works on the process of capital formation. In fact, much more lines were written by Keynes to explain the sense on which finance could become a revolving fund if investments were kept constant overtime, which would account for an economy growing at decreasing rates.

Sustained growth, in contrast, required an ever expanding stock of money, to finance an increasing value of investment expenditures. The financial system, in this case, has to meet two criteria of efficiency: it has to provide an *elastic* supply of finance to accommodate growing investment expenditures, besides creating the direct and indirect finance channels to allow funding them.

The first of the two demands is met by banks as *creators of money*. The investors need transaction balances that are provided by banks when deposits are created. As Keynes and Post Keynesians insist, this is a bookkeeping operation, that involves no actual *real* resources and, in particular, no savings. The bank creates a liability, the deposit, that is accepted by sellers of investment goods as money. If the monetary authority is ready to accommodate the demand for reserves that arises as a result of the creation of deposits, finance is generated<sup>15</sup>. On the other hand, if banks refuse to accept these new liabilities, the rate of interest will have to rise to induce the public to hold a lower proportion of their money holdings, and investments may be killed, no matter what the propensity to save of this economy may be. As Keynes put it:

"(...) the transition from a lower to a higher scale of activity involves an increased demand for liquid resources which cannot be met without a rise in the rate of interest,

unless the banks are ready to lend more cash or the rest of the public to release more cash at the existing rate of interest." (Keynes, 1937b, p. 668)

As a result, if the liquidity preferences of the public do not change, "banks hold the key position in the transition from a lower to a higher scale of activity." (idem)

When an investment expenditure is finally made, the money that was being held temporarily inactive by the prospective investor returns to circulation, ready to be held temporarily inactive again by the next prospective investor. It is only when investments *increase* that the pool of money created to attend the finance motive becomes insufficient again, forcing banks to decide, again, whether or not to meet the increased demand for money.

If an investor obtains finance through short-term borrowing from banks, he must expect to be capable, later, of placing longer-term securities in the market to use the proceeds to settle the debt with the bank. The risk of not being able to fund the debt is borne, in this case, by the investor himself, who borrowed short to invest in long-lived assets. Alternatively, the investor may place long-term securities with a financial intermediary, an investment bank, for instance, that will place them in the securities market in a later occasion. The intermediary has to have its own source of money, that may be a bank, or he may appeal to those in the public who keep money in the financial circulation. In this case, the risk of not being able to fund the debt is borne by the intermediary since the investing firm already placed its long-term liabilities.

If an intermediary, like the investment bank, intervenes, it may act as what Kaldor called a *speculator* (Kaldor, 1939). In his debate with Ohlin, Keynes conceded, as we saw above, that the finance motive could be met either by credit expansion by banks or by the public releasing cash held inactive, a possibility that would depend on some

autonomous change in liquidity preferences scales. This is the possibility explored by Kaldor. He defined speculation as the act of purchasing an object with the intention to resell it later, at higher prices, in the expectation of favorable changes taking place in the markets concerned. The intermediary may absorb the securities issued by the investing firm in the expectation of placing them in the market when the demand for them becomes stronger.<sup>16</sup> This should happen, anyway, according to Keynes, when the new savers created by the investment come to the market in search of permanent assets to hold.

The speculator can use its own resources or the credit facilities at his disposal to buy the securities. In the *Treatise on Money*, Keynes had defined two circuits of monetary circulation, the *industrial circulation* and the *financial circulation*. The first concerned the amount of money necessary to allow the transactions with the flow of goods and services to be effected. The financial circulation was the amount of money necessary to allow transactions with the existing stock of financial assets as well as to be held as "liquidity time-machines", to quote Davidson. Money in the financial circulation can be used to buy securities according to the returns they are expected to offer. The financial circulation is, thus, the source of finance that speculators can use to absorb newly-issued securities, even if overall credit, and the stock of means of payment, is not expanded.<sup>17</sup>

The model of a financial system where different institutions should perform the finance and funding functions in a monetary economy draws much of its plausibility from its close correspondence with the way the system is structured in the United States and in Great Britain. In these countries the hypothesis that there is a dichotomy between banks, as creators of finance, and other financial institutions, as intermediaries of savings, and, thus, providers of funding to investors seems to be confirmed empirically. In fact, at

least in the case of the US, the financial intermediaries that buy long-term securities to supply finance to long-term assets buyers with the intention of reselling them in the future do act as Kaldorian speculators, financed, at least partially, by credit creation by commercial banks<sup>18</sup>. In these systems, financial institutions should be classed in two groups: commercial banks, able to create money and, thus, to provide *finance*; other financial intermediaries, providing the channels through which saving is ultimately used to fund the investment. The most visible characteristic of such a solution to the problem of providing finance and funding is the *segmentation* of the financial structure and the *specialization* of institutions in the provision of specific classes of credit or of intermediation services<sup>19 20</sup>. The distinction between finance and funding, however, is not empirical in nature, even if we can identify actual financial systems that attend to that description in a relatively direct way. Its validity, however, does not depend on the institutional specialization typical of the US financial system. On the contrary, in any monetary or entrepreneurial economy the process of capital formation should begin with the provision of liquidity, the supply of finance, to be concluded with the generation and allocation of savings, as the ultimate source of funding for investment. In particular, no entrepreneurial economy could be conceived where savings had to be previously made available to allow investments to take place.

Thus, different forms of organization of the financial system should constitute specific forms of allowing the two functions, provision of finance and channeling of savings to fund debts, to take place. In particular, non-segmented systems, like those organized around the so-called *universal bank*, must perform both functions, even if the distinction between finance and funding becomes internal to an institution capable of providing many classes of financial services "under one roof".

markets scattered around the world. Arbitrage opportunities stimulate financial institutions to deal in geographically distant markets through the placement of complex products that were made accessible by advances in information and communications technology. On the other hand, desregulation overthrows barriers between markets in segmented systems but also between national financial markets. To be able to operate in the desired scale, banks form conglomerates either by developing new divisions from within or by acquiring or merging with other financial institutions.

The trend toward globalization is a major, although not the only one, force behind the removal of barriers to the diversification of activities in countries like the United States or Japan. Although the Glass-Steagal Act has not yet been repealed in the US, many loopholes have been found (or created) to allow commercial banks to deal with securities or to perform investment bank activities. Something similar has been taking place in Japan as well, where regulations have been modified in the last three years to allow commercial banks to take part in the securities business. As a result, market segmentation has been eroded, allowing the growth of institutions closer in nature to the universal bank, ideally capable of supplying all types of financial services "under one roof".

New challenges are, however, being put to universal banks themselves by deregulation and globalization. These institutions, as they exist in fact in countries like Germany, did not quite correspond to the *concept* of universal bank. German universal banks were merely *authorized* to deal in many markets and forms of intermediation<sup>25</sup>. Financial relations in Germany, however, consist mainly in the supply of credit. Financial markets are either underdeveloped or just non-existent. Again, globalization is a major force to change the situation. In a globalized financial system, both those in need of financial resources and those searching for profitable investments find many new opportunities in the diversified markets typical of segmented, market-based structures like

those of the US or the UK. Universal bank systems were incapable of offering the diversity of services one can find in those above-mentioned countries and to avoid losing clients to competing institutions in a global financial market, these banks have to develop the skills required to operate in markets as complex and sophisticated as the derivative assets markets. The wave of acquisitions of British investment banks by German and Swiss universal banks shows how lively is the concern with the preparation to deal in global, sophisticated markets.

In short, the trend toward globalization seems to be forcing existing financial institutions to overcome their weaknesses in order to be able to compete in the enlarged scale made possible by the prospective unification of markets. On the one hand, Chinese walls between markets are increasingly inefficient to prevent the diversification of activities by financial institutions in segmented systems. On the other, financial conglomerates developed in the universal bank systems have been engaged in a difficult process of learning how to really become universal, able to enter and compete in a great variety of markets. A trend seems, thus, to exist toward large, but diversified and agile, conglomerates. To some extent, these may be contradictory requirements and the conflict between the "cultures" needed to create structures that are agile and innovative, on the one hand, and large and financially solid, on the other has arisen in many of the institutions that resulted from the merger between commercial and investment banks.

#### ii. Securitization and the Development of Derivatives Markets

The placement of securities as an alternative to borrowing from financial intermediaries has increasingly become a favored option both for those debtors that command the confidence of investors and for the intermediaries themselves that may minimize the costs they bear and the risks they run with this kind of deal. In fact,

we could, in principle, say that the increasing appeal to securitization results from the accumulation of regulatory constraints on the activity of financial lending, the relatively higher transaction costs involved in lending as compared to the placement of securities, and the increased balance sheet risks created by indirect finance to the intermediaries involved.

Regulatory constraints on lending by banks and, in some cases, also other financial institutions involve prudential regulations designed to prevent excessive degrees of mismatching between assets and liabilities of financial institutions, that actually prevent classes of institutions from operating in some segments of the credit market. More recently, capital adequacy requirements, like those set in the Basle Agreement or the European Union's Capital Adequacy Directive, that force banks and other institutions to build up net worth as a proportion of their loans. In addition, securitization reduces the transaction costs involved in the supply of resources to borrowers. The standardization of documents and requirements necessary to place securities, the socialization of risks that were solely borne by the intermediary, the development of secondary markets to deal in these securities, all contribute to make securitization a cheaper channel to get hold of finance, at least for those borrowers that are accepted by the market. In fact, the trend toward securitization has intensified a kind of duality in the way the market satisfies the demands for credit which has had some important implications for the operation of commercial banks. First-rate firms have increasingly directed their demands for resources to the securities markets where they can borrow at lower rates than they would have to pay for bank credit. Lesser-ranked firms, in contrast, do not have the option to place securities becoming ever more dependent on banks. As a result, the portfolio of loans of Banks deteriorate by the accumulation of less safe assets at the same time that the costs of these loans for the borrowers, for the same reason, tend to increase.

A related, but independent, development is the explosive growth of derivative assets markets. Initially spurred by the volatility of asset prices and interest rates caused by the persistent inflation of the 70s and the repeated attempts to control it through restrictive monetary policies, markets for derivatives kept growing as fast as before, if not faster, when the original stimuli disappeared. On the one hand, despite the evident deceleration in the rate of increase of prices in all developed economies, the concern with inflation has not waned, at least in the financial markets. Changes in inflation expectations are frequent and are reflected immediately in the prices of bonds and, indirectly, of stocks. Monetary authorities still try to control these expectations through frequent changes in short-term interest rates. In a global economy, these changes affect international movements of capital making exchange rates volatile. The resulting uncertainties keep the stimulus to the growth of operations with derivatives. In fact, the strongly innovative nature of these markets allow them to grow even in periods of relative calm, by the creation of the so-called "structured products" that try to benefit from movements in various markets at the same time.

The development of the derivative business gives some support to the trend toward securitization to the extent that it allows transactors in these latter markets to hedge their bets through the purchase of derivative contracts. In fact, derivatives are demanded to anticipate a much more varied set of events, both to hedge bets and to speculate on future trends. Nevertheless, the possibility of hedging against adverse developments in the securities markets allows a greater number of institutions to participate in the latter, increasing the availability of finance through this channel. For some, the support given by derivatives markets is an alternative form of giving liquidity to these placements when the development of secondary markets is too expensive<sup>26</sup>. To some extent, derivatives markets are indeed organized to fulfill these needs. *Exchange-traded* derivatives are created

to allow risks of a more generic or homogeneous nature to be covered. In contrast, hedging against more specific bets, that have to be tailored to specific customers, may be obtained in *over-the-counter* (OTC) deals. The first class of deals are generally safer because the standardization of contracts allow the development of secondary markets and the definition of rules and procedures (like the calculation of margins) enforced by the exchange itself. OTC deals are designed to be closer to the demands of each transactor but, lacking the backup facilities provided by the Exchange, ends up being much riskier<sup>27</sup>.

As a result of these trends, the traditional role of financial institutions like commercial banks seems to be becoming increasingly obsolete. In fact, some banks look much more like brokers, organizing the placement of securities, than like the intermediaries of credit they once were. Their role is, however, still crucial to guarantee the necessary backup liquidity to support these markets. On the other hand, the convenience of supporting the securitization trend with the development of secondary markets and/or derivatives deals imprints a kind of *short-termist* bias to them, by which investors see their financial applications as portfolio investments, to be changed at short-notice whenever new opportunities emerge. This reduces the horizon of expectations in the financial markets with some impact on the financing of longer-term activities as will be argued below.

### iii. *The Emergence of Institutional Investors*

Institutional investors are created when the resources of individuals are pooled to allow them to have access to more profitable and diversified placement opportunities. Many, and in some cases most, of these funds are actually organized and managed by financial institutions, but they are not seen as another class of financial intermediaries. Rather, they seem to take the place of savers themselves, dealing both in direct and indirect finance.

These investors exist in many forms, among them money market funds, investment funds and pension funds. As it happened with other financial markets, some of them originate in the attempt to avoid regulatory restrictions on the applications of financial institutions, as it was the case of money market funds. For individuals, these funds offered the possibility of earning interest on transactionary balances, something demand deposits in commercial banks could not offer. On the other hand, the possibility of deciding their applications without the restrictions imposed by the monetary authorities on banking institutions allowed them higher returns, although possibly at the cost of accepting higher risks. The growth of pension funds, on the other hand, seems to have its roots in the difficulties that public systems of social security have been going through in the last two decades. The expectation that these systems, plagued by deficits caused either by an over-generous policy of entitlements or by the reduction of receipts brought about by the deceleration of economic growth, will be unable to deliver the anticipated retirement benefits in the future has led to the creation, in many countries, of private pension funds to provide for complementary incomes in the future.

Whatever the original reason for these funds to emerge, their size itself is a factor to strengthen their growth. By pooling resources to a significant extent, they allow these investors to hire professional managers, to reduce transactions costs, to spread risks, and to enjoy better terms for their placement, operating in more sophisticated and diversified markets.

All these trends are mutually reinforcing. The rise of institutional investors intensifies the demand for diversification of financial products at the same time in that national borders, with the exception of the US, become too narrow for their investment potential. The volume of resources in search of investment opportunities stimulates financial institutions to become more competitive by searching for more agile and innovative market behavior,

identifying new sources of gain. To adequately explore these opportunities, global scales of operation are sought for, leading to acquisitions and mergers that allow the creation of conglomerates big enough to offer to leading clients a sufficiently ample set of options to attract their investments. One of the most important ways to create these opportunities, on the other hand, is given by the trend toward securitization, accompanied by the growth of derivatives transactions. This, by its turn, forces the financial intermediaries to develop new modes of operation, threatening to make age-old institutions like commercial banks obsolete. A related, very important point is that these changes require an equivalent movement of innovation and evolution in regulatory practices. This is, however, a very complex subject that must be treated somewhere else.

#### iv. The Impact of Financial Innovations on the "Process of Capital Formation"

Do the changes that are taking place in financial markets make the finance/funding view of the process of capital formation also obsolete? Of course, if we considered that the two-stage financial process proposed by Keynes was nothing but a generalization of the workings of the particular financial structure found in England, the answer had to be affirmative. The point of this paper, however, is that the finance/funding model is actually an implication of the principle of effective demand, an essential element in the explanation of how an entrepreneurial economy works. In this sense, the vision of the investment process as one that is initiated when money is supplied to investors, that will, when spent, reconstitute the aggregate pool of liquidity, releasing money to support new transactions, at the same time in which it gives rise to a multiplier process that will lead to an increase in aggregate income, out of which enough savings will be available to allow the funding of debts to be realized, should be valid no matter what kind of specific financial structures we find. In other words, the demands

that an entrepreneur economy poses to the financial system have to be satisfied by any specific financial arrangement.

The trends that were roughly described above do not seem to deny the general validity of the finance/funding scheme. If anything, they seem to allow the creation of more efficient sources of finance, at the same in which a relatively unfavorable bias against long-term investments seems to be established.

Having in mind that increasing amounts of finance can be supplied both by extension of credit by banks and by inducing "speculators" to use balances that would otherwise be kept inactive to absorb liabilities of investors, it seems clear that many of the financial changes currently being implemented actually increase the potential supply of finance as compared with the previous systems. The diversification of opportunities created by securitization, the change of role of banks, from direct suppliers of finance, at their own risk, into promoters and guarantors of the placement of these securities as well as the emergence of money market funds in search of short-term assets, all of them combine to enlarge the pool of resources out of which finance can be obtained, allowing a more efficient use of the liquid resources detained by a community at any time. The cration of secondary markets and/or the development of operations with derivatives give financial investors the liquidity and safety they could otherwise try to obtain by holding money. Satisfying their liquidity preferences in this way makes possible to turn inactive balances into active supplies of finance. There is a downside to the process, however, in that increased reliance on "speculators" to provide finance increases its volatility and sensitivity to changes in interest rates.

The effect on the supply of funding is more ambiguous. The current emphasis on the agility to enjoy market opportunities, the development of new practices and markets to give liquidity to securities, the development of derivatives



markets, the drive, indeed, to acquire *mobility* as the most promising way to maximize financial gains, have contributed to a short-termist posture that, in itself, is detrimental to the development of long-term channels of funding. The risks represented by long-term commitments in a rapidly-changing world become less and less likely to be accepted when highly liquid earning assets become available in such a wide array of choices. On the other hand, the rise of institutional investors, specially pension funds, in search of assets capable of guaranteeing stable benefits in a distant future may significantly increase the sources of funding for those investors solid enough to have access to them. In addition, the tendency to securitization allow investors to issue securities with varied characteristics to suit potential lenders. On balance, one should fear that the predominance of a short-termist perspective could make economies more financially fragile, in the sense of Minsky. Investors might be tempted, by the wide variety of financial products available, to finance their capital accumulation with short-term instruments, in markets averse to long-term commitments. As consequence, balance sheets should be much more vulnerable to adverse shocks in interest rates or the availability of finance.

The convergence between segmented and universal banks, in itself, does not deny the validity of the finance/funding model either. On the contrary, the tendency to associate commercial and investment banks, in which the former serves as the supplier of backup liquidity for the deals organized by the latter, should make both the finance and the funding stages of the investment process easier, since a direct interest in seeing the process through to its completion.

Important aspects of these changes that are not contemplated here are the changes in the nature and extent of risks that these new practices and markets may cause and the related issue of how to adapt regulations to make

sure that financial markets can operate safely. These are certainly very important subjects that have, however, to be treated separately.

## 5. CONCLUSION

The debate between Keynes and Ohlin in *The Economic Journal* in 1937 originated a long and heated debated, that recently flared again in the exchange between Asimakopulos, Kregel and Davidson, among others. Most of the time, the discussants are concerned with precisely establishing the differences between the loanable funds and the liquidity preference theories of the rate of interest, and the influence, if any, investment and saving may have in its determination. Important theoretical subjects are involved in this discussion and the inconclusive character of much of this literature is a witness to its complexity.

In this paper, we intended to take a different path. When presenting his views on the determination of the interest rate, Keynes proposed a specific approach as to how the financial side of the investment process should be understood in an entrepreneurial economy. The points made in the debate with Ohlin were later developed by Keynes in a review of a study on the process of capital formation and in debates on how should the British Treasury provide for its financial needs on the eve of the second world war. Collecting the points made in these occasions, we tried to present an integrated view of the finance/funding model and of its main implications. In particular, we tried to focus on the twin processes taking place in the "money" market and in the credit market when the investment process begins and how the decision to absorb savings should be carried out in this kind of economy. These ideas were then used to inform a description of the two prevailing forms of institutional organization of financial systems in modern economies, the

segmented structure typical of the US, UK and Japan, and the universal bank system found in Germany, Switzerland and France. The following section dealt with the changes that have been taking place in the financial practices and markets in the last ten to fifteen years to show that far from making the finance/funding model obsolete, these changes may be actually strengthening the validity of these arguments.

## NOTES

<sup>1</sup> This is, for instance, Tsiang's assessment of Keynes's arguments. See Tsiang (1956).

<sup>2</sup> The author tried his own evaluation and synthesis of arguments in Carvalho (forthcoming a; forthcoming b).

<sup>3</sup> Keynes's main contributions to this problem are collected in volume 21 of his *Collected Writings*.

<sup>4</sup> Cf., for instance: "the bridging of this time-lag by 'finance' (i.e., by the *supply of money*) being the function of the credit system..." (Keynes, 1939, p. 574); "to avoid confusion with Professor Ohlin's sense of the word, let us call the advance provision of *cash* the 'finance required by the current decisions to invest.'" (Keynes, 1937a, p. 247). All emphases are mine.

<sup>5</sup> Keynes also allowed for a decrease in the public's liquidity preference, releasing into active circulation money previously retained as inactive balances.

<sup>6</sup> The "previous-saving" argument was revived in modern orthodox economics, particularly in the so-called financial repression models. For a criticism of these "new" forms of the old argument, see Studart (1995).

<sup>7</sup> For example: "for finance' constitutes... an additional demand for liquid cash in exchange for a deferred claim. It is, in the literal sense, a demand for money". (idem, p. 248). In particular, Keynes emphasized that one is not discussing how equilibrium is achieved in the bank credit market, focusing, in contrast, in the market for

cash (CWJMK 14, p. 229). They are related, of course, and the almost exclusive attention given by Keynes to the latter does leave some questions answered, as the 1980s debate has shown.

<sup>8</sup> In Keynes's often-quoted words: "An act of individual saving means - so to speak - a decision not to have dinner today. But it does not necessitate a decision to have dinner or to buy a pair of boots a week hence or to consume any specified thing at any specific date. Thus it depresses the business of preparing today's dinner without stimulating the business of making ready for some future act of consumption. It is not a substitution of future consumption-demand for present-consumption demand- it is a net diminution of such demand". (Keynes, 1964, p. 210).

<sup>9</sup> Again referring to government expenditures, Keynes explained: "Moreover the loan expenditure will only be physically possible if the government is successful in attracting resources for its own use; which means that *a sum equal to the incomes generated by the governments's expenditure is physically withdrawn from consumption and must therefore be saved*. Thus the required amount of saving necessarily comes about, irrespective of whether the rate of interest rises or falls." (CWJMK 21, pp. 538/9) More generally, "what is one man's expenditure is another man's income. Thus the excess of the community's aggregate income over what individuals spend, which is left over and available to pay taxes and loans to the government, must be exactly equal to what the government spends." (idem, p. 515). Exactly the same reasoning obviously applies to the relationship between investment and saving.

<sup>10</sup> The consumption multiplier is seen here as the mechanism through which consumers adapt their spending to the increase in total income caused by the investment expenditure. As investment is made, consumers' income increases by the value of the investment, but it is initially entirely saving, output non-available for consumption. In trying to dispose of the excess saving, consumers create new consumption demands, stimulating the production of additional consumption goods and raising somebody else's income, who will react in the same way, and so on, until total income has increased to the level compatible with the propensity to save of consumers.

<sup>11</sup> One would recognize the similarity between this idea and the Laidler/Goodhart model of money demand.

<sup>12</sup> "A low enough long-term rate of interest cannot be achieved if we allow it to be believed that better terms will be obtainable from time to time by those who keep their resources liquid. The long-term rate of interest must be kept *continuously* as near as possible to what we believe to be the long-term optimum". (CWJMK 21, p. 389)

<sup>13</sup> In fact, the financial system must also be prepared to meet other demands, connected, for instance, with the realization of durable consumption expenditures or the provision of short-term credit for keeping inventories in retail trades etc. In any case, its main function in a *monetary production economy* is related with financing production and investment. On the concept of a monetary production economy, see Carvalho (1992), ch.3.

<sup>14</sup> "(...) I should guess that a properly run community equipped with modern technical resources, of which the the population is not increasing rapidly, ought to be able to bring down the marginal efficiency of capital in equilibrium approximately to zero *within a single generation*; so that we should attain the conditions of a *quasi-stationary* community where change and progress would result only from changes in technique, taste, population and institutions, (...)" (Keynes, 1964, pp. 220/1)

<sup>15</sup> Of course, whether or not banks will actually create the necessary deposits, it depends on their own policies as to how to use the resources at their disposal while preserving the liquidity of their balance sheets. As to Keynes's own discussion of banking policies to combine profitability and safety, see CWJMK VI (A Treatise on Money, v. 2), ch. 25.

<sup>16</sup> Alternatively, the intermediary could act as a *broker*, for a fee.

<sup>17</sup> Keynes had already pointed out in the *Treatise* that inflationary (or deflationary) movements could take place without changes in the total quantity of money if the industrial circulation grew (was reduced) at the expense (to the benefit) of the financial circulation. The absorption by speculators of new securities destined to support investment expenditures would constitute one kind of such a transfer of money from one circulation into another.

<sup>18</sup> See, for instance, Edmister (1986), Baer and Mote (1992) and the papers collected in Havrilesky and Schweitzer (1983).

<sup>19</sup> Segmented systems can develop institutions to operate in the *capital markets* or in the provision of different classes of *credit* (Cf. Zysman, 1983). The US financial system would be the most extreme case of a structure organized in terms of capital markets. The Japanese financial structure is also segmented but the provision of credit is the main financial activity instead of the direct finance that characterize capital market systems. A very good guide on the Japanese financial structure, at least how it was organized until the deregulation changes in the 90s, is Suzuki (1986). See also Cargill and Royama (1992).

<sup>20</sup> The US-type of financial system, based on segmentation, institutional specialization and with a prominent role to direct finance was the object of authors such as Davidson and Minsky. Davidson has presented, in his many works about this subject, a stylized description of how a financial system with the characteristics just listed works, with special emphasis on the role of commercial and investment banks. See, for instance, Davidson (1978) and (1986). Davidson (1982, pp. 35/7) distinguishes between construction funds finance and investment funding, concepts close to the notions of finance and funding presented here and emphasizes that "finance is primarily bookkeeping entries and does not, in itself, use up any resources (...)" (p. 44). Minsky, on the other hand, has explored the situations resulting from the possibilities of mismatch between assets and liabilities both of investors and of financial intermediaries. These possibilities arise from the circumstances in which complete funding of short-term debts is not available. They are the foundations of the conception of financial fragility. See, for instance, Minsky (1975) and (1986).

<sup>21</sup> On the universal bank system, one can consult, besides Kregel (1992) and Francke and Hudson (1984), Pozdena and Alexander (1992) for the case of Germany; Boissieu (1990) for France; and the case studies of France and Switzerland in Kaufman (1992).

<sup>22</sup> As noted by The Economist, "the foreign-exchange market was the first to globalise in the mid-1970s as controls were lifted and new technology created new opportunities for arbitrage; it is the biggest and still the only truly global financial market." ((10/07/1995, A Survey of the World Economy, p. 9)

<sup>23</sup> The characterization of changes and innovations in financial markets that follows is taken mainly from BIS (1986), *The*

*Economist's* special supplements on international banking (04/30/1993 and 04/30/1994) and on the world economy (10/07/1995), *Euromoney* (several issues), and the BIS quarterly report on *International Banking and Financial Market Developments* (several issues).

<sup>24</sup> See the statement of D. Komansky, of Merrill Lynch, in *Euromoney*, September 1995, p. 75.

<sup>25</sup> *The Economist*, December 02, 1995.

<sup>26</sup> The already classical discussion of the costs and requirements to organize secondary markets to give liquidity to assets is found in Kaldor (1980) and Davidson (1978). This discussion is also made by this author in Carvalho (1992).

<sup>27</sup> A full discussion of the relative merits of exchange-based and OTC derivatives is found in UNCTAD (1995).

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