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firms: the role of banks

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## **The economics of financing firms: the role of banks.**

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### **Abstract**

**The purpose of this paper is to highlight the fact that the asymmetric information approach does not constitute the only theoretical framework which gives prominence to the issue of firm financing; a meaningful theory could be elaborated on the basis of the works of Keynes and Schumpeter.**

## **Introduction**

Up to a few years ago, economic theory did not pay any attention to the topic of firm financing, that is, the mechanisms through which firms procure the means of payment necessary to carry out their investment decisions. This lack of interest was common to the two principal macroeconomic theories, the Keynesian theory and the monetarist one. Both were presented through models identifying the monetary sector solely with the money market.

The Keynesian theory supported the thesis of the non-neutrality of money by using more or less sophisticated versions of the IS-LM model, according to which investment decisions depend only on the interest rate whose level is determined by the money market equilibrium. The implicit hypothesis in these models is that firms are always able to obtain the liquidity necessary to carry out the desired investments. This approach found important theoretical support in the Modigliani-Miller theorem that shows that a firm's investment decisions are independent of the choice of the form of financing. The theorem shows that the cost of the capital, i.e. the rate of return that conditions the firm's investment decisions, is independent of the decision regarding the source of financing, whether this be self-financing, a new share issue or indebtedness. For the firm, therefore, the choice between these forms of financing becomes indifferent and, for economic theory, firm financing becomes an issue of little importance.

The monetarist theory motivates the irrelevance of the firm financing issue by stating that it is not possible to attribute to the credit market a role which is distinct from that played in the real sector, inasmuch as the credit market coincides with the real sector. This theory separates the money market from the credit market; Friedman e Schwartz (1982) assert that the two markets are characterised by different prices: the price of money corresponds to the quantity of goods that can be purchased with a unit of money, thus it is equal to the inverse of the price level, while the price of credit is the interest rate. Consequently, a disequilibrium between money supply and demand will be eliminated by the variation in the price of money and hence of the general price levels, while an imbalance between credit supply and demand will be eliminated by the variation in the interest rate. This distinction reflects the conclusions of the quantity theory of money according to which the imbalance between money demand and supply influences the level of the aggregate demand and thus the price level. In the case of the credit market, however, any demand and supply disequilibria will have no effect on the aggregate demand and on the price level. The absence of a link between the quantity of

credit and the aggregate demand level is due to the fact that the credit demand and supply derive from real decisions: the credit supply is generated by saving decisions while the credit demand reflects investment decisions. The credit market coincides with the real sector of the economy, so it is pointless to study the relation between the credit market and the real sector.<sup>1</sup> To leave aside the credit market means also to overlook the financial intermediaries, whose essential role is to facilitate the transfer of resources from savers to firms. We can apply Mill's statement about money to financial intermediaries:

“There cannot be intrinsically a more insignificant thing, in the economy of society, than money; except in the character of a contrivance for sparing time and labour. It is a machine for doing quickly and commodiously, what would be done, though less quickly and commodiously, without it: and like many other kinds of machinery, it only exerts a distinct and independent influence of its own when it gets out of order.. .”<sup>2</sup>

The intermediaries are considered a mechanism that makes it possible to do “quickly and commodiously” what could be done even in their absence.

This situation has changed in recent years thanks to the development of a theoretical approach that has applied the conclusions of information economics to the analysis of the working of the financial markets and the role of financial intermediaries. The objective of this paper is to highlight the fact that the asymmetric information approach does not constitute the only theoretical framework which gives prominence to the issue of firm finance; a meaningful theory could be elaborated on the basis of the works of Keynes and Schumpeter. The aim of this paper is to highlight the most significant differences between these two approaches.

The paper is divided into three parts. In the first section, the asymmetric information (AI) approach is presented, and, in the second, the Keynes-Schumpeter approach is described; in the conclusion, the implications deriving from these two different analysis perspectives of firm financing are set out.

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<sup>1</sup> Mc Callum (1989, pp. 29-30) states that the decision to overlook the credit market “... rests basically on the fact that in making their borrowing and lending decisions, rational households (and firms) are fundamentally concerned with goods and services consumed or provided at various points in time. They are basically concerned, that is, with choices involving consumption and labor supply in the present and in the future. But such choices must satisfy budget constraints and thus are precisely equivalent to decisions about borrowing and lending- that is, supply and demand choices for financial assets. ... Consequently there is no need to consider *both* types of decisions explicitly. ... it is seriously misleading to discuss issues in terms of possible connections between ‘the financial and real sectors of the economy’, to use a phrase that appears occasionally in the literature on monetary policy. The phrase is misleading because it fails to recognise that the financial sector *is* a real sector.”

## 1. The asymmetric information approach

This approach abandons the hypothesis of perfect markets on which the neoclassical theorems on the irrelevance of money and the financial variables were founded. The capital market is significantly different in one respect from the other markets in which a simultaneous exchange between goods and money takes place; in the capital market, a given amount of money is exchanged for the promise of receiving a greater amount of money in the future. The temporal dimension of the credit contract leads the creditors to gather information in order to evaluate the ability of debtors to pay back the loan. Two types of situations can be distinguished: a) in the first, characterised by symmetric information, debtors and creditors have the same access to all the information available, b) in the second, characterised by asymmetric information, the creditors do not have all the information available to the debtors. The presence of information asymmetries in the capital market has two important consequences: a) in the first place, it eliminates the assumption of perfect substitutability between the different sources of firm financing. In the presence of asymmetric information, the Modigliani – Miller theory is no longer valid and the firms are not indifferent as regards the choice of the source of financing. The problem of the choice of the optimal financial structure, that is of the financial structure that allows the information costs to be minimized, becomes important; b) secondly, it provides a justification for the presence of financial intermediaries, and, in particular, of the banks, who specialise in information gathering.

The first result obtained by the AI approach is to show that the presence of AI renders the Modigliani-Miller theorem inapplicable. If the potential creditors have less information than the entrepreneur who plans to carry out a new investment project, then it is not indifferent for the firm to choose among self-financing, debt or a new share issue.

In the presence of asymmetric information the firms have to address the problem of choosing the optimal financial structure, i.e. the financial structure that makes it possible to minimize the information costs. The most well-known response is the ‘pecking order theory’,<sup>3</sup> whose conclusions can be summarised in the following points: a) in the presence of asymmetric information, firms prefer self-financing over external financing; b) if self-financing proves insufficient to fund the planned investment, firms prefer to get into debt

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<sup>2</sup> Quoted in M.Friedman (1969).

<sup>3</sup> See: Myers (1984; 2001); Myers and Mayluf (1984).

rather than to issue new equity. These conclusions are obtained by applying to the capital market the results of the work of Akerlof (1970). In Akerlof's model the potential used car buyers are not able to recognise the quality of the cars; in the case of the capital market, it is assumed that the potential financiers know only the expected return of the investment project that a single firm intends to carry out, while the single firm knows the actual return of its project. If it is assumed that there are many firms planning to carry out investment projects, and that every project has the same expected rate of return, it can be shown that the issue of new shares would be a very costly form of financing for the best firms. They would, in fact, have to issue shares on the same conditions as other firms so the potential share subscribers would not be able to distinguish between the strong and weak investment projects. The best firms would thus prefer to finance themselves through debt; in this situation, the worst firms have to follow the example of the best ones if they want to avoid being identified by the market.

The supporters of the AI approach recognise that the 'pecking order theory' is not generally valid; indeed, there are situations of asymmetric information in which firms may not be able to finance themselves through debt and are therefore forced to issue shares. This happens in particular when there is a potential conflict of interest between the creditors and the entrepreneur, who, once he has obtained the financing, could decide to carry out a riskier project than the one for which he obtained the financing, thus passing the risk onto the creditors.<sup>4</sup> The first conclusion that can be drawn is that the choice of the financial structure depends on the type of asymmetric information which characterises the firm.

The second result obtained from using the asymmetric information approach is that it provides a convincing theory of financial intermediaries according to which their function is to reduce the costs associated with asymmetric information. The objective of a financial intermediation theory is that it provides a justification for the existence of financial intermediaries. The theory which characterises the AI approach is elaborated by starting from the observation that the presence of debtors and creditors is the necessary premise to justify the presence of financial intermediaries. The recourse to financial intermediaries entails a cost for the creditors and debtors; for this reason, the theory should explain what are the services provided by the financial intermediaries which compensate for the costs of intermediation.<sup>5</sup>

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<sup>4</sup> See for example: Gompers (1995); Berger and Udell (1998); Myers (2001); Carpenter and Petersen (2002).

<sup>5</sup> "... it is useful to observe that, in principle, intermediate finance has one disadvantage: the chain of transactions between the firm and the final investor is longer, and *ceteris paribus*, an increase in the length of the chain of transactions may be taken to entail an increase in transactions costs. Any proposition that intermediated

The presence of asymmetric information allows us to formulate a good answer: the services offered by the intermediaries is to gather information. Intermediaries play the same role in the credit market as the merchants play in Akerlof's used car market. Akerlof (1970) emphasized that the presence of asymmetric information stimulates the creation of agents whose purpose is to reduce the information costs; he considered, in particular, the activity of merchants that specialise in evaluating the quality of the goods exchanged. The role played by financial intermediaries can be illustrated using the distinction between inside debt and outside debt:

“ Inside debt is defined as a contract where the debtholder gets access to information from an organization's decision process not otherwise publicly available... Bank loans are inside debt, as are the other types of debt commonly classified as private placements. In contrast, outside debt is defined as publicly traded debt where the debtholder relies on publicly available information generated by the organization or by information purchased by the organization (for example, independent audits and bond ratings)”<sup>6</sup>

The characteristic of intermediaries is to provide finance through inside debt contracts stipulated on the basis of information not publicly available, which is obtained in virtue of the close relation with the debtors. The intermediaries' activities typically take place inside the private debt and equity markets in which the financing is provided by means of complex contracts whose characteristics are defined on the basis of information not publicly available.

The AI approach provides important elements that regard: i) the relationship that is created between the intermediaries and the firms; ii) the nature of the information collected by the financial intermediaries iii) the characteristics of the financial intermediaries. Many studies highlight the importance of the creation of a lasting relationship over time, which can lead to the application of more advantageous financing conditions for the firms.<sup>7</sup>

The possibility of creating a close relationship between the intermediaries and the firms implies a physical proximity between these agents. Lasting relations are thus a characteristic element of the relationship between small and medium firms and local banks, which collect information not only because of their relation with the debtor firm, but also on account of their relations with the other components of the local economy such as clients or suppliers of

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finance is more advantageous than direct finance must therefore be based on a view that the presumed gains from intermediation are more than enough to compensate for the increased transactions costs.” Hellwig 1991, p. 42.

<sup>6</sup> Fama (1985, p. 277).

<sup>7</sup> As Petersen e Rajan (1994, p. 5) observe:“... through close and continued interaction, a firm may provide a lender with sufficient information about, and a voice in, the firm's affairs so as to lower the cost and increase the availability of credit. We term this interaction a relationship.” See also: Berger and Udell (1995, 2002); Meyer (1998); Cole (1998); Gorton and Winton (2002).

the debtor firm.<sup>8</sup> A lasting relationship allows the intermediary to extend the financing over time, and to condition future financing on the basis of the information available about the behaviour of the firm and the evolution of the investment project.<sup>9</sup>

The information gathered by the financial intermediaries through lasting relationships with the firms is defined as ‘soft information’.<sup>10</sup> This information differs from ‘hard information’ relating to financial statements, payments to suppliers, proceeds taken in; this type of information is easy to quantify, verify and to pass on.

The asymmetric information approach distinguishes between two types of intermediaries: the bank intermediaries and the non-bank intermediaries.<sup>11</sup> The most important example of non-bank financial intermediaries are venture capitalists.<sup>12</sup> The venture capitalists finance the firms by underwriting shares, counting more on the possible gain in capital account to be obtained by the sale of shares rather than on the dividends. Banks and venture capitalists finance firms that have different characteristics; we can identify various factors that render bank financing difficult for some firms. In the first place, we can cite the problems of moral hazard which arise when there is a potential conflict of interest between the firm and the debtor; these problems make the access to bank credit difficult for those firms that do not possess businesses that can be given as collateral to the banks.<sup>13</sup> Moreover, bank credit does not constitute a very suitable instrument for financing the particularly risky investment projects which, if successful, could yield high returns. Indeed, in these cases, the banks would have to apply excessively high interest rates, above the limits that are set by law against

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<sup>8</sup> See: Berger and Udell (2002).

<sup>9</sup>Stulz (2001, p. 153) notes that: “The solution to finance the entrepreneur’s project generally involves staged financing obtained from financial intermediaries such as banks, banks substitutes, and possibly venture capitalists. Banks effectively provide staged financing. They do so in the form of loans that they renew and expand as the entrepreneur makes his case for financing more compelling.” See also: Gompers (1995); Bergemann and Hege (1998); Fenn and Liang (1998); Mason and Harrison (2001).

<sup>10</sup> “Relationship information is often ‘soft’ data, such as the information about the character and reliability of firm’s owner, and may be difficult to quantify, verify and communicate...”Berger and Udell (2002, p. 32); see also: Petersen and Rajan (2002).

<sup>11</sup> The characteristics of bank intermediaries are defined by Gorton and Winton (2002, p. 2) thus: “By bank like financial intermediaries we mean firms with the following characteristics: 1) they borrow from one group of agents and lend to another group of agents; 2) the borrowing and lending groups are large, suggesting diversification on each side of the balance sheet; 3) the claims issued to borrowers and to lenders have different state contingent payoffs.”

<sup>12</sup> “Venture capitalists perform the quintessential functions of financial intermediaries, taking funds from a group of investors and redeploying those funds by investing in informationally opaque issuers. In addition to screening, contracting, and monitoring, venture capitalists also determine the time and form of investment exit.”Berger and Udell (1998, p. 632).

<sup>13</sup> “Collateral and guarantees are powerful tools that allow financial institutions to offer credit on favourable terms to small businesses whose informational opacity might otherwise result in either credit rationing or the extension of credit only on unfavourable terms.” Berger and Udell (1995, p. 639).

usury, and which, if they could be applied, would constitute an intolerable burden for firms.<sup>14</sup> These considerations lead us to conclude that the ideal clients of venture capitalists are the firms that intend to carry out high return risky projects, but which do not have sufficient collateral to offer the banks. They are essentially small and medium sized firms that operate in the most innovative sectors.<sup>15</sup>

## 2. The Keynes-Schumpeter approach

It is possible to specify a theoretical approach which is alternative to the one based on the presence of asymmetric information, an approach that can be defined on the basis of the theories of both Keynes and Schumpeter. The attempt at elaborating a Keynes-Schumpeter approach might seem strange for at least two reasons. In the first place, we should recall that Schumpeter was very critical of the *General Theory* and of Keynesian policies. Schumpeter published an extremely negative review of the *General Theory* in which he criticised the static structure of Keynes' analysis based on the hypothesis of the existence of time-invariant production functions, which allowed Keynes to assert the existence of a strict relationship between variations of production and of employment. Schumpeter believed that a static theory was wholly unsuitable to describe how a modern capitalistic economy works.<sup>16</sup>

The second reason for some perplexity on the feasibility of a Keynes-Schumpeter approach is the differences between their respective monetary theories. In fact, although both maintain that the introduction of a fiat money radically modifies the structure of the economy, the two theories justify money non-neutrality by using different arguments. In the *General Theory* the presence of a fiat money is the necessary element that justifies the existence of

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<sup>14</sup> See: Gompers (1995), Carpenter e Petersen (2002).

<sup>15</sup> "... for high-tech firms, the limited collateral value of assets, together with adverse selection, moral hazard, and financial distress should cause the marginal cost of debt to increase rapidly with leverage." Carpenter and Petersen (2002, p. 59). See: Gompers (1995); Fenn and Liang (2000); Allen and Gale (1999); Jeng and Wells (2000); Freel (2000).

<sup>16</sup> "...reasoning on the assumption that variations in output are uniquely related to variations in employment imposes the further assumption that all production functions remain invariant. Now the outstanding feature of capitalism is that they do not but that, on the contrary, they are being incessantly revolutioned. The capitalism process is essentially a process of change of the type which is being assumed away in this book, and all its characteristic phenomena and problems arise from the fact that it is such a process. A theory that postulates invariance of production functions may, if correct in itself, be still of some use to the theorists, But it is the theory of another world and out of all contact with modern industrial fact, unemployment included. No

involuntary unemployment equilibria. Keynes defines the essential properties of fiat money which are: a) zero elasticity of production; b) zero elasticity of substitution between liquidity assets (including money) and reproducible goods. He uses the first term to refer to the fact that money is not just any good which can be produced by anyone who decides to do so by means of labour. By the second expression, Keynes means that an increase in the demand for money does not translate into the demand for money substitutes whose production requires labour. In a world in which money has these characteristics an increase in the demand for money causes a drop in the effective demand and thus a rise in unemployment, as the decision to accumulate money determines a level of aggregate demand that is insufficient to absorb all the production realized.<sup>17</sup> The money non-neutrality theory which emerges from the *General Theory* has two characteristics: a) it focuses on the money market rather than the credit market; b) it gives prominence to the stock of value function of money.

Schumpeter's analysis has characteristics which are different from Keynes': a) it is focussed on the credit market and not on the money market; b) it gives importance to the means of payment function of money and not to its stock of value function. Schumpeter highlights the role of money in the evolution of the capitalist system which is stimulated by innovations financed through the creation of bank money. It is an evolution that follows a cyclical pattern, in which recessions are generated by the effects of innovations on the pre-existing production structures. While Keynes considers the economic crises as a pathological phenomenon induced by effective demand fluctuations which are in turn made possible by the presence of a token money, Schumpeter considers economic crises as the inevitable consequences of the realisation of innovations.<sup>18</sup>

I believe that these contrasts in the analyses of these two economists can be reconciled. First of all, I think that Schumpeter's critique of the *General Theory* should be considered as well founded; Keynes' analysis is focused on the short term and highlights the effects of investment decisions on the level of aggregate demand, but it neglects the consequences of investment decisions on the overall production capacity of the economy. This limit has been

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interpretation of modern vicissitudes, 'poverty in plenty' and the rest, can be derived from it.'...'(Schumpeter 1936, pp. 354-355)

<sup>17</sup>“Unemployment develops, that is to say, because people want the moon; - men cannot be employed when the object of desire (i.e. money) is something which cannot be produced and the demand for which cannot be readily choked off. There is no remedy but to persuade the public that green cheese is practically the same thing and to have a green cheese factory (i.e. a central bank) under public control.” Keynes (1936, p. 235)

<sup>18</sup> Minsky (1986) emphasised the different reactions of Keynes and Schumpeter to the 1929-33 crisis.

acknowledged by other economists such as Kalecki (1971), Kaldor (1985), Hicks (1989). Hicks (1989, p. 3), for instance, points out that:

“... (Keynes) confined attention to the short-term consequences of changes, such as policy changes... A main way in which this shows up is in its concentration of attention on the employment-creating power of investment expenditure, *while it is occurring*. This will be much the same whether the expenditure is productive or unproductive. His ‘investment’ is just the use of current resources for purposes *other* than furthering the present or near-future output of consumption goods (or services). It will be just the same if it takes the form of building power-houses or of building palaces for king. Its effects on productivity in the longer run is left aside. That does need to be remembered, even if we abstain from thinking in terms of *long-run equilibrium*”

The first point that should characterise a Keynes-Schumpeter approach is the extension of the short term Keynesian theory by using Schumpeter’s view on the effects of innovations on the evolution of the economic system. By using this framework, the full employment hypothesis assumed by Schumpeter is obviously abandoned. Several economists have emphasised the desirability of integrating the Keynesian theory of income determination with Schumpeter’s theory of economic development.<sup>19</sup>

The second obstacle that has to be overcome concerns the differences on monetary theory. These differences are very important if one takes the *General Theory* as a reference point; in this work, in fact, Keynes completely overlooked the problem of how firms’ spending decisions are financed. It must nevertheless be noted that Keynes dealt with this issue in some works published between 1937 and 1939; in these works he does in fact, give importance to the credit market and the means of payment function of money.<sup>20</sup> It is therefore possible to elaborate a synthesis between the monetary theories of Keynes and Schumpeter by using the Keynes’ writings published after the *General Theory*.

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<sup>19</sup> Goodwin (1993, p. 83), referring to Keynes’ and Schumpeter’s theories, states: “By a judicious amalgam of the two approaches one should be able to arrive at a superior analysis”. Minsky (1986, p. 113) says that: “... further progress in understanding capitalism may very well depend upon integrating Schumpeter’s insights with regard to the dynamics of a capitalist process and the role of the innovative entrepreneurs into an analytical framework that in its essential properties is Keynesian. Capitalism has exhibited both fragility and resiliency over the century since the death of Marx and the birth of Keynes and Schumpeter. Keynes’ analytical structure enables us to understand and even cope with the fragility of capitalism. Schumpeter’s vision of entrepreneurship helps us to understand the resilience of capitalism and in particular how policy reactions to slumps that reflect Keynesian insights lead to resilience and add new dimension to the fragility of financial structures.” See also: Morishima (1992).

<sup>20</sup> Many authors emphasise the importance of these works; Minsky (1975, 1980, 1982); Kaldor and Trevithick (1981); Chick (1986) highlight that the presence of banks and of the credit market is a key element in determining the validity of the Keynesian theory of income determination. See also: Graziani (1991, 1996); Rochon (1999).

## 2.1 The nature of the credit market

Both Keynes and Schumpeter observe that the credit market becomes particularly important as the use of fiat money spreads; the credit market is the instrument through which fiat money is made available to operators who plan to carry out a spending decision. They both maintain that the spread of fiat money profoundly changed the characteristics of the economic system.

Keynes (1933a) underlines this point by distinguishing between a *real exchange economy* and a *monetary economy*. He uses the first term to denote an economy in which money is just an instrument that makes it possible to reduce the costs of the exchange; the use of money does not change the structure of the economic system with respect to a barter economy. With the term *monetary economy*, Keynes refers to an economy in which the presence of fiat money radically changes the nature of the exchanges and the law of production. The spread of fiat money transforms an exchange economy characterised by full employment into a production economy in which the level of income and production are bound to fluctuate. The condition that guarantees full employment in a world where commodity money is used, is the fact that any individual can produce money in the same way in which he produces any other good. In fact, Keynes (1993b) observes that in a *gold standard* system, fluctuations in the effective demand do not create permanent unemployment as the unemployed workers can set about producing the money-good, that is, gold.<sup>21</sup> When fiat money is used this is no longer possible: token money is not a good that can be produced by unemployed workers. The production of fiat money is the prerogative of particular agents; Keynes concentrates the attention on the banks and on bank money.

Using fiat money as bank money changes the nature of the exchanges with respect to a barter economy: when bank money is used, it is not necessary to own goods to buy other goods, but it is necessary to have money, and to obtain money it is necessary to satisfy the criteria applied by the banks for granting loans. The credit market is the instrument through which banks distribute money; to describe this market it is necessary to explain who are the

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<sup>21</sup> "In actual fact under a gold standard gold can be produced, and in a slump there will be some diversion of employment towards gold mining. If, indeed, it were easily practicable to divert output towards gold on a sufficient scale for the value of the increased current output of gold to make good the deficiency in expenditure in other forms of current output, unemployment could not occur; except in the transitional period before the turn-over to increased gold-production could be completed." (J.M.Keynes 1993b, pp. 85-86).

agents that demand credit. Keynes deals with the credit market in some works published between 1937 and 1939 to reply to criticism of *General Theory*, and, in particular, to Ohlin's criticism of his interest rate theory

Ohlin compares with the Keynesian interest rate theory a new version of the loanable funds theory, according to which the interest rate is determined by the credit demand which depends on *ex-ante* investments, i.e. those planned by the firms, and by the supply of credit which instead depends on *ex-ante* savings. Keynes (1937) considers the concept of *ex-ante* investment important because it shows that the firms, to carry out their spending decisions, must obtain liquidity and, thus, that a lack of liquidity can impede the firms' investment decisions. At the same time, Keynes criticises Ohlin, noting that the supply of liquidity does not depend on the saving decisions, but on the banks' decisions. In fact, Keynes observes that the firms that plan the investments need liquidity that cannot be provided by *ex-ante* savers.<sup>22</sup> Savings are a consequence of the investment decisions carried out by the firms thanks to the money created by banks.<sup>23</sup>

From Keynes's analysis there emerges a theory of credit which is completely different to the one which characterises the asymmetric information approach. According to the latter, the object of the credit is resources which have been saved; the existence of savers and investors is a necessary condition for a credit market, while the presence of banks is a consequence of the existence of asymmetric information. The use of fiat money has no effect on the nature of the credit market; both in the case in which commodity money is used and in the case in which token money is used, the object of the credit is the resources set aside by savers. Keynes instead maintains that: a) the object of credit is the money created by the banks and not by saving; b) the credit market is based on the relationship between banks and firms and not on the saver-investor relation.

Like Keynes, Schumpeter states that the presence of a fiat money gives the economy a completely different structure with respect to that of a barter economy. Schumpeter (1912) emphasises this point by distinguishing between a pure exchange economy and a capitalist economy. A pure exchange economy is one based on private property, on the division of

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<sup>22</sup> "... The ex-ante saver has no cash, but it is cash which the ex-ante investor requires. ... Surely nothing is more certain than that the credit or 'finance' required by ex-ante investment is not mainly supplied by ex-ante saving." J.M.Keynes (1937c, p. 664-5).

<sup>23</sup> "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." J.M.Keynes (1939, p. 572). For a more detailed analysis see: Bertocco (2002).

labour and on free competition; an economy that always tends to replicate itself unchangingly, or that is in any case subject to very gradual changes triggered by extra-social factors like natural conditions, or by extra-economic social factors like wars, or by consumer tastes; it is an economy in which the production decisions are influenced by saver preferences and in which the principle of consumer sovereignty holds. In a pure exchange economy, money is just an instrument that reduces the transaction costs; its presence does not alter the structure of the economic system. A capitalist economy, on the other hand, is an economy characterised by a continuous process of change triggered by internal factors.

Schumpeter emphasizes that the traditional theory is capable of describing only a pure exchange economy;<sup>24</sup> the traditional theory is essentially a static theory which can describe the effects of exogenous changes on the characteristics of the equilibrium, or the effects of modifications of consumers preferences,<sup>25</sup> but it is not capable of describing how the system evolves as a consequence of changes due to internal factors.<sup>26</sup> Schumpeter's aim is to elaborate a theory which can explain the continuous evolution process that is typical of the capitalistic economy and that is generated by internal factors. This process is characterised by two elements; first, the changes taking place in production as a consequence of the innovations spawned by entrepreneurs; these innovations might consist in the realisation of a new product, in the adoption of a new production method, or in the opening of new markets. Schumpeter points out that the exogenous source of change is not related to consumers' preferences, pertaining instead to the production process:

“Railroads have not emerged because any consumers took the initiative in displaying an effective demand for their service in preference to the services of mail coaches. Nor did the consumers display any such initiative wish to have electronic lamps or rayon stocking, or to travel by motorcar or airplane, or to listen to radios, or to chew gum. The great majority of changes in commodities consumed has been forced by producers on consumers who, more often than not, have resisted the change and have had to be educated up by elaborate psychotechnics of advertising.”<sup>27</sup>

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<sup>24</sup>“...we do not attack traditional theory, Walrasian or Marshallian, on its ground... We hold, however, that this model covers less ground than is commonly supposed and that the whole economic process cannot be adequately described by it or in terms of (secondary) deviations from it. This is satisfactory only if the process to be analysed is either stationary or ‘steadily growing’” Schumpeter (1939, p. 72).

<sup>25</sup> “If the change occurs in the non-social data (natural conditions) or in non-economic social data (here belong the effects of war, changes in commercial, social, or economic policy), or in consumers' tastes, then to this extent no fundamental overhaul of the theoretical tools seems to be required.” Schumpeter (1912, p. 62).

<sup>26</sup>“... the tools (of the traditional theory) only fail... where economic life itself changes its own data by fits and starts. The building of a railway may serve as an example... ‘static’ analysis is not only unable to predict the consequences of discontinuous changes in the traditional way of doing things; it can neither explain the occurrence of such productive revolutions nor the phenomena which accompany them. It can only investigate the new equilibrium position after the changes have occurred.” Schumpeter (1912, p 62).

<sup>27</sup> Schumpeter (1939, p 47).

The second key element of the process of economic development is the creation of money by banks through credit; Schumpeter states that credit:

“... is the characteristic method of the capitalist type of society- and important enough to serve as its *differentia specifica* – for forcing the economic system into new channels, for putting its means at the service of new ends... it is as clear *a priori* as it is established historically that credit is primarily necessary to new combinations...”<sup>28</sup>

The essential role of credit is due to the presence of three elements: 1) the fact that innovations are carried out especially by new men, who do not own the factors of production; 2) the full employment of productive resources; 3) private ownership of the factors of production. Schumpeter argues that if innovations were realised by existing firms, credit would not be necessary, since, in order to realise the innovations, the entrepreneur would use the production factors already available. Credit becomes a necessary factor for development when innovations are made by new entrepreneurs who do not own means of production.<sup>29</sup> He justifies this hypothesis by noting that the introduction of an innovation requires decisions which are completely different from those connected to economic activity in a pure exchange economy; for this reason, innovations will not normally be brought in by the persons who manage the existing firms.<sup>30</sup> In order to underline this point, Schumpeter defines as entrepreneurs only those economic agents who introduce innovations.<sup>31</sup> The second factor that makes the role of credit very important is the full employment hypothesis.<sup>32</sup> Schumpeter

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<sup>28</sup> Schumpeter (1912, pp. 69-70). In order to emphasise the strict relationship between innovation and credit, Schumpeter states: “...the entrepreneur... does need credit...to be able to carry out his new combinations, to *become* an entrepreneur...He can only become an entrepreneur by previously becoming a debtor.” Schumpeter (1912, p. 102).

<sup>29</sup>“... it is not essential... that the new combinations should be carried out by the same people who control the productive or commercial process which is to be displaced by the new. On the contrary, new combinations are, as a rule, embodied, as it were, in new firms which generally do not arise out of the old ones but start producing beside them ... in general, it is not the owner of stage-coaches who builds railways.” Schumpeter (1912, p 66).

<sup>30</sup>“While in the accustomed channels his own ability and experience suffice for the normal individual, when confronted with innovations he needs guidance. While he swims with the stream in the circular flow which is familiar to him, he swims against the stream if he wishes to change its channel. What was formerly a help becomes a hindrance. What was a familiar datum becomes an unknown. Where the boundaries of routine stop, many people can go no further, and the rest can only do so in a high variable manner... Therefore... the carrying out of new combinations is a special function, and the privilege of a type of people who are much less numerous than all those who have the ‘objective’ possibility of doing it.” Schumpeter (1912, pp.79-81)

<sup>31</sup>“The carrying out of new combinations we call ‘enterprise’; the individuals whose function it is to carry them out we call ‘entrepreneurs’”. Schumpeter (1912, p. 74).

<sup>32</sup>“...whenever we are concerned with fundamental principles, we must never assume that the carrying out of new combinations takes place by employing means of production which happen to be unused. In practical life, this is very often the case. There are always unemployed workmen, unsold raw materials, unused productive capacity, and so forth. ... but great unemployment is only the consequence of non-economic events –as for example the World War - or precisely of the development which we are investigating. In neither of the two

stresses that the innovations are not realised by using unused production resources, but rather by using the existing resources in a different way. Credit is the instrument that makes it possible to realise innovations; banks, through the creation of bank money, transfer to the innovators-entrepreneurs the purchasing power which is necessary to divert the resources from their traditional uses:

“ The capitalistic credit system has grown out and thrived on the financing of new combinations in all countries... There can be no stumblingblock in our speaking of receiving credit in ‘money or money substitutes’. We certainly do not assert that one can produce with coins, notes, or bank balances, and do not deny that services of labor, raw materials, and tools are the things wanted. We are only speaking of a method of procuring them.”<sup>33</sup>

By creating money to finance the innovators-entrepreneurs, the banks alter the distribution of the ownership of the means of production.<sup>34</sup> The instrument which allows the ownership of the means of production to be transferred to the innovator entrepreneurs is the inflation triggered by the fact that the demand for means of production of the innovator-entrepreneurs is added to that of the already existing firms; this increase in the demand with respect to a constant supply of productive services causes an increase in the price of services which enables the innovator to divert resources from their current allocation.<sup>35</sup> With inflation it is possible to generate:

“...a shift of purchasing power across individuals ... a transfer of means of production in favour of those individuals to whom credit is granted via creation of new money... it is hence possible for new individuals and new programs, which would otherwise remain in the background, to emerge. In this way the obstacles created by private ownership to those who do not already own means of production are eliminated. In the banking system a central economic planning bureau is thus created, whose directions render the necessary means of production available to new individuals.... In the creation of this money (the bank money) lies the essence of modern credit . It is the specifically capitalist method of sustaining economic development. Unlike

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cases its existence play a fundamental role in the explanation, and it cannot occur in a well balanced circular flow from which we start.” Schumpeter 1912, p. 67. On this point see: Oackley (1990).

<sup>33</sup> Schumpeter (1912, p. 70). He re-affirms the strict relationship between innovations and credit by noting that the fundamental problem of development is: “... of detaching productive means (already employed somewhere) from the circular flow and allotting them to new combinations. This is done by credit, by means of which one who wishes to carry out new combinations outbids the producers in the circular flow in the market for the required means of production. And although the meaning and object of this process lies in a movement of goods from their old towards new employments, it cannot be described entirely in terms of goods without overlooking something essential, which happens in the sphere of money and credit and upon which depends the explanation of important phenomena in the capitalist form of economic organisation...” Schumpeter (1912, p. 71).

<sup>34</sup>“Granting credit ... operates as an order on the economic system to accommodate itself to the purpose of the entrepreneur, as an order on the goods which he needs: it means entrusting him with productive forces... this function constitutes the keystone of the modern credit structure.” Schumpeter 1912, p. 107

<sup>35</sup> Schumpeter (1912)

what happens in a pure barter economy, this is the key function of money in a capitalist economy.”<sup>36</sup>

Ultimately, the fundamental role of credit described by Schumpeter depends on the fact that, in a capitalistic economy, the ownership of means of production is private. Schumpeter argues that in a socialist economy, the innovation process does not require the use of credit, given that in this system there is a planning authority which decides to use the production resources differently from the way they were previously used in order to achieve the innovations.<sup>37</sup> By highlighting that the innovations are brought in by using existing resources differently, Schumpeter maintains that innovations do not depend on the flows of saving and investment.<sup>38</sup> He also points out that the roles of money and credit in a capitalist economy are completely different from those in a pure exchange economy. In a pure exchange economy, money is only an instrument to facilitate trade, which is obtained in exchange for goods or services; it is a “... certificate for previous production”,<sup>39</sup> and its presence does not influence the structure of the economy.<sup>40</sup> Conversely, bank money does not embody any right to realised production, but it is purchasing power created by banks which allows innovators-entrepreneurs to use existing production resources even if they have never been involved in the production process.<sup>41</sup>

Schumpeter criticises the traditional theory for its hypothesis that the nature of the credit market is not determined by the presence of banks and of bank money. In his *History of Economic Theory* (1954, p.1113) he describes:

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<sup>36</sup> Schumpeter (1917, p.114). Translation of the Italian version contained in: J. Schumpeter, *Stato e Inflazione*. Saggi di Politica economica, Boringhieri Torino, 1983.

<sup>37</sup> In una economia socialista non esiste il problema di utilizzare il credito per finanziare la realizzazione di innovazioni poiché: “L’organo dirigente, infatti, un ministero dell’economia socialista, ad esempio, è in grado di indirizzare a nuovi impieghi le risorse produttive della società esattamente come le può indirizzare nuovamente agli impieghi precedenti.” Schumpeter (1912, p. 78).

<sup>38</sup> “That rudiment of a pure economic theory of development which is implied in the traditional doctrine of the formation of capital always refers merely to saving and to the investment of the small yearly increase attributable to it. In this it asserts nothing false, but it entirely overlooks much more essential things. The slow and continuous increase in time of the national supply of productive means and of savings is obviously an important factor in explaining the course of economic history though the century, but it is completely overshadowed by the fact that development consists primarily in employing existing resources in a different way, in doing new things with them, irrespective of whether those resources increase or not... Different methods of employment, and not saving and increases in the available quantity of labor, have changed the face of the economic world in the last fifty years.” Schumpeter (1912, p. 68).

<sup>39</sup> Schumpeter (1912, p.83).

<sup>40</sup> “... money only performs the function of a technical instrument, but adds nothing new to the phenomena. To employ a customary expression, we can say that money thus far represents only the cloak of the economics things and nothing essential is overlooked in abstracting from it.” Schumpeter (1912, pp. 51).

<sup>41</sup> “The creation of the purchasing power characterises, in principle, the method by which development is carried out in a system with private property and division of labor. By credit, entrepreneurs are given access to the social stream of goods before they have acquired the normal claim to it.” Schumpeter (1912, p. 107).

“... how a typical economist, writing around 1900, would have explained the subject of credit... He would have said something like this. In the (logical) beginning is money ... For brevity’s sake, let us think of gold coin only. Now the holders of this money, so far as they neither hoard it nor spend it on consumption, ‘invest’ it or, as we may also say, they ‘lend’ their ‘savings’ on the ‘supply capital’... And this is the fundamental fact about credit. Essentially, therefore, credit is quite independent of the existence or non-existence of banks and can be understood without any reference to them. If, as a further step in analysis, we do introduce them into the picture, the nature of the phenomenon remains unchanged. The public is still the true lender. Bankers are nothing but its agents, middlemen who do the actual lending on behalf of the public and whose existence is a mere matter of division of labour.”

In a capitalistic economy, banks do not lend purchasing power that has been given to them by savers, but rather they create substitutes of legal-tender money which have the same functions as legal-tender money.<sup>42</sup>

In Schumpeter’s view the main players in the credit market, therefore, are not the savers and the firms, but banks and firms:

“The kernel of the matter lies in the credit requirements of new enterprises. ... only one fundamental thing happens on the money market, to which everything else is accessory: on the demand side appear entrepreneurs and on the supply side producers of and dealers in purchasing power, viz. bankers, both with their staffs of agents and middlemen.”<sup>43</sup>

We can conclude that from the works of Keynes and Schumpeter a common credit theory emerges which is profoundly different from the mainstream monetary theory. According to the latter, the object of the credit is resources which have been saved; the existence of savers and investors is a necessary condition for a credit market, while the presence of banks is a consequence of the existence of asymmetric information. The use of fiat money has no effect on the nature of the credit market; both in the case in which commodity money is used and in the case in which token money is used, the object of the credit is the resources set aside by savers. Keynes and Schumpeter instead maintain that: a) the object of credit is the money

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<sup>42</sup> “... a deposit, though legally only a claim to legal-tender money, serves within very wide limits the same purposes that this money itself would serve. Banks do not, of course, ‘create’ legal-tender money and still less do they ‘create’ machines. They do however, something – it is perhaps easier to see this in the case of the issue of banknotes – which, in its effects, comes pretty near to creating legal-tender money and which may *lead* to the creation of ‘real capital’ that could not have been created without this practice... It is much more realistic to say that the banks ‘create credit’, that is, that they create deposits in their act of lending, than to say that they lend the deposits that have been entrusted to them.” Schumpeter (1954, p. 1114). The same concept can be found in Schumpeter (1912, p. 74) : “ The banker...is not so much primarily a middleman in the commodity ‘purchasing power’ as a *producer* of this commodity. ... He is essentially a phenomenon of development... He make possible the carrying out of new combinations, authorises people, in the name of society as it were, to form them. He is the ephor of the exchange economy.”

<sup>43</sup> Schumpeter (1912, 125).

created by the banks and not by saving; b) the credit market is based on the relationship between banks and firms and not on the saver-investor relation.

We have already argued in favour of an approach based on a synthesis which, on one hand, embraces the Keynesian theory of income and employment and, on the other hand, acknowledges the validity of Schumpeter's critique to the static structure of the *General Theory*. This critique can be overcome by recognising the two roles of investment decisions: component of autonomous demand and element through which the innovations are made. With respect to Schumpeter's analysis, in this framework we emphasise that innovations are introduced through firms' investment decisions rather than by a new use of existing productive resources on the part of new entrepreneurs.<sup>44</sup> This framework allows us to shed the full employment hypothesis used by Schumpeter to justify the relevance of bank money and credit. In order to analyse the dual role of investment decisions, it is necessary to develop a sequential theory capable of highlighting how investment decisions which are realized at a given time have effects on the level and the quality of productive capacity in subsequent periods, along the lines indicated by economists such Kalecki (1971) and Kaldor (1985).<sup>45</sup> In this theoretical scheme, bank money and the credit market take on a decisive role.

## 2.2 The monetary nature of capital.

Keynes and Schumpeter highlight that the diffusion of a fiat money radically changes the structure of the economic system. In order to highlight this point Keynes uses the distinction put forward by Marx between the sequence good-money-good (G-M-G'), which characterises a *real-exchange economy*, and the sequence money-good-money (M-G-M'), which instead characterises a monetary economy. He explains the meaning of this distinction by noting that:

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<sup>44</sup> Schumpeter's view, according to which innovations are introduced mainly by using existing productive resources in a new way, is based on the hypothesis that these resources can easily be used for different purposes. It seems more realistic to assume that realising innovations requires new production instruments and therefore new capital goods.

<sup>45</sup> Kaldor (1985, pp. 61-62) highlights the necessity to elaborate a theoretical model: "... that recognizes from the beginning that time is a continuing and irreversible process; that it is impossible to assume the constancy of anything *over* time, such as supply of labor or capital, the psychological preferences for commodities, the nature and number of commodities, or technical knowledge. All these things are in a continuous process of change but the forces that make for change are endogenous not exogenous to the system. The only truly exogenous factor is *whatever exists at a given moment of time*, as a heritage of the past... The heritage of the past is the one truly

“The classical theory supposes that the readiness of the entrepreneur to start up a productive process depends on the amount of value in terms of product which he expects to fall to his share; i.e. that only an expectation of more *product* for himself will induce him to offer more employment. But in an entrepreneur economy this is a wrong analysis of the nature of business calculation. An entrepreneur is interested, not in the amount of product, but in the amount of *money* which will fall to his share. He will increase his output if by so doing he expects to increase his money profit... The explanation of this is evident. The employment of factors of production to increase output involves the entrepreneur in the disbursement, not of product, but of money... He has the command of £ 100 (in hand or by borrowing), and he will use it if by so doing he expects, after deducting his variable costs including interest on the £ 100, to turn into more than £ 100. the only question before him is to choose, out of the various ways of employing £ 100, that way which will yield the largest profit in terms of money.”<sup>46</sup>

The goal of an entrepreneur in an entrepreneurial economy is not to produce goods, but to obtain a profit in monetary terms, i.e. a positive difference between monetary revenues and monetary costs. This is the same definition used by Schumpeter (1912, p. 128):

“Entrepreneurial profit is a surplus over costs. From the standpoint of the entrepreneur, it is the difference between receipts and outlay in a business...”

This apparently trivial definition has an important meaning that can be understood by specifying the concept of capital which emerges from the theory of these two great economists. Schumpeter’s definition reflects the importance that he assigns to bank money in the development process; in fact, he does not identify capital with the means of production,<sup>47</sup> but with the purchasing power which is made available to entrepreneurs in so that they can carry out their innovations:

“We shall define capital... as that sum of means of payments which is available at any moment for transference to entrepreneurs.”<sup>48</sup>

Also Keynes highlights the monetary nature of capital by criticising the traditional theory of the process of capital formation which considers capital as a stock of means of production generated by the accumulation of saving flows.<sup>49</sup> Keynes’s critique is based on the

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exogenous factor, and its influence will determine future events to an extent that varies *inversely* with the distance of the future period from the present.”

<sup>46</sup> Keynes (1933b, p. 82).

<sup>47</sup> “Capital is neither the whole nor a part of the means of production – original or produced. Nor is capital a stock of consumption goods.” Schumpeter (1912, p. 123).

<sup>48</sup> Schumpeter (1912, p. 122).

<sup>49</sup> Keynes points out that the traditional theory considers the process of capital formation as comprising three stages: “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 actual outlay of money for the acquisition of capital goods.” Keynes (1939, p. 570).

considerations contained in the reply to Ohlin: the source that finances firms' investments is not savings, i.e. the supply of resources not consumed by savers, but the money created by banks:

“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.”<sup>50</sup>

These consideration on the monetary nature of capital allow us to justify the monetary nature of profits which can not be considered as the compensation for a production input.<sup>51</sup> Moreover, Schumpeter points out that the level of profits cannot be determined in the precise way that incomes can be determined in a *pure exchange economy*.<sup>52</sup> Profit is not even the reward for bearing risk since normally the entrepreneur does not own the means of production, but he obtains them by getting into debt:

“The entrepreneur is never the risk bearer... The one who gives credit comes to grief if the undertaking fails... But even if the entrepreneur finance himself out of former profit... the risk falls on him as capitalist or as possessor of goods, not as entrepreneur. Risk-taking is in no case an element of the entrepreneurial function. Even though he may risk is reputation, the direct economic responsibility of failure never falls on him.”<sup>53</sup>

### 2.3 The dimension of uncertainty

The presence of bank money and the specification of the link between investment decisions and innovation allow us to justify the importance that the phenomenon of uncertainty assumes in Keynes's analysis. As is widely known, Keynes (1937a) states that the fundamental difference between his own theory and the classical one is the hypothesis introduced about the way the expectations regarding future results of economic decisions are specified. The classical theory assumes that it is possible to objectively represent these results

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<sup>50</sup> Keynes (1939, p. 572).

<sup>51</sup> Schumpeter (1939, p. 80) notes that: “... profit is a net gain, *i.e.* that is not absorbed by the value of any cost factor through a process of imputation”

<sup>52</sup> “the size of profit is not as definitely determined as the magnitude of incomes in the circular flow. In particular, it cannot be said of it, as of the elements of costs in the latter, that it just suffices to call forth precisely the ‘quantity of entrepreneurial services required’. Such a quantity, theoretically determinable, does not exist. And the total amount of profit actually obtained in a given time, as well as the profit realised by an individual entrepreneur, may be much greater than the necessary to call forth the entrepreneurial services which were actually operative.” Schumpeter (1912, p. 154).

by using tools of financial mathematics and probability theory. In contrast, Keynes assumes that there are no objective methods that allow the future results of investment decisions to be represented; these decisions are taken in conditions of uncertainty. We can observe that the phenomenon of uncertainty is linked to the continuous evolution of the economic system which prevents us from considering the past and the present as a reliable guide to predict the future consequences of investment decisions. Uncertainty is thus the fundamental characteristic of a continuously evolving economy which does not replicate itself in the same way; an economy in which investment decisions do not entail a mere increase in the production capacity, but imply a structural modification of the production system, the results of which cannot be objectively predicted.

Since the presence of fiat money is an essential element in a constantly evolving economy as a result of realised investment decisions, we can state that the extent of the uncertainty becomes relevant in an economy in which fiat money is used. The spread of bank money takes place simultaneously with the creation of a group of agents, the entrepreneurs, who use the finance received to carry out new production projects. The diffusion of a fiat money stimulates the development of an economy in which investment decisions become extremely relevant and in which the presence of uncertainty becomes an essential element. Keynes stresses that the phenomenon of uncertainty acquires particular significance in an economic system where investment decisions are of considerable importance.<sup>54</sup> It can furthermore be observed that when Schumpeter describes the behaviour of the innovator-entrepreneur, the views he expresses are similar to those of Keynes on the impossibility of predicting the effects of innovations on the basis of observations on the past.<sup>55</sup> Schumpeter (1912, pp. 84-85) notes that when the entrepreneur must evaluate the future results of an innovation:

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<sup>53</sup> Schumpeter (1912, p. 137).

<sup>54</sup> "The whole object of the accumulation of wealth is to produce results, or potential results, at a comparatively distant, and sometimes at an *indefinitely* distant, date. Thus the fact that our knowledge of the future is fluctuating, vague and uncertain, renders wealth a peculiarly unsuitable subject for the methods of the classical economic theory. This theory might work very well in a world in which economic goods were necessarily consumed within a short interval of their being produced. But it requires, I suggest, considerable amendment if it is to be applied to a world in which the accumulation of wealth for an indefinitely postponed future is an important factor; and the greater the proportionate part played by such wealth accumulation the more essential does such amendment become." Keynes (1937a, p. 113).

<sup>55</sup> "While in the accustomed circular flow every individual can act promptly and rationally because he is sure of his ground and is supported by the conduct, as adjusted to this circular flow, of all other individuals, who in turn expect the accustomed activity from him, he cannot simply do this when he is confronted by a new task. ... While he swims with the stream in the circular flow which is familiar to him, he swims against the stream if he wishes to change its channel. What was formerly a help becomes a hindrance. What was a familiar datum becomes an unknown. ... The assumption that conduct is prompt and rational is in all cases a fiction. But it proves to be sufficiently near to reality, if things have time to hammer logic unto men. ... outside of these limits

“...the individual is without those data for his decisions and those rules of conduct which are very accurately known to him within them. Of course he must still foresee and estimate on the basis of his experience. But many things must remain uncertain, still others are only ascertainable within wide limits, some can perhaps only be ‘guessed’. In particular this is true of those data which the individual strives to alter and those which he wants to create. ... Carrying out a new plan and acting according to a customary one are things as different as making a road and walking along it. ... As military action must be taken in a given strategic position even if all the data potentially procurable are not available, so also in economic life action must be taken without working out all the details of what is to be done. Here the success of everything depends upon intuition, the capacity of seeing things in a way which afterwards proves to be true, even though it cannot be established at the moment, and of grasping the essential fact, discarding the unessential, even though one can give no account of the principles by which this is done.”

## 2.4 Money and credit in the Keynes-Schumpeter approach

To complete the description of the Keynes-Schumpeter approach it is necessary to specify the relationship between the money and credit markets. In the introduction we have seen that the mainstream theory clearly separates the two markets, observing that they are associated to two distinct prices: the price of money is the reciprocal of the price level, while the price of credit is the interest rate.

Keynes’s analysis focuses on the money market; even when, after the publication of the *General Theory*, he explicitly tackles the problem of how investment are financed, he does not consider the liquidity demand expressed by firms as a demand for credit, but as a further component of money demand. In the previous pages, we have already pointed out that it is desirable to give relevance to Keynes’s considerations by specifying a credit market which is distinct from the money market.<sup>56</sup> Several Post-Keynesians have stressed that the specification of the credit market does not imply either scrapping the liquidity preference theory, or accepting the neoclassical theory of interest rate.<sup>57</sup>

Schumpeter does not distinguish between the money market, the credit market and the market for capital. The market for capital is the market in which entrepreneurs demand bank liquidity. The subject of exchange in the capital market is the money created by banks which

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our fiction loses its closeness to reality. To cling to it there also, as the traditional theory does, is to hide an essential thing...”Schumpeter (1912, pp. 79-80).

<sup>56</sup> For a detailed analysis, see: Bertocco (2002).

<sup>57</sup> See for instance: Howells (1995); Arestis and Howells (1996); Arestis (1997); Dow (1997); Rochon (1999); Bertocco (2001); Palley (2002).

is transferred to firms through a credit contract; hence, Schumpeter does not distinguish between demand for capital, money demand and credit demand.<sup>58</sup>

Schumpeter identifies the money market with the credit market, since he gives no relevance to the stock of value function of money; he does not consider money as an instrument to store wealth in time. He thinks that the concept of quantity of money is of little significance because banks can create substitutes of legal-tender money which have the same functions as legal-tender money, and he argues that no relationship exists between the quantity of money in circulation and the number of innovations that the entrepreneurs can carry out.<sup>59</sup>

The contrast between the respective positions of Keynes and Schumpeter can be reconciled by specifying two distinct money and credit markets; in this way, the money demand and the credit demand functions are separated. Following Keynes, we can hold that the money demand function represents the behaviour of wealth owners who choose instruments in which to store their wealth in time, while the credit demand function expresses the behaviour of agents, the firms, that do not have money and that get into debt to carry out a planned investment.

In order to specify a credit market separate from the money market it is convenient to use the distinction between capital account and income account introduced by Tobin (1961,1969,1982). The capital account describes all the assets and the liabilities of the institutional sectors (families, firms, public sector, financial intermediaries) and a capital account theory analyses the factors which determine the supply and demand of the various assets. It is therefore composed of stock variables; the money market is a component of the capital account. The income account, on the other hand, describes the income flow and a theory of income account analyses the factors which determine its level and use. The credit market must be associated with the income account because the demand for credit is determined by the investment decision of firms.<sup>60</sup>

A theory of credit must specify a credit demand function and a supply function and it must explain what factors influence the interest rate on credit. On the basis of Keynes's

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<sup>58</sup> According to Schumpeter (1912, pp.123-126) the capital market: "...it is what the businessman calls the money market...What takes place is simply the exchange of present against future purchasing power...the main function of the money or capital market is trading in credit for the purpose of financing development."

<sup>59</sup> Schumpeter 1939. We can note that Schumpeter's thesis can be found also in the liquidity definition elaborated in the 1950s by the Radcliffe Committee and used by Kaldor in his critique of Monetarism; see: Bertocco (2001).

<sup>60</sup> In support of the view that credit and money should be distinguished see: Rochon (1997, 1999).

comments on the 'finance motive', we can assume that the demand for credit depends on the investment decisions of firms. The firms which intend to carry out investment projects need to obtain liquidity; this demand for liquidity can be considered as a demand for credit since it is expressed by actors that: a) do not have liquidity; b) when they obtain the cash, they undertake to pay it back at a fixed future date.

The specification of the credit market does not change the monetary nature of the interest rate; in fact, the analyses of Keynes and Schumpeter lead us to consider the credit supply as a variable that does not depend on saving decisions. We can assume that banks offer credit to firms at an interest rate which is decided by applying a mark-up on the bond rate which is determined on the money market.<sup>61</sup> In this way it is possible to combine the considerations of Keynes and Schumpeter on the monetary nature of the interest rate. Schumpeter derives the monetary nature of interest rate from the monetary nature of capital.<sup>62</sup> He criticises the theories that consider the interest rate as a reward for abstinence from consumption or as the compensation for a production factor.<sup>63</sup> Schumpeter emphasises that the transaction that generates interest is not the exchange of goods between savers and firms, but the exchange of money taking place on the credit market between banks and firms.<sup>64</sup> It is the realisation of monetary profits that allows firms to pay interest to banks.<sup>65</sup> He criticises the distinction introduced by Wicksell between the monetary interest which is fixed by banks, and the

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<sup>61</sup> This point has been emphasized in: Bertocco (2002). Many researches remark that the strategy of the central bank of the most important countries is based on the manoeuvre of interest rates; see for example: Leiderman and Svensson (1995); Mishkin (1999); Bank of England (1999); Romer (2000); Meltzer (2001).

<sup>62</sup> "... the money required for innovations constitutes the chief factor in the industrial demand on the monetary market... From this the rest follows – especially the theorem that interest attaches to money and not to goods." Schumpeter (1912, p. 158).

<sup>63</sup> "Unquestionably it is extraordinary tempting in the case of interest also to try to turn away from the element of money as quickly as possible and to carry out the explanation of interest into the region where values and returns arise, namely in the realm of the production of goods. However, we cannot turn aside... It is true that goods and not 'money' are needed to produce in the technical sense. But if we conclude from this that money is only an intermediate link, merely of technical importance, and set about substituting for it the goods which are obtained with it and for which therefore in the last analysis interest is paid, we at once lose the ground from under our feet..." Schumpeter 1912, p.183. : Schumpeter criticises the: "... naive conviction that interest is a price of some productive service in the same sense in which wages are a price of the service of labor. " Schumpeter 1939, p. 100.

<sup>64</sup> "The exchange to which interest owes its origin ... takes place between entrepreneur and banker." Schumpeter 1912, p. 195.

<sup>65</sup> "... what are the conditions for the emergence of a premium on present over future purchasing power? ... within the circular flow and in a market which is in equilibrium it is impossible with a given money sum to obtain a greater money sum... Only in the course of development is the matter different. Only then can I obtain a higher return for my product, that is, if I carry out a new combination of the productive forces which I bought for a hundred monetary units and succeed in putting a new product of higher value on the market. For the prices of the means of production were not determined with regard to this employment, but only with regard to the previous uses. Here, then, the possession of a sum of money is the means of obtaining a bigger sum... *and in this lies the explanation of interest.*" Schumpeter 1912, pp. 187-190.

natural interest rate which corresponds to the rate that would arise on the credit market if capital goods were directly traded:

“The necessity of reconciling a nonmonetary theory with obvious facts of the sphere of money and credit is, in particular, responsible for the idea that there are two kinds of interest rates, a ‘natural’ or ‘real’ one which would also exist in a barter economy and which represents the essence of the phenomenon, a permanent net return from physical means of production, and a monetary one, which fundamentally is but the former’s reflex in the monetary sphere...Its role in the thought of our own time is due to the teaching of Knut Wicksell...For us, however, there is no such thing as a real rate of interest, except in the same sense in which we speak of real wages...the money market with all that happens in it acquires for us a much deeper significance than can be attributed to it from the standpoint just glanced at. It becomes the heart, although it never becomes the brain, of the capitalist organism.”<sup>66</sup>

By arguing that the concept of the natural rate is extraneous to a capitalistic economy, Schumpeter re-enforces the idea that such an economy is profoundly different from an exchange economy and that it is not possible to apply to the former the rules that are valid in the latter.

## **2.5 The role of banks**

The last element that characterises the Keynes-Schumpeter approach concerns the specification of the role of the banks. This approach leads us to define the role of banks in a completely different way from the neoclassical theory. According to this theory, the function of banks is simply to facilitate the transfer of resources from savers to firms, in this way overcoming the imperfections which are present in the real world and are absent in a theoretical world without frictions in which savers directly finance firms.

A substantially similar view emerges from the analysis of the New Keynesians (NKs) according to which the existence of banks is justified by the presence of asymmetric information which hinders the direct financing of firms by savers.<sup>67</sup> The NKs maintain that the credit market works like Akerlof’s used car market. Akerlof observed that the presence of asymmetric information stimulates the creation of institutions whose aim is to reduce information costs; in particular, Akerlof drew attention to the activity of the merchants who

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<sup>66</sup> Schumpeter 1939, p.101.

<sup>67</sup> This approach is mainly linked to Akerlof and Stiglitz; for a critical analysis, see: Bertocco (2003).

specialise in evaluating the quality of the goods.<sup>68</sup> The banks play the same role in the capital market as the merchants play in Akerlof's used car market. The function of banks is to gather information, in this way eliminating the problems connected with the presence of asymmetric information. The banks' activities permit the real world, characterised by imperfections, to obtain those optimal results that characterise an economy without imperfections in which the mechanism of the interest rate ensures the efficient allocation of the savings. In a world without information asymmetries the mechanism that allows saved resources to be efficiently allocated is the interest rate; through this mechanism productive resources are given to those who are able to obtain the highest returns; the presence of information asymmetries prevents this mechanism from working.<sup>69</sup> The NKs effectively depict the role of banks by using land as an example of a productive resource to be allocated:

“The need for credit arises from the discrepancy between individual's resource endowments and investment opportunities. This can be seen most simply if we imagine a primitive agricultural economy, where different individuals own different plots of land and have different endowments of seed with which to plant the land. ... The marginal return to additional seed on different plots of land may differ markedly. National output can be increased enormously if the seed can be reallocated from plots of lands where it has a low marginal product to plots where it has a high marginal product. But this requires *credit*, that is, some farmers will have to get more seed than their endowment in return for a *promise* to repay next period, when the crop is harvested. Banks are the institutions within this society for screening the loan applicants, for determining which plots have really high marginal returns, and for monitoring, for ensuring that the seed are actually planted, rather than, say, consumed by the borrower in a consuming binge.”<sup>70</sup>

This analysis of the role of banks does not coincide with that emerging from the works by Keynes and Schumpeter, according to which the object of credit is not constituted by land plots and the role of banks does not consist in measuring the physical productivity of these plots. Moreover, we can note that the credit market analysed by Keynes and Schumpeter has different characteristics from Akerlof's used car market: it is one thing to assess the quality

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<sup>68</sup> “In *our* picture the important skill of the merchant is identifying the quality of merchandise; those who can identify used cars in our example and can guarantee the quality may profit by as much as the difference between type two traders' buying price and type one traders' selling price. These people are merchants.” Akerlof (1970, p.117)

<sup>69</sup> “What ensures that the number of individuals certified to be credit worthy, combined with those with cash resources, generates a demand for *current* resources equal to current supplies?... The answer provided by traditional micro-economic analysis is simple: if there is an excess demand for current resources, the real rate of interest will rise: as this happens, the demand for credit, i.e., the number of individuals seeking certification from the banking institutions... is reduced until demand equals supply at full employment for current resources. Similarly, potential borrowers with high expected yield projects will bid more for resources, resulting in an efficient allocation of resources. ... We now argue that, in economies characterized by ... information imperfections ... the price system may well not serve the information-equilibrating role assigned to it by conventional theory...” Stiglitz and Weiss (1990, p. 101).

<sup>70</sup> Stiglitz and Weiss (1990, pp. 91-92).

of used cars, quite another thing to evaluate the future returns of an investment project for the manufacture of a new type of car. In the presence of uncertainty there are no objective criteria that allow the future returns of investment projects to be evaluated; even the banks act in conditions of uncertainty. They evaluate the applications for financing presented by firms on the basis of subjective, discretionary criteria; therefore the banks share with the entrepreneurs the responsibility of deciding which investments are carried out; by their decisions they influence the development of the economic system. Keynes maintained that in the presence of uncertainty the evaluation criteria used to take economic decisions are subject to sudden changes.<sup>71</sup> We can therefore say that also the banks' evaluation criteria can change suddenly causing considerable instability in the economic system.<sup>72</sup>

We can point out that in the presence of uncertainty the banks may decide to ration the credit even if they are in a position to create credit endogenously. In conditions of uncertainty, the decision to ration the credit is due to the fact that banks and firms have different expectations about the future results of the same investment project: the banks may view the prospects of a given investment project in a less optimistic light than the entrepreneurs, or they may be more risk averse. We can therefore hypothesize that in a situation in which the banks fix the loan rate by applying a mark up on the interest rate controlled by the monetary authorities, they limit themselves to financing the investments which they deem profitable, rejecting the projects which they consider insufficiently profitable or particularly onerous. This explanation of the credit rationing phenomenon is quite different from the one put forward by the New Keynesians, based on the presence of asymmetric information, i.e. the fact that the banks have less information about the investment project than the firms. In this case the banks are not able to distinguish the firms on the basis of the characteristics of their investment project, and they ration credit to firms that they consider identical to those that receive the credit.

Keynes and Schumpeter emphasise the social function carried out by banks; in fact, they point out that the banks' function is not to make it possible to reproduce the results that would be realised in an ideal world in which savers directly finance firms and intermediaries do not have any role. Keynes and Schumpeter consider the presence of banks, of bank money and

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<sup>71</sup> "... a practical theory of future... has certain marked characteristics. In particular... it is subject to sudden and violent changes. The practice of calmness and immobility, of certainty and security, suddenly breaks down. New fears and hopes will, without warning, take charge of human conduct. The forces of disillusion may suddenly impose a new conventional basis of valuation." Keynes (1937a, pp. 114-5)

<sup>72</sup>Minsky is the post-Keynesian economist who studied most extensively the instability of the capitalist economies characterized by the presence of sophisticated financial institutions. See: Minsky (1980; 1982).

the credit market as essential elements of an economic system which is completely different from a *real-exchange economy*, to which Keynes refers, or to the pure exchange economy that Schumpeter talks about. Banks and credit are the fundamental elements of an economic system in which there are no mechanisms guaranteeing that full employment is automatically reached, of an economy in continuous evolution driven by the innovations made by virtue of the investment decisions taken in conditions of uncertainty.

If we consider the Keynesian income theory, we can note that the social role of banks clearly emerges when it is specified that the presence of bank money is important in explaining the inversion of the investment-saving relationship with respect to what the classical theory holds, and when it emphasises the relevance of uncertainty in an economic system in which investment decisions assume significant dimensions. Moreover, the social function of banks emerges when the consequences of the decisions of banks on the evolution process of the capitalist system are considered; this evolution process is generated by investment decisions financed via creation of bank money.<sup>73</sup> This point is effectively emphasised by Morishima (1992, p. 20):

“...the vision that the financial sector play a crucial role in the economy is common between Schumpeter and Keynes. It then follow that the path the economy will trace out depends on the attitudes of the financial organizations. It is obvious that the capital goods accumulated when they support, say, the electronics industry would be completely different from those accumulated when they support the ship buildings industry. In the long run the economy will turn out to be of a greatly different kind according to which of these options is taken.”

The awareness of the social role carried out by banks is particularly strong in Schumpeter who note that they have the same function as the central planning authority in a socialist economy. In a socialist economy the means of production are publicly owned and so it is the planning authority that decides how to use the available productive factors. When such authority decides to produce a new good, it orders a certain quantity of productive factors from a given sector to be collected and used in the new activity. In a capitalist economy in which the means of production are privately owned the role of the planning authority is carried out by the banks which offer the entrepreneur innovators the purchasing power

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<sup>73</sup> “... innovations in the economic system do not as a rule take place in such a way that first new wants arise spontaneously in consumers and then the productive apparatus swings round through their pressure. We do not deny the presence of this nexus. It is, however, the producer who as a rule initiates economic change, and consumers are educated by him if necessary....Therefore, while it is permissible and even necessary to consider consumers’ wants as an independent and indeed the fundamental force in a theory of circular flow, we must take a different attitude as soon as we analyse *change*.” Schumpeter (1912 p. 65).

enabling them to use the productive factors, diverting them away from the uses to which they were previously destined.<sup>74</sup>

## **Conclusions**

In conclusion, we can note that the two theoretical frameworks described, analyse the role of the financial institutions from different perspectives. The asymmetric information approach offers a reassuring picture of the working of an economy marked by the presence of a complex financial structure. This financial structure is considered as the response to the imperfections that characterise the real world and that prevent savers from directly financing firms. The presence of a complex financial structure eliminates the negative effects connected with asymmetric information and allows an efficient allocation of savings. It can be concluded that the distinctive element of this approach is the return to the principle of the neutrality of the financial variables, as the function of the financial structure is to ensure that the real world, with its imperfections, reproduces the results that characterise the ideal world without imperfections, in which savers directly finance the firms and the financial institutions have no role at all.

The Keynes-Schumpeter approach leads us to analyse in a more complicated way the role of the financial structure. This approach underlines that bank money, banks, credit market are elements that mark an economy that is completely different from the pure exchange economy to which the principle of the neutrality of the monetary variables is applied. It is an economy in which: 1) the object of the credit market is not the resources saved but the means of payment created by the banks; 2) the credit market is based on the relation between banks and firms and not on the relation between savers and firms; 3) there are no automatic mechanisms that guarantee the full employment of the resources; 4) the evolution of the economic system

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<sup>74</sup>“... suppose that our socialist community finds it convenient to rule that the executive submit every innovation it wishes to carry out to another body, which passes upon it and may grant or withhold assent. In case it sanctions the plan, it countersigns and issues the orders to the factors to form the new combination. This is the function which in capitalist society is filled by banks which, in providing entrepreneurs with means to buy factors of production or their services, do something akin to issuing such orders.” Schumpeter (1912. p. 86). On this point see: De Vecchi (1995).

is determined by the innovations that are made through investment decisions that are taken in conditions of uncertainty.

These elements make it possible to highlight the social role of the banks, which do not act on behalf of a particular group of economic subjects, but they act on behalf of the entire society inasmuch as, by creating money to finance the entrepreneur-innovator, they express the consensus of society towards the investment project which is funded. The social responsibility of the banks becomes evident when, following Schumpeter, we observe that it is the investment decisions financed by the bank that influence the choice of the goods to produce and not the preference of consumers, and when we recall that it is society in its entirety through the banks that assumes the risk of the investment.

If the dimension that characterizes the asymmetric information approach is that of the neutrality of the financial structures, the dimension that marks the Keynes-Schumpeter approach is that of consensus: the financial structure is the instrument through which the consensus of society in its entirety is expressed about the innovations that are made through the firms' investments. The Keynes-Schumpeter approach has important implications. In the first place, this approach leads us to minimize the importance of asymmetric information in explaining the characteristics of the financial structure. According to Keynes and Schumpeter, the existence of the banks is not explained by the presence of asymmetric information, but it is explained by the spread of a fiat money. The Keynes-Schumpeter approach emphasizes the monetary role played by the banks, that is, their ability to create new money through credit. Moreover, in the presence of uncertainty, the difference between the financial structures of the small-medium firms with respect to the big firms can be explained on the basis of the selection criteria applied by the banks rather than on the basis of the presence of asymmetric information.

In the second place, this approach leads us to ask questions about the financial structure that are not relevant according to the asymmetric information approach. The first question can be formulated as follows: given that the banks, in taking their financing decisions, express the consensus of society with respect to projects that the firms intend to make, we can ask ourselves to what extent can banks represent the aspirations and desires of society as a whole, and if there are tools that allow society to express some sort of judgement on the banks' action. We can assume that society on the whole expresses an evaluation of the banks' choices by creating the conditions that permit firms to repay the loans obtained from the banks; we can therefore hold that the banks express a partial consensus towards the

entrepreneur-innovator when they grant the financing, while the substantial consensus is expressed by society as a whole when it puts the firms in a condition to be able to repay the loan. This leads us to give importance to the phase of repayment of the loan by the firms; a problem to which the asymmetric information approach does not give much importance. The reason for this lack of attention is intuitable: if one agrees that the intermediaries' task is to overcome the problems connected with the presence of asymmetric information and to ensure that savings are used efficiently, then the problem of repaying the loan fades into the background as it is taken for granted that the firms receiving funding are those that have the most profitable projects. If, on the other hand, one emphasizes that the decisions of the banks are taken in conditions of uncertainty and the investments condition the development of the system, then it becomes important to study the factors that put companies in the condition of repaying the loans granted.

Two references seem to me to be important on this point: the first is Schumpeter's considerations about the conditions that enable the firms which introduce innovations to make profits; in the case of the launching of a new good, the firm offering it will make a profit if it is capable of making consumers accept this new good; in this case, in fact, being the only producer, it will be able to charge a sale price higher than costs.<sup>75</sup> The second reference is the analysis of Minsky, the Keynesian economist who most developed the analysis of the role of financial institutions by specifying the conditions that allow firms to repay the loans. Minsky highlights the role of profits in the process of repayment of the loans, and points out that profits depend on the income level. The ability of firms today to repay the loans contracted in the past depends on the current profits and on the current income which depends on the investment which the firms intend to realize today on the grounds of their profit expectations and of the spending decisions of the public sector. Minsky points out that this relation between profits, investment and government debt renders the profit level an incorrect indicator of the efficiency of the investment realised in the past.<sup>76</sup>

Moreover, we may ask if the degree of consensus on the part of society with regard to the financing decisions taken by the financial institutions alters as a result of changes in the

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<sup>75</sup> "Such a (new) good must first of all be forced on consumers, perhaps even given away gratis. A host of obstacles arise. But when these are overcome and the consumers take to the commodity, there follows a period of price determination solely on the basis of direct valuation and without much regard to costs..." Schumpeter (1912, p. 135).

<sup>76</sup> "Whenever the deficit explodes... the aggregate flows of profits to business increases. Investment turns out to be profitable even if the investments that come on stream are inept... big government is a shield that protects an inefficient industrial structure." Minsky (1982, p. 56).

financial structures. We have seen that Keynes and Schumpeter highlight the central role of the banks. The data concerning the financial structure of firms shows how important alternative channels of financing are to the banks; in particular, for small firms, the importance of self-financing and the financing obtained by non-bank intermediaries that operate on private share markets, while for the big firms we can note the importance of recourse to financing obtained through the stock market. So we can ask ourselves in which way does recourse to these non-bank channels alter the degree of consensus with respect to financing decisions that are taken by the financial structure.

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