Giancarlo Bertocco

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The characteristics of a monetary economy: a Keynes-Schumpeter approach

Giancarlo Bertocco
Università degli Studi dell’Insubria
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Abstract

The objective of this paper is to elaborate a monetary theory capable of supporting the thesis of money non-neutrality on the grounds of the arguments developed by Keynes and Schumpeter. This theory will be formulated starting from the two points which are common in the views of both Keynes and Schumpeter. First, in contrast with the mainstream theory, Keynes and Schumpeter state that the diffusion of a fiat money induces a radical modification into the way in which the economic system works. Both Keynes and Schumpeter maintain that it is not possible to describe the way in which an economy works in the presence of a fiat money by adopting the same theoretical framework used to describe a barter economy. Secondly, when Keynes and Schumpeter describe the reasons why money and financial aggregates are not neutral, they highlight the fundamental role of the credit market and of the banks. In contrast with the mainstream theory, they do not consider the credit market as the mirror image of the goods market.
Introduction

Schumpeter (1954) classifies monetary theories in two categories: real analysis and monetary analysis. In the first category he includes those theories which consider money only as an instrument meant to facilitate trading without having any effect on economic processes; these theories state the money neutrality principle.¹ In the second category Schumpeter inserts those theories which consider money an essential element in order to understand how the economic system works.²

Starting from this classification we can place the contemporary monetary theory, characterized by the predominance of the monetarist thesis in the version elaborated by the new classical economics, in the real analysis category. This theory is characterised by three features. The first one concerns the specification of the functions of money; according to the mainstream theory, the fundamental function of money is that of means of exchange: by introducing money it is possible to reduce transaction costs. The mainstream theory confirms the validity of the quantity theory of money, according to which the levels of income and wealth of a nation do not depend on the quantity of money in circulation.³

In his Nobel Lecture, Lucas (1996) stresses that the fundamental progress achieved by contemporary monetary theory, with respect to the version of the quantity theory of money proposed by Hume, is the

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¹ “Real analysis proceeds from the principle that all the essential phenomena of economic life are capable of being described in terms of goods and services, of decisions about them, and of relations between them. Money enters the picture only in the modest role of a technical device that has been adopted in order to facilitate transactions… So long as it functions normally, it does not affect the economic process, which behaves in the same way as it would in a barter economy; this is essentially what the concept of neutral money implies.” Schumpeter (1954, pp. 277-8).

² “Monetary analysis introduces the element of money on the very ground floor of our analytic structure and abandons the idea that all essential features of our economic life can be represented by a barter-economy model.” Schumpeter (1954, p. 278).

³ Friedman (1968, p. 12) often supports this view by using the following quotation from J.S. Mill: “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.”
explanation of the apparent contradiction between the proposition that variations in the quantity of money produce, at least initially, real effects, and the proposition that these variations do not cause effects on real aggregates.\textsuperscript{4}

The second element that characterises the dominant monetary theory regards the specification of the consequences of using a fiat money. According to this theory, the use of a money devoid of any intrinsic value, instead of a commodity money, makes it possible to substitute a means of exchange with high production costs with another whose production costs are close to zero. Smith and Ricardo had already pointed out that the use of a fiat money, instead of a metallic currency, makes it possible to reduce the production costs of the means of exchange.\textsuperscript{5} The main problem with the use of a fiat money concerns the control of the quantity of money in circulation, given that the use of a money without intrinsic value considerably increases the amount of seignorage that the State can obtain through control of the production process of money. In their historical works, Friedman and Schwartz (1963; 1982) describe different episodes showing how states were able to obtain great advantages from the use of a fiat money. They point out, though, that in the contemporary developed economies it seems that Fischer’s prediction, according to which the spread of a fiat money is a plague for the country that uses it, has not come true. This is due to the fact that in these countries, in recent decades, conditions have arisen that reduced states’ ability to obtain revenues by using inflation.\textsuperscript{6}

The third feature of the mainstream monetary theory regards the role of the credit market. This theory separates the money market from the credit market; Friedman and Schwartz (1982) assert that the

\textsuperscript{4} Lucas states that the effects of a change of the quantity of money depend on the way this variation is generated: “The main finding that emerged from the research of the 1970s is that anticipated changes and unanticipated changes in money growth have very different effects. Anticipated monetary expansions have inflation tax effects and induce an inflation premium on nominal interest rates, but they are not associated with the kind of stimulus to employment and production that Hume described. Unanticipated monetary expansions, on the other hand, can stimulate production as, symmetrically, unanticipated contractions can induce depression.” Lucas (1996, p. 679).

\textsuperscript{5} The modern version of this theory has been elaborated by Menger (1892); recent versions can be found, for example, in: Brunner and Meltzer (1971); Jones (1976); Kyotaki and Wright (1989); Gravelle (1996); Dowd (1999).

\textsuperscript{6} See: Friedman and Schwartz (1986).
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. 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; the intermediaries are considered a

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7 Friedman and Schwartz point out the: “… tendency to confuse ‘money’ and ‘credit’ which has produced misunderstanding about the relevant price variable. The ‘price’ of money is the quantity of goods and services that must be given up to acquire a unit of money – the inverse of the price level. … The ‘price’ of money is not the interest rate, which is the ‘price’ of credit. The interest rate connects stocks with flows – the rental of land with the price of land, the value of the service flow from a unit of money with the price of money. Of course, the interest rate may affect the quantity of money demanded – just as it may affect the quantity of land demanded – but so may a host of other variables.” Friedman and Schwartz (1982, p. 26).

8 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.”
mechanism that makes it possible to do ‘quickly and commodiously’ what could be done even in their absence.

The objective of this paper is to elaborate an alternative monetary theory to the mainstream one, capable of supporting the thesis of money non-neutrality on the grounds of the arguments developed by Keynes and Schumpeter. This theory will be formulated starting from the two points which are common in the views of both Keynes and Schumpeter. First, in contrast with the mainstream theory, Keynes and Schumpeter state that the diffusion of a fiat money induces a radical modification into the way in which the economic system works. Both Keynes and Schumpeter maintain that it is not possible to describe the way in which an economy works in the presence of a fiat money by adopting the same theoretical framework used to describe a barter economy. The introduction of a fiat money transforms the system from a pure exchange economy in which all agents have a given endowment of resources and in which the fundamental economic problem is that of finding an efficient trading mechanism, into a production economy in which the time dimension becomes relevant. Schumpeter stresses that in a pure exchange economy historical time is not relevant given that this economy replicates itself in an identical fashion, and points out that the essential feature of a capitalistic economy is the continuous process of transformation that takes place over time as a result of the innovations brought about by entrepreneurs. On the other hand, Keynes believes that the main difference between his theory and the classical one is the actual analysis of the relationships between economic decisions and historic time. He points out that fundamental economic decisions concerning the production of goods and accumulation of wealth generate their effects in a future that might even be very remote, and therefore he underlines the need for a theory which takes into the account that methods to objectively predict the future consequences of economic decisions do not exist.⁹

Secondly, when Keynes and Schumpeter describe the reasons why money and financial aggregates are not neutral, they highlight the fundamental role of the credit market and of the banks. In contrast with the mainstream theory, they do not consider the credit market as

⁹ See: Keynes (1937a).
the mirror image of the goods market. They maintain that what is traded in the credit market is not the resources unconsumed by savers and that credit supply does not coincide with the amount of saving.

This paper is divided in two sections. In the first one, we show how some important theoretical differences between Keynes and Schumpeter can be resolved. In the second section we present the most important aspects of the Keynes-Schumpeter approach.

1. The elements on which a Keynes-Schumpeter approach is founded.

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. He 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.10

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

10 “… 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 interpretation of modern vicissitudes, ‘poverty in plenty’ and the rest, can be derived from it.” Schumpeter (1936, pp. 354-355)
different arguments. In the *General Theory* the presence of a fiat money is the necessary element that justifies the existence of 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.\(^{11}\) 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 fiat money, Schumpeter considers economic crises as the inevitable consequences of the realisation of innovations.\(^{12}\)

\(^{11}\)“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)

\(^{12}\) Minsky (1986) emphasised the different reactions of Keynes and Schumpeter to the 1929-33 crisis.
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 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.13

13 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
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 is 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.\(^{14}\) 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*.

2. Keynes-Schumpeter: the characteristics of a monetary theory

2.1 The nature of the credit market.

In this section we present the most important features of Keynes’ and Schumpeter’s credit theory. The *trait-d’union* between the two economists’ views is the emphasis on the shared belief that the presence of banks and the use of bank money have radically changed the structure of the economic system, making it very different from a barter economy.

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lead to resilience and add new dimension to the fragility of financial structures.” See also: Morishima (1992).

\(^{14}\) 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).
2.1.1 Keynes’ theory.

Keynes maintains that the spread of fiat money profoundly changed the characteristics of the economic system 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. It is an economy in which there is a mechanism which insures that all the monetary income is spent, directly or indirectly, to buy the goods produced by firms; in other words, it is an economy in which Say’s law applies. 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; in a monetary theory Say’s law does not apply, and the income level is subject to fluctuations that depend on the oscillations in the aggregate demand.

The condition that guarantees full employment in a real exchange economy is the fact that commodity money is used. The most important feature of a world in which commodity money is used is that all individuals can produce money in the same way that they can produce any other commodity. Keynes point out that in a gold standard system, there is no such thing as unemployment as, in the event of a fall in aggregate demand, the unemployed workers will turn to gold mining.15 On the other hand, if fiat money, which has no intrinsic value and is not produced with the use of labour, is used, the fluctuations of the aggregate demand will cause income and employment levels to vary.16

This analysis of the link between the presence of a fiat money and the occurrence of involuntary unemployment is elaborated by highlighting the store of wealth function of money. In a world in

15 “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).
16 Keynes (1933b) maintains that the characteristics of a fiat money make income fluctuations caused by a lack of effective demand more frequent.
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.

In the works published after the *General Theory*, Keynes analyses the creation mechanism of a fiat money. Fiat money, which is not a commodity, cannot be produced by unemployed workers. The production of fiat money is a prerogative of special subjects; a typical example examined by Keynes, is money created by the banking system. The subjects that are able to create money can buy commodities even if they do not possess goods. In reality, banks do not buy commodities, but they finance operators against the promise to repay the amount received at a given future date. In both cases, the use of fiat money alters the nature of exchanges as the necessary condition in order to buy goods is not the availability of goods, but the availability of money. When bank money is used it is not necessary to possess goods in order to buy money, but it is necessary to fulfil the criteria used by banks to select the demand for credit. In a world in which fiat money is used we can highlight the function of money as a means of payment. This term highlights a different function from that of means of exchange: this term is used to point out that the disposability of money is necessary in order to buy goods, but the disposability of goods is not necessary in order to buy money.

When bank money is used it is important to define the criteria which are used by the banks in order to create new money; in particular, it is important to specify the subjects that receive credit and the operations that are financed. The keynesian theory of income and the inversion of the causal relation between savings and investments allow us to work out a first answer. If we observe that the spreading of bank money proceeds in parallel with the emergence of agents who use the obtained purchasing power to carry out new production projects, we can hold that investments are the principal component of the aggregate demand financed by the banking system.

The Keynesians have generally neglected the relation between the presence of bank money and the theory of income. In the *General Theory* it is implicitly assumed that firms have the necessary liquidity to carry out their planned investments at the interest rate determined on the money market. Keynes tackled the problem of the financing of spending decisions in some works published between 1937 and 1939
to respond to the criticisms of the General Theory, and, in particular, to Ohlin's criticisms of the interest rate theory. Ohlin contrasts Keynes's theory with a new version of the loanable funds theory, which holds that the interest rate is determined by the credit demand flow which depends on ex-ante investment, and by credit supply flow which depends on ex-ante saving. Keynes considers the concept of ex-ante investment important because it makes it possible to show that firms that intend to carry out a certain investment project must find the necessary funds. While, on the one hand, Ohlin's criticisms do lead Keynes to give more importance to the issue of investment decision financing, he rejects the thesis that ex-ante investment is financed by ex-ante saving. Keynes criticises Ohlin by pointing out that the firms' demand for liquidity must be met by a supply of liquidity which can not arise from ex-ante saving. The firms' demand for liquidity is met by the banks which create new money or by the public which gives the existing money to firms:

“... the transition from a lower to a higher scale of activity involves an increased demand for liquid resources which cannot be met without a rise in the rate of interest, unless the banks are ready to lend more cash or the rest of the public to release more cash at the existing rate of interest. If there is no change in the liquidity position, the public can save ex ante and ex post and ex anything else until they are blue in the face, without alleviating the problem in the least... This means that, in general, the banks hold the key position in the transition from a lower to a higher scale of activity. If they refuse to relax, the growing congestion of the short-term loan market or of the new issue market, as the case may be, will inhibit the improvement, no matter how thrifty the public purpose to be out of their future incomes. On the other hand, there will always be exactly enough ex post saving to take up the ex post investment and so release the finance which the latter had been previously employing. The investment market can become congested through shortage of cash. It can never become congested through shortage of saving. This is the most fundamental of my conclusions within this field.”

17 “..ex-ante investment is an important, genuine phenomenon, inasmuch as decisions have to be taken and credit or ‘finance’ provided well in advance of the actual process of investment...” J.M.Keynes (1937c, p. 663).
18 “... 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).
19 J.M.Keynes (1937c, p.668).
Saving cannot be the source of investment financing inasmuch as it is the result of the investment process. In response to Ohlin's criticism, Keynes acknowledges that he hadn't dealt with the issue of investment financing in the *General Theory* and he fills this gap by specifying a further motive for demanding money: the finance motive.\(^20\)

By defining the demand for liquidity on the part of the firms which plan to make an investment as a further component of the demand for money, Keynes overlooks the fact that this demand for liquidity gives rise to a relation of indebtedness between the firms and the banks that meet this demand. This decision was probably justified by the desire to reply to Ohlin's criticisms without substantially altering the framework of the *General Theory*.\(^21\) I believe that Keynes's solution overlooks the differences between the demand for liquidity expressed by firms to finance investments and the demand for liquidity expressed by the wealth owners. The former involves the demand for liquidity from agents that do not have money and that get into debt to carry out a planned investment; the theory of liquidity preference described in the *General Theory* instead describes the factors which influence the agents' choices regarding the composition of their wealth.\(^22\)

I think that it is not possible to give relevance to investment decision financing by considering only the money market. In a world in which bank money is used, money does not fall from the sky, but banks create money through a debt contract by which they finance spending decisions of agents who do not have purchasing power. It is therefore necessary to provide a fully fledged specification of the credit market, in order to analyse how spending decisions are financed. A theory of credit must specify a credit demand function and a supply function and it must explain what factors influence the

\[^20\] "… if the liquidity-preferences of the public … and of the banks are unchanged, an excess in the finance required by current ex-ante output … over the finance released by current ex-post output will lead to a rise in the rate of interest; and a decrease will lead to a fall. I should not have previously overlooked this point, since it is the coping-stone of the liquidity theory of the rate of interest. I allowed, it is true, for the effect of an increase in actual activity on the demand for money. But I did not allow for the effect of an increase in planned activity, which is superimposed on the former, and may sometimes be the more important of the two…” J.M.Keynes (1937c, p. 667).

\[^21\] See for example: Chick (1997; 2000).

\[^22\] For a more thorough analysis, see: Bertocco (2002).
interest rate on credit. On the basis of Keynes's 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. By specifying the credit demand function, the firms’ demand for liquidity aimed at financing investment decisions is distinguished from the demand for money which instead reflects the decisions of wealth-owners. Investment decisions therefore assume particular importance, not just because, owing to their instability, they are the principal factor in explaining fluctuations in the levels of income, but also because of the way they are financed. It is assumed that investments are financed by bank credit, while consumption decisions are financed by the distributed income.23

As far as the credit supply function is concerned, the main conclusion which emerges from Keynes's analysis is the contention that the supply does not depend on saving decisions. As has been seen, Keynes is very firm in asserting that the firms' demand for liquidity is not met through the savings supply, but rather by banks which create new money. We can therefore hypothesize that the credit supply depends on the decisions taken by the banks and that it is independent of the savings flow. To complete the description of the credit market it is necessary to specify the factors which determine the interest rate on loans. This explanation must be coherent with Keynes's conclusion that the interest rate is not influenced by savings decisions; the assumption regarding the credit supply function leads us to highlight the role of the banks in determining the interest rate on loans.

From Keynes’s analysis there emerges a theory of credit which is completely different to the one which characterises the mainstream approach which points out that 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

23 This point is stressed by Minsky (1980, p. 27).
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.

2.1.2 Schumpeter’s theory.

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 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; it 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, but it is not capable of describing how the

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24 “…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).

25 “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).
system evolves as a consequence of changes due to internal factors. 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.”

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…”

26 “… 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).

27 Schumpeter (1939, p 47).

28 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).
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 productions factors already available. Credit becomes a necessary factor for development when innovations are made by new entrepreneurs who do not own means of production. 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. In order to underline this point, Schumpeter defines as entrepreneurs only those economic agents who introduce innovations. The second factor that makes the role of credit very important is the full employment hypothesis. Schumpeter stresses that the innovations are not realised

29 “… 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).

30 “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).

31 “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).

32 “… 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 row 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 cases its existence play a fundamental role in the explanation, and it cannot occur in a
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 stumbling-block 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.”

By creating money to finance the innovators-entrepreneurs, the banks alter the distribution of the ownership of the means of production. 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. With inflation it is possible to generate:

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well balanced circular flow from which we start.” Schumpeter (1912, p. 67). On this point see: Oackley (1990).

33 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).

34 “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).

35 Schumpeter (1912).
“…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 what happens in a pure barter economy, this is the key function of money in a capitalist economy.”

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. 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. 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

37 “…the problem does not exist in a non-exchange economy even if new combinations are carried out in it; for the directing organ, for example a socialist economy ministry, is in a position to direct the productive resources of the society to new uses exactly as it can direct them to their previous employments” Schumpeter (1912, p. 78).
38 “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).
exchange for goods or services; it is a ... certificate for previous production”, 39 and its presence does not influence the structure of the economy. 40 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. 41

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:

“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. 42

39 Schumpeter (1912, p.83).
40 “... 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).
41 “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).
42 “... 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
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.”

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 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.

In the first section 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 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.”

43 Schumpeter 1912, 125 (26/124)
emphasise that innovations are introduced through firms’ investment decisions rather than by a new use of existing productive resources.\textsuperscript{44} 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).\textsuperscript{45} In this theoretical scheme, bank money and the credit market take on a decisive role.

\textbf{2.2 The monetary nature of the 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 (1933b) uses the distinction put forward by Marx between the sequence good-money-good (G-M-G’), which characterises a \textit{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:

“\textit{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

\textsuperscript{44} 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.

\textsuperscript{45} 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 \textit{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 \textit{whatever exists at a given moment of time}, as a heritage of the past… The heritage of the past is the one truly exogenous factor, and its influence will determine future events to an extent that varies \textit{inversely} with the distance of the future period from the present.”
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."

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:

> “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, 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.”

46 Keynes (1933b, p. 82).
47 Schumpeter (1912, p. 128).
48 “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).
49 Schumpeter (1912, p. 122).
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. Keynes’s critique is based on the 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. Dishoarding 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.”

These considerations 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. 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. 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

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50 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).
51 Keynes (1939, p. 572).
52 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”
53 “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).
of the entrepreneurial function. Even though he may risk is reputation, the
direct economic responsibility of failure never falls on him.”54

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 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

54 Schumpeter (1912, p. 137).
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.\textsuperscript{55} 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.\textsuperscript{56} Schumpeter (1912, pp. 84-85) notes that when the entrepreneur must evaluate the future results of an innovation:

“…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

\textsuperscript{55} “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).

\textsuperscript{56} “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 into men. … outside of these limits 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).
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.\textsuperscript{57} 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.\textsuperscript{58}

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 is transferred to firms through a credit contract; hence, Schumpeter does not distinguish between demand for capital, money demand and credit demand.\textsuperscript{59}

\textsuperscript{57} For a detailed analysis, see: Bertocco (2002).
\textsuperscript{58} See for instance: Howells (1995); Arestis and Howells (1996); Arestis (1997); Dow (1997); Rochon (1999); Bertocco (2001); Palley (2002).
\textsuperscript{59} 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
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 function 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.\(^6\)

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.\(^6\)

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\(^6\) 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).

\(^6\) In support of the view that credit and money should be distinguished see: Rochon (1997; 1999).
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 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. 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. He criticises the theories that consider the interest rate as a reward for abstinence from consumption or as the compensation for a production factor. 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.

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62 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).

63 “… 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. 1589).

64 “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).
between banks and firms.\textsuperscript{65} It is the realisation of monetary profits that allows firms to pay interest to banks.\textsuperscript{66} He criticises the distinction introduced by Wicksell between the monetary interest which is fixed by banks, and the 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.”\textsuperscript{67}

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.

\textsuperscript{65} “The exchange to which interest owes its origin … takes place between entrepreneur and banker.” Schumpeter (1912, p. 195).

\textsuperscript{66} “… 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).

\textsuperscript{67} Schumpeter 1939, p.101.
3.3 The role of banks and the dimension of consensus.

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.68 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 specialise in evaluating the quality of the goods.69 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

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68 This approach is mainly linked to Akerlof and Stiglitz; for a critical analysis, see: Bertocco (2003).
69 “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).
prevents this mechanism from working.\textsuperscript{70} 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.”\textsuperscript{71}

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 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

\textsuperscript{70} “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).

\textsuperscript{71} Stiglitz and Weiss (1990, pp. 91-92).
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. 72 We can therefore say that also the banks' evaluation criteria can change suddenly causing considerable instability in the economic system. 73

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. 74

Keynes and Schumpeter emphasise the social function carried out by banks; in fact, they point out that the banks’ function is not to make

72 “… 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)

73 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).

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 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.\textsuperscript{75} 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.”

\textsuperscript{75 “… 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).
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 enabling them to use the productive factors, diverting them away from the uses to which they were previously destined.\footnote{Schumpeter (1912). On this point see: De Vecchi (1995).}

Both authors emphasise that banks do not act on behalf of a particular group of economic agents, but on behalf of society as a whole, since they do not lend resources owned by a specific group of agents. The entrepreneur does not put at stake his own resources or the resources belonging to a particular group of agents. The risk connected to the production activity financed by banks is borne by the whole society. Schumpeter underlines that the entrepreneur-innovator does not risk his own resources but he acquires the means of production thanks to the purchasing power created by the banks; it is the bank that assumes the risk of the innovation and, through it, the entire community, that accepts the redistribution of the ownership of the means of production, caused by the banks’ decisions.\footnote{Schumpeter (1912).}

The awareness of the social function carried out by banks leads Schumpeter to specify the features of the banker’s behaviour. In the first place, the banker must know how to assess the characteristics of the investment project to be carried out and the personality of the entrepreneur.\footnote{“It is important for the functioning of the system that the banker should know, and be able to judge, what his credit is used for and that he should be an independent agent… the banker must not only know what the transaction is which he is asked to finance and how it is likely to turn out, but he must also know the customer, his business, and even his private habits, and get, by frequently ‘talking things over with him’, a clear picture of his situation.” Schumpeter 1939, pp. 90.} Secondly, as the banks act on behalf of society and not of particular agents, they must stay independent of the firms and...
political power. Schumpeter points out that the incorrect behaviour of the banks:

“…is sufficient to turn the history of capitalism evolution into a history of catastrophes. One of the results of our historical sketch will, in fact, be that the failure of the banking community to function in the way required by the structure of the capitalist machine accounts for most of the events which the majority of observers would call ‘catastrophes’.”

On the grounds of these considerations concerning the social role of banks, we can stress a fundamental difference between the mainstream approach and the Keynes-Schumpeter approach. We can in fact point out that the mainstream 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 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 in which: 1) the object of the credit market is not the resources saved but the means of payment created by the banks; 2)

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79 “Not less important for the functioning of the capitalist machine is it that banks should be independent agents. If they are to fulfil the function which has been illustrated by the analogy with the socialist board which examines and passes upon the innovations envisaged by the executive, they must first be independent of the entrepreneurs whose plans they are to sanction or to refuse… But another kind of independence must be added to the list of requirements: banks must also be independent of politics. Subservience to government or to public opinion would obviously paralyze the function of that socialist board.” Schumpeter 1939, p. 92.

80 Schumpeter 1939, p. 91.
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 is determined by the innovations that are made through investment decisions that are taken in conditions of uncertainty.

We can point out that if the dimension that characterizes the mainstream 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 role of banks is not to evaluate the different productivity of land plots, nor to verify the quality of used cars, but it is to decide whether or not to finance investment projects whose effects will be produced at an uncertain date in the future. Their decisions affect the evolution of the entire society which bears the risk of the operations; by their decisions, banks express the consensus of society on the projects that the entrepreneurs aim to carry out.

Finally, we can underline that the Keynes-Schumpeter approach leads us to ask questions about the financial structure that are not relevant according to the mainstream theory. 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 mainstream theory does not give much importance. The reason for this lack of attention is evident: if one agrees that the intermediaries’ task is to overcome the problems
connected with the presence of imperfections, 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.¹⁸¹

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.⁸²

In the second place, we may ask if the degree of consensus on the part of society with regard to the financing decisions taken by the

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¹⁸¹ “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).

¹⁸² “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 protect an inefficient industrial structure.” Minsky (1982, p. 56).
financial institutions alters as a result of changes in the 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.

Conclusions

This paper is founded on the belief that a synthesis between the theories of Keynes and Schumpeter is capable of justifying the non-neutrality of money and of financial aggregates; these justifications do not emerge if one considers the two theories separately. This synthesis has been elaborated starting from a point which Keynes and Schumpeter have in common: the belief that the diffusion of fiat money completely transforms the structure of the economy, making it very different from a barter economy. In the General Theory, Keynes notes that the presence of fiat money is the necessary element to justify the presence of involuntary unemployment, giving in this way importance to the money market and to the stock of value function of money. On the other hand, Schumpeter gives prominence to the credit market and the role of banks in the process of financing innovations; this process is at the root of the continuous evolution of the capitalist economy. The Keynes-Schumpeter approach is based on the following points:

a) it is recognised that Schumpeter’s critique of Keynes is well founded; according to this critique Keynes elaborated a static theory which overlooks the implications of investment decisions on the level and the composition of production capacity. On the other hand, the full employment hypothesis assumed by Schumpeter is eliminated;
b) particular relevance is given to the works published by Keynes between 1937 and 1939 in which he deals with the problem of how firms’ investment decisions are financed. This allows us to emphasise the strong link between Keynes’s analysis and that of Schumpeter; both in fact point out that the object of credit is not the saved resources, but the fiat money created by banks;

c) we have pointed out that attributing importance to the credit market does not mean cancelling the money market; it is possible to provide a specification for both markets;

d) the monetary nature of profits and interest rates is emphasised. The presence of fiat money transforms a barter economy into a production economy which is characterised by the presence of agents betting on their ability to use the purchasing power given them by banks for production activities which will yield a monetary profit. Profit is not the compensation for a production input, nor the compensation for risk, but rather it is the monetary spread between revenues and costs.

e) the presence of fiat money characterises an economy with a significant amount of investment in which uncertainty becomes relevant.

f) finally, this approach highlights the social function carried out by banks. In fact, according to this approach, banks are not mere intermediaries whose task is to facilitate the transfer of savings from households to firms by overcoming the effects of the imperfections of the real world. Keynes’s and Schumpeter’s analyses lead us to conclude that, when fiat money is present, the credit market is very different from that in a world in which real goods are traded, such as, for instance, the plots of land in Stiglitz and Weiss (1990) and it is different from Akerlof’s used car market. This analysis shows that banks’ choices do not lead the system to that ideal equilibrium situation that would be reached in a world in which savers directly finance firms, and highlights how banks’ decisions influence the level of income, its composition and its distribution.
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