

# The characteristics of a monetary economy: a Keynes–Schumpeter approach

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Mainstream monetary theory considers money only as an instrument meant to facilitate trading without having any effect on income or on the evolution of the economic system. The aim of this paper is to elaborate a monetary theory capable of supporting the thesis of money non-neutrality based on the arguments developed by Keynes and Schumpeter. The synthesis of the theories of these two great economists will be formulated starting from the two points which are common in the views of Keynes and Schumpeter. First, in contrast with 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. Second, 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 banks; in contrast with the mainstream theory, they do not consider the credit market as the mirror image of the goods market.

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## Introduction

Schumpeter (1954, p. 278) classifies monetary theories into two categories: *real analysis* and *monetary analysis*. In the first category, he includes those theories that consider money only as an instrument meant to facilitate trading without having any effect on economic processes; these theories state the money neutrality principle. In the second category, Schumpeter inserts those theories that consider money an essential element in understanding how the economic system works.

Using this classification, we can place contemporary monetary theory, characterised by the predominance of the monetarist thesis in the version elaborated by the new classical macroeconomics, in the *real analysis* category. This theory is characterised by three

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features. The first concerns the specification of the functions of money: according to mainstream theory, the fundamental function of money is that of means of exchange—by introducing money, it is possible to reduce transaction costs. Mainstream theory confirms the validity of the Quantity Theory of Money, according to which the income and wealth levels of a nation do not depend on the quantity of money in circulation. In his Nobel Lecture, Lucas (1996) stresses that the fundamental advance achieved by contemporary monetary theory over the version of the Quantity Theory of Money proposed by Hume lies in its explanation of the apparent contradiction between the proposition that variations in the quantity of money produce, at least temporarily, real effects, and the proposition that these variations do not cause effects on real aggregates; this contradiction is explained by distinguishing between anticipated changes in the quantity of money and non-anticipated changes.

The second element that characterises the dominant monetary theory is 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 having 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.<sup>1</sup> 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 seigniorage that the state can obtain through control of the money production process. Friedman and Schwartz (1963, 1982) describe different episodes showing how states were able to obtain great advantage from the use of a fiat money. They (Friedman and Schwartz, 1986) point out, though, that in contemporary developed economies it seems that Fisher'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 recent decades in such countries conditions have arisen that have reduced states' ability to obtain revenues by using inflation.

The third feature of mainstream monetary theory regards the role of the credit market. This theory separates the money market from the credit market; Friedman and Schwartz (1982, p. 26) assert that the two markets are characterised by different prices: the price of money corresponds to the quantity of goods that can be purchased with a unit of money, so that 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 level, 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 or 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

<sup>1</sup> 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), Kiyotaki and Wright (1989), Gravelle (1996) and Dowd (1999).

real sector.<sup>1</sup> To leave aside the credit market means also to overlook the financial intermediaries, whose basic role is to facilitate the transfer of resources from savers to firms.

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. It aims to show that the integration of the theories of these two great economists enables us to justify the non-neutrality of money in a more complete and thorough way than Keynes and Schumpeter succeed in doing separately. This theory will be formulated starting from the two points which are common to the views of both Keynes and Schumpeter. First, in contrast with mainstream theory, Keynes and Schumpeter state that the diffusion of a fiat money induces a radical modification in 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. Second, 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 banks; in contrast with mainstream theory, they do not consider the credit market as the mirror image of the goods market.

This paper is divided into two sections. In the first, some important differences between the monetary analysis of Keynes and that of Schumpeter are pointed out. In *The General Theory*, Keynes emphasises the store of wealth function of money and considers the liquidity preference theory as the necessary element that justifies the existence of involuntary unemployment equilibrium. In contrast, Schumpeter highlights the role of the banks in the process of money creation within the credit market. I think it is appropriate to integrate these two perspectives; for this purpose, I underline the need to construct a theoretical model capable of specifying two distinct money and credit markets. I maintain that the explicit consideration of a credit market separate from the money market is consistent with what Keynes affirms in some works published between 1937 and 1939 in response to the criticism levelled at *The General Theory*. In the second section, I show how a theoretical approach that synthesises the thinking of Keynes and Schumpeter enables us not only to justify the typically Keynesian conclusion that price flexibility is not capable of guaranteeing full employment, but also to highlight three important aspects of a monetary economy: (a) the relation between money and uncertainty; (b) the monetary nature of capital, profits and interest rates; and (c) the social role of banks.

## **1. Keynes and Schumpeter: a possible synthesis notwithstanding some differences**

### *1.1 Keynes and Schumpeter: some differences*

Keynes and Schumpeter state that the diffusion of a fiat money radically changes the structure of the economy. Keynes (1933A, 1933B) maintains that the spread of fiat money profoundly changed the characteristics of the economic system by distinguishing between

<sup>1</sup> McCallum (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 labour 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’.

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. Like Keynes, Schumpeter states that the presence of a fiat money gives the economy a completely different structure from 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; such an economy always tends to replicate itself unchangingly, or is in any case subject to very gradual changes that do not alter the structure of the economic system, or to changes triggered by extra-social factors such as natural conditions, or by extra-economic social factors such as wars, or by consumer tastes; it is an economy in which the production decisions are influenced by consumers' 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.

Both Keynes and Schumpeter maintain that it is not possible to describe the way in which a *monetary economy* (*capitalist economy*) works by adopting the classical theory which describes a barter economy, but they justify money non-neutrality using different arguments. Keynes maintains that the presence of a fiat money is the necessary element that justifies the existence of involuntary unemployment equilibrium. A *real-exchange economy* is an economy in which there is a mechanism which ensures 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 Say's Law does not apply, and the level of income is subject to fluctuations that depend on oscillations in aggregate demand. Keynes (1933B, p. 85) states that these fluctuations are made possible by the presence of a fiat money: 'the fluctuations in effective demand can be properly described as a *monetary phenomenon*'. We can distinguish two explanations of this statement which are grounded in the store of wealth function of money. The first explanation is based on what Keynes (1936, ch. 17) defines as the essential properties of fiat money: (a) zero elasticity of production and (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 realised.<sup>1</sup> The second explanation is grounded in the interest rate theory developed in *The General Theory*. Keynes conceives the interest rate as the price of money and concludes that the non-neutrality of money is explained by the fact that the interest rate—determined by the public's demand for liquidity—exceeds the level compatible with full employment. These explanations of the money non-neutrality theory have two

<sup>1</sup> 'Unemployment develops, that is to say, because people want the moon;—men cannot be employed when the object of desire (i.e., money) is something which cannot be produced and the demand for which cannot be readily choked off. There is no remedy but to persuade the public that green cheese is practically the same thing and to have a green cheese factory (i.e. a central bank) under public control' Keynes (1936, p. 235) On this point see, for example, Kregel (1980), Davidson (1994) and Skidelsky (1996).

characteristics: (a) they focus on the money market rather than the credit market; and (b) they give prominence to the store of wealth function of money.

Schumpeter's analysis has different characteristics: (a) it is focused on the credit market and not on the money market and (b) it gives importance to the means of payment function of money and not to its store of wealth function. Schumpeter (1943, p. 175) defines a *capitalist economy*, as an economic system that possesses three characteristics:

capitalism will be defined by three features of industrial society: private ownership of the physical means of production; private profits and private responsibility for losses; and the creation of means of payments—banknotes or deposits—by private banks. The first two features suffice to define private enterprise. But no concept of capitalism can be satisfactory without including the set of typically capitalist phenomena covered by the third.

He further emphasises (Schumpeter, 1943, p. 178) that the key element of a *capitalist economy* is change:

Unlike other economic systems, the capitalism system is geared to incessant economic change. Its very nature implies recurrent industrial revolutions which are the main sources of the profit and interest incomes of entrepreneurs and capitalists and supply the main opportunities for new investments ... Whereas a stationary feudal economy would still be a feudal economy, and a stationary socialist economy would still be a socialist economy, stationary capitalism is a contradiction in terms.

Schumpeter highlights the role of money in the evolution of the capitalist system that 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 views economic crises as the inevitable consequences of the realisation of innovations (see Minsky, 1986).

Schumpeter's aim is to elaborate a theory which can explain the continuous evolution process typical of the capitalist economy and generated by endogenous 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, the adoption of a new production method, or the opening of new markets. The second key element of the process of economic development is the creation of money by banks through credit; Schumpeter (1912, pp. 69–70) 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 ...

The essential role attributed to 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; and (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 productive means already available. Credit becomes a necessary factor for development when innovations are made by new entrepreneurs who do not own means of production. He (Schumpeter, 1912, pp. 79–81) 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. To underline this point, Schumpeter (1912, p. 74) 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 of production resources assumption. Schumpeter introduces this assumption to underline the fact that innovations are realised by withdrawing available productive resources from existing firms and allocating them to the entrepreneurs–innovators lacking means of production. For this reason, he assumes that innovations are introduced in a situation in which all the productive resources are fully utilised.<sup>1</sup> In order to carry out innovations, therefore, a tool allowing the change of ownership and control of existing productive resource is required. This tool is credit: banks, through the creation of bank money, supply the innovators–entrepreneurs with the purchasing power necessary to divert the resources from their traditional uses.

By creating money to finance the innovators–entrepreneurs, the banks alter the distribution of ownership of the means of production. The instrument permitting the ownership and control of the means of production to be transferred to the innovators–entrepreneurs is the inflation, triggered by the fact that the demand for means of production on the part of the innovators–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, enabling the innovator to divert resources from their current allocation. With inflation, it is possible to generate:

a shift in purchasing power among individuals and . . . a transfer of means of production to those individuals to whom credits are granted by means of newly created money. . . . New men and new plans come to the forefront that otherwise would always have remained in the background. The obstacles are removed which private property places in the way of him who does not already have command over means of production. The banking world constitutes a central authority of the economy whose directives put the necessary means of production at the disposal of innovators in the productive organism. . . . The essence of modern credit lies in the creation of such money. It is the specifically capitalistic method of effecting economic progress. It gives scope to the *capitalistic function* of money, as opposed to its market-economy function. (Schumpeter, 1917, pp. 205–6)

Ultimately, the fundamental role of credit described by Schumpeter depends on the fact that, in a capitalist economy, the ownership of means of production is private. Schumpeter (1912, p. 78) argues that, in a socialist economy, the innovation process does not require the use of credit, given that in this system there is a central authority that decides to employ production resources differently from the way in which they were previously used in order to realise the innovations. Schumpeter (1912, p. 83) also points out that the roles of money and credit in a *capitalist economy* are completely different from those in a *pure exchange economy*. In a *pure exchange economy*, money is only an instrument to facilitate trade, which is obtained in exchange for goods or services; it is a ‘certificate for previous production’, and its presence does not influence the structure of the economy. Conversely, bank money does not embody any right to realised production, but it is the purchasing power created by banks that allows innovators–entrepreneurs to use existing production resources even if

<sup>1</sup> ‘[W]henever we are concerned with fundamental principles, we must never assume that the carrying out of new combinations takes place by employing means of production which happen to be unused. In practical life, this is very often the case. There are always unemployed workmen, unsold raw materials, unused productive capacity, and so forth . . . but great unemployment is only the consequence of non-economic events—as for example the World War—or precisely of the development which we are investigating. In neither of the two cases can its existence play a fundamental rôle in the explanation, and it cannot occur in a well balanced circular flow from which we start’ Schumpeter (1912, p. 67). On this point, see Oakley (1990). This assumption is confirmed, albeit less emphatically, in the first chapters of *Business Cycles*, in which Schumpeter summarises his theoretical perspective.

they have never been involved in the production process (see Schumpeter, 1912, p. 107). Schumpeter points out that in a *capitalist economy* banks do not lend purchasing power given to them by savers, but rather they create substitutes for legal-tender money that have the same functions as legal-tender money.<sup>1</sup>

By highlighting that the innovations are brought in thanks to the purchasing power created by banks that allows entrepreneurs–innovators to use existing production resources differently, Schumpeter minimises the importance of saving and investment flows in explaining the evolution of the economic system. Indeed, he observes that innovations do not depend so much on saving and investment flows, but rather they are realised by using existing resources differently.<sup>2</sup> In Schumpeter’s view, the main players in the credit market, therefore, are not savers and 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. (Schumpeter, 1912, p. 125)

### *1.2 Keynes and Schumpeter: a possible synthesis*

The negative judgment that Schumpeter expressed about *The General Theory* testifies to the distance between the theories of Keynes and Schumpeter. Schumpeter 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 in production and in employment. Schumpeter believed that a static theory was wholly unsuitable to describe how a modern capitalist economy works.<sup>3</sup>

<sup>1</sup> ‘[A] deposit, though legally only a claim to legal-tender money, serves within very wide limits the same purposes that this money itself would serve. Banks do not, of course, “create” legal-tender money and still less do they “create” machines. They do however, something—it is perhaps easier to see this in the case of the issue of banknotes—which, in its economic effects, comes pretty near to creating legal-tender money and which may lead to the creation of “real capital” that could not have been created without this practice ... It is much more realistic to say that the banks “create credit”, that is, that they create deposits in their act of lending, than to say that they lend the deposits that have been entrusted to them’ Schumpeter (1954, p. 1114). The same concept can be found in Schumpeter (1912, p. 74): ‘The banker ... is not so much primarily a middleman in the commodity “purchasing power” as a *producer* of this commodity ... He is essentially a phenomenon of development ... He makes possible the carrying out of new combinations, authorises people, in the name of society as it were, to form them. He is the ephor of the exchange economy.’

<sup>2</sup> ‘That rudiment of a pure economic theory of development which is implied in the traditional doctrine of the formation of capital always refers merely to saving and to the investment of the small yearly increase attributable to it. In this it asserts nothing false, but it entirely overlooks much more essential things. The slow and continuous increase in time of the national supply of productive means and of savings is obviously an important factor in explaining the course of economic history through the centuries, but it is completely overshadowed by the fact that development consists primarily in employing existing resources in a different way, in doing new things with them, irrespective of whether those resources increase or not ... Different methods of employment, and not saving and increases in the available quantity of labor, have changed the face of the economic world in the last fifty years’ Schumpeter (1912, p. 68).

<sup>3</sup> ‘[R]easoning on the assumption that variations in output are uniquely related to variations in employment imposes the ... 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 revolutionised. 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. ... Since Mr. Keynes eliminates the most powerful propeller of investment, the financing of changes in production functions, the investment process in his theoretical world has hardly anything to do with the investment process in the actual world ...’ Schumpeter (1936, p. 794).

In this work, we maintain that, in spite of these differences, it is possible to elaborate a theoretical approach that contains the more meaningful aspects of the theories of both Keynes and Schumpeter; an approach which overcomes the limits of each individual theory. This approach is based on three points. First, this approach acknowledges that Schumpeter's critique of *The General Theory* should be considered as well founded; Keynes' analysis neglects the consequences of investment decisions on the overall production capacity of the economy. This limit has been acknowledged by economists such as Kalecki (1971), Kaldor (1985) and Hicks (1989). 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. Several economists have emphasised the desirability of integrating the Keynesian theory of income determination with Schumpeter's theory of economic development.<sup>1</sup>

Second, this approach accepts the Keynesian theory of income and abandons the hypothesis of full employment assumed by Schumpeter. This hypothesis allows Schumpeter to affirm that credit is the tool by which the productive resources are subtracted from the control of the existing enterprises and put at the disposition of the innovating entrepreneurs. By accepting the Keynesian theory of income and the principle of effective demand, we can emphasise that innovations are carried out, unlike what was specified by Schumpeter, through investment decisions; in this case, it is not necessary to assume the presence of the full employment of productive resources.

Third, the Keynes–Schumpeter approach affirms the principle of money non-neutrality. We have seen that Keynes and Schumpeter elaborate two different monetary theories. Keynes's analysis focuses on the money market and gives prominence to the store of wealth function of money. 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 that is transferred to firms through a credit contract; hence, Schumpeter (1912, ch. III) does not distinguish between demand for capital, money demand and credit demand. He identifies the money market with the credit market, since he gives no relevance to the store of wealth 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 for 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.<sup>2</sup>

I believe that the theories of Keynes and Schumpeter can be integrated by building a model that specifies distinct money and credit markets; in this way, the money demand

<sup>1</sup> Goodwin (1993, p. 83), referring to Keynes' and Schumpeter's theories, states: 'By a judicious amalgam of the two approaches, one should be able to arrive at a superior analysis'. Minsky (1986, p. 113) says that 'further progress in understanding capitalism may very well depend upon integrating Schumpeter's insights with regard to the dynamics of a capitalist process and the role of the innovative entrepreneurs into an analytical framework that in its essential properties is Keynesian. Capitalism has exhibited both fragility and resiliency over the century since the death of Marx and the birth of Keynes and Schumpeter. Keynes' analytical structure enables us to understand and even cope with the fragility of capitalism. Schumpeter's vision of entrepreneurship helps us understand the resilience of capitalism and in particular how policy reactions to slumps that reflect Keynesian insights lead to resilience and add new dimension to the fragility of financial structures.' See also Morishima (1992); Minsky (1993) and Vercelli (1997).

<sup>2</sup> Schumpeter (1939). We can note that Schumpeter's thesis can also be found in the definition of liquidity elaborated in the 1950s by the Radcliffe Committee and used by Kaldor in his critique of Monetarism; see Bertocco (2001).



and the credit demand functions are separated. We can hold, following Keynes, 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, following Schumpeter, 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 separately 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, on the one hand, describes all the assets and 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; indeed, following Schumpeter, we can consider the credit market as the place where banks create the purchasing power that allows entrepreneurs to make innovations. If we assume that innovations are introduced by means of investment decisions, we can conclude that the demand for credit depends on the investment decisions of firms. Firms intending 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: (a) who do not have liquidity; and (b) who, when they obtain the cash, undertake to pay it back at a fixed future date. By specifying the credit demand function, we distinguish the firms' demand for liquidity to finance investment decisions from the demand for money, which instead reflects the portfolio decisions of wealth owners. As for the credit supply function, we can hypothesise that the supply of credit depends on the decisions taken by banks, and that it is independent of the savings flow. To complete the description of the credit market, we specify the factors which determine the interest rate on loans. This explanation should be consistent with Keynes's conclusion that the interest rate is not influenced by savings decisions. We can assume that banks define the rate on loans as a function of the official rate of interest set by the monetary authorities.<sup>1</sup>

I believe that the specification of a credit market distinct from the money market is not in conflict with Keynes's theory, but it enables us to highlight some concepts elaborated by Keynes in two 1933 works and in some works published between 1937 and 1939. After introducing the distinction between *real-exchange economy* and *monetary economy*, Keynes declares that a *monetary economy* is an economy in which the presence of fiat money radically changes the nature of the exchanges compared with a *real-exchange economy*:

The distinction which is normally made between a barter economy and a monetary economy depends upon the employment of money as a convenient means of effecting exchanges—as an instrument of great convenience, but transitory and neutral in its effect. It is regarded as a mere link between cloth and wheat, or between the day's labour spent on building the canoe and the day's labour spent in harvesting the crop. *It is not supposed to affect the essential nature of the transaction from being, in the minds of those making it, one between real things, or to modify the motives and decisions of the parties to it. Money, that is to say, is employed, but is treated as being in some sense neutral.* (Keynes, 1933A, p. 408)

<sup>1</sup> Several post-Keynesians have stressed that it is necessary to specify a credit market distinct from the money market; see, for example, Wray (1992), Howells (1995), Arestis and Howells (1996), Arestis (1997), Dow (1996, 1997), Rochon (1999) and Palley (2002). A macroeconomic model which specifies a credit market distinct from the money market can be found in Bertocco (2005).

The change in the nature of transactions depends on the characteristics of the mechanism by which fiat money is created. Fiat money, which is not a commodity, is not produced by labour. The production of fiat money is a prerogative of special entities, such as banks. The entities that are able to create money can buy commodities even if they do not possess goods. Banks do not buy commodities, but they finance agents against the promise to repay the amount received at a given future date. In either case, the use of fiat money alters the nature of exchange, since 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; instead, it is necessary to meet the criteria used by banks for granting loans.

Keynes's analysis of 1933 highlights a point that is overlooked in *The General Theory*: the mechanism through which a fiat money is created. In *The General Theory*, particular emphasis is put on the concept of money demand, while the analysis of the mechanisms through which money is introduced into the economic system is given less attention. The only mechanisms considered are open market operations. The direct link between money and production disappears; only an indirect relationship between money and aggregate demand, based on the relationship between money and the interest rate, is considered. This is a partial analysis; Keynes's 1933 observation that the diffusion of a fiat money alters the nature of exchange suggests that the money creation activity through which banks finance particular economic agents is important. In his 1933 papers, Keynes, still working within the framework of his *Treatise on Money* (1930), specifies a direct relationship between money and production by underlining that the availability of money is the necessary condition that enables the entrepreneur to initiate production by purchasing the necessary factors of production. In recent years, the monetary circuit approach has attributed particular importance to this aspect of Keynes's analysis (see, for example, Graziani, 1996, 2003; Parguez and Seccareccia, 2000; Fontana, 2000; Rochon, 1999, 2003).

I believe that it is more consistent with Keynes's income theory to study the relationship between money and production by giving prominence to the principle of effective demand and, in particular, by highlighting the issue of how firms' investment decisions are financed. The Keynesian inversion of the causal relation between savings and investments implies that investment decisions are not financed by savings. This leaves open the problem of specifying how firms obtain the money needed to realise the desired investments. The hypothesis considered in this work is that firms finance their investments with the new money created by banks. This framework is compatible with the post-Keynesian view that the diffusion of bank money makes transparent the Keynesian theory's causal relationship between investments and savings (see Kaldor and Trevithick, 1991; Trevithick, 1994; Chick, 1986, 1997, 2000; Dalziel, 1996).

Keynes tackled the problem of the financing of spending decisions in some works published between 1937 and 1939 (see Keynes, 1937B, 1937C, 1939) in response to the criticisms of *The General Theory*, and, in particular, to Ohlin's critique 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 (1937C, p.216) 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 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 cannot arise from *ex-ante saving* (for a more thorough analysis, see Bertocco, 2005). 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. (Keynes, 1937C, p. 222)

We can conclude that from the works of Keynes and Schumpeter a common credit theory emerges which is characterised by two propositions: (a) the object of credit is not saving but the money created by the banks; and (b) the credit market is based on the relationship between banks and firms and not on the saver–investor relation. A theoretical model specifying a credit market which is separate from the money market allows us to define the most important aspects that distinguish a *monetary economy* from a *real-exchange economy*. These aspects are described in the second part of the paper.

## 2. The characteristics of a monetary economy

We can identify four elements that characterise a monetary economy. First, we observe that the specification of the credit and debt linkages involving firms, banks and wealth owners allows us to criticise the thesis according to which downward wages and prices flexibility would guarantee that the full employment equilibrium could be reached. Many Keynesian economists have emphasised that a reduction in the price level causes a transfer of resources from debtors to creditors and increases the risk of bankruptcy for firms (examples are Tobin, 1980; Minsky, 1980, 1982; Palley, 2002; Stiglitz, 2002). The other three elements characterising a *monetary economy*, and which will be analysed in the following sections, are: (a) the relation between money and uncertainty; (b) the monetary nature of capital, profits, interest rates; and (c) the social function of banks.

### 2.1 *The relation between money and uncertainty*

The presence of bank money and the specification of the link between investment decisions and innovations allow us to justify the importance given to the phenomenon of uncertainty in Keynes's analysis. As is widely known, Keynes (1937A) states that the basic difference between his own theory and the classical one is the hypothesis introduced about the way expectations regarding future results of economic decisions are specified. The classical theory assumes that it is possible to represent these results objectively 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. In *The General Theory*, the presence of uncertainty is the necessary condition for attributing importance to the store of wealth function of money and for defining the interest rate as: 'the premium which has to

be offered to induce people to hold wealth in some form other than hoarded money' (Keynes 1937A, p. 116). This definition of the interest rate allows Keynes to state that the economic system is subject to strong fluctuations caused by the instability of investments. In fact, Keynes (1937A, p. 119) states that, in the presence of uncertainty, the liquidity preference curve assumes such features in terms of stability and interest rate elasticity that it causes investment fluctuations to generate strong income variations. In conclusion, in *The General Theory* uncertainty is an exogenous factor whose presence does not depend on the existence of money.

Keynes's and Schumpeter's analysis about the role of bank money and of the credit market allow us to specify a causal relation between money and uncertainty and show that the employment of bank money is the necessary condition enabling us to highlight the importance of the uncertainty element. The causal sequence that links bank money and uncertainty is based on two points. The first one is the relation between bank money and investment decisions. As we have seen in Section 1, Keynes and Schumpeter assert that the diffusion of fiat money radically changes the structure of the economic system. Keynes states, as we have recalled, that the diffusion of bank money alters the nature of the exchanges. When bank money is used, it is not necessary to own goods in order to obtain money, but it is necessary to satisfy the banks' criteria in granting credit. The agents who obtain money are the firms that seek liquidity in order to realise their investment decisions; as we have seen in Section 1, the specification of the credit market allows us to explain how investments are financed in a world in which the relation between investment decisions and saving decisions is the reverse of what the classical theory holds.

The second point of the sequence that links bank money and uncertainty is the relation between investment decisions and uncertainty. Keynes underlines this relation when he accuses the classical theory of being able to describe just an economy without uncertainty based on consumption decisions, and of not being able to explain the workings of an economy in which investment decisions have a substantial bearing. Keynes associates the presence of uncertainty with the existence of a high proportion of investment decisions:

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)

This link is emphasised by Davidson (2000), who describes the differences between mainstream and Keynesian theory by distinguishing between *ergodic systems* (or immutable-reality models) and *non-ergodic systems* (or transmutable-reality systems). With the first term, Davidson refers to economic systems that replicate themselves unchangingly, or that are subject to alterations predictable in probabilistic terms. With the second term, Davidson refers to systems characterised by a process of continuous transformation triggered by investment decisions; he declares that the presence of the Schumpeterian entrepreneur is a necessary element of a *non-ergodic system*:

If entrepreneurs have any important function in the real world, it is to make crucial decisions. Entrepreneurship . . . by its very nature, involves cruciality. To restrict entrepreneurship to robot decision-making through ergodic calculations in a stochastic world . . . ignores the role of the

Schumpeterian entrepreneur—the creator of technological revolutions bringing about future changes that are often inconceivable to the innovative entrepreneur. Entrepreneurs do not merely discover the future, they create it ... Probability models are a beguiling representation of decision-making only in a world where only routine decisions are made ... these models cannot explain the essential creative function of entrepreneurial behaviour in a Keynes–Schumpeter world where the reality is transmutable. (Davidson, 2000, p. 113)

Keynes and Schumpeter deem uncertainty to be 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.<sup>1</sup> Taking into account their observations about the role of banks in the process of investment financing, we can conclude that the presence of fiat money is an essential element in a constantly evolving economy as a result of realised investment decisions; the diffusion of a fiat money is linked to the development of an economy in which investment decisions become relevant and in which the presence of uncertainty becomes an essential factor. In conclusion, we can state that uncertainty is not merely an exogenous dimension, but it becomes a factor whose presence is explained by the spread of bank money.

## 2.2 *The monetary nature of capital, profits and interest rates*

Keynes (1933B) uses the distinction put forward by Marx between the sequence good–money–good (G–M–G'), which characterises a *real-exchange economy*, and the sequence money–good–money (M–G–M'), which instead characterises a *monetary economy*, to emphasise the fact that the presence of a fiat money changes the law of production. Keynes stresses that the aim of an entrepreneur is not to produce goods, but to obtain a profit in monetary terms, i.e., a positive difference between monetary revenues and monetary costs; we can maintain that profit is a dimension which characterises a monetary economy. This is the same definition used by Schumpeter (1912, p. 128): 'Entrepreneurial profit is a surplus over costs. From the standpoint of the entrepreneur, it is the difference between receipts and outlay in a business ...'

This apparently trivial definition has an important meaning that can be understood by specifying the concept of capital which emerges from the theory of these two great economists. Schumpeter affirms that the definition of capital as a set of goods used as means of production cannot be applied to a capitalist system, because it is a definition that can be adapted to any economic system.<sup>2</sup> Schumpeter's definition reflects the importance

<sup>1</sup> It can 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 future effects of economic decisions on the basis of observations on the past. Schumpeter (1912, pp. 84–5) 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 usually very accurately known to him ... Of course he must still foresee and estimate on the basis of his experience. But many things must remain uncertain, still others are only ascertainable within wide limits, some can perhaps only be "guessed". In particular, this is true of those data which the individual strives to alter and those which he wants to create ... Carrying out a new plan and acting according to a customary one are things as different as making a road and walking along it ... As military action must be taken in a given strategic position even if all the data potentially procurable are not available, so also in economic life action must be taken without working out all the details of what is to be done. Here the success of everything depends upon intuition, the capacity of seeing things in a way which afterwards proves to be true, even though it cannot be established at the moment, and of grasping the essential fact, discarding the unessential, even though one can give no account of the principles by which this is done'.

<sup>2</sup> '[C]apital defined so as to consist of goods belongs to every economic organisation and hence is not suitable for characterising the capitalistic one ...' Schumpeter (1912, p. 117); and again: '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).

that he assigns to bank money in the development process; in fact, he identifies capital with the purchasing power made available to entrepreneurs 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’ (Schumpeter, 1912, p. 122).

Also, Keynes (1939) highlights the monetary nature of capital by criticising the traditional theory 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. Disharding and credit expansion provides not an *alternative* to increased saving, but a necessary preparation for it. It is the parent, not the twin of increased saving. (Keynes, 1939, p. 281)

By specifying the monetary nature of capital, Schumpeter (1939, p. 80) affirms that profits cannot be considered as the result of the productivity of a particular productive factor; he (Schumpeter, 1912, p. 154) considers profits as a phenomenon present only in a monetary economy in which innovations, financed by money created by the banks, attribute to the entrepreneurs a monopolistic power that allows them to get a monetary surplus over costs.

Profits cannot even be considered as 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 finances himself out of former profits . . . the risk falls on him as capitalist or as possessor of goods, not as entrepreneur. Risk-taking is in no case an element of the entrepreneurial function. Even though he may risk his reputation, the direct economic responsibility of failure never falls on him. (Schumpeter, 1912, p. 137)

Moreover, Keynes and Schumpeter highlight the monetary nature of the interest rate; it does not constitute the reward for having renounced consumption, as the supply of credit does not coincide with the saving. 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, 1912, p. 183; 1939, p. 100), and emphasises (Schumpeter, 1912, p. 195) that the transaction that generates interest is not the exchange of goods between savers and firms, but the exchange of money taking place on the credit market between banks and firms. Schumpeter (1939, p. 101) 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 . . . The roots of this idea reach very far into the past . . . 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.

Keynes's analysis also leads us to consider as not valid the distinction made by Wicksell between the monetary interest which is fixed by banks and the natural interest. Indeed, when introducing the distinction between *real-exchange economy* and *monetary economy*, Keynes (1933A, p. 410) states that it is not possible to apply to a *monetary economy* the laws that hold for a *real-exchange economy*. The concept of a natural rate of interest can be applied in a world in which the object of credit is real goods but not in a world in which the object of credit is bank money.

### *2.3 The social role of banks and the dimension of consensus*

The last element that characterises a monetary economy following the Keynes–Schumpeter approach is the specification of the role of the banks. This approach leads us to define the role of banks in a completely different way from neoclassical theory. According to this theory, the function of banks is simply to facilitate the transfer of resources from savers to firms, thus overcoming the imperfections which are present in the real world and absent in a theoretical world without frictions in which savers finance firms directly. 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 that hinders the direct financing of firms by savers (for a critical analysis of this approach, see Bertocco, 2004). The NKs maintain that the credit market works like Akerlof's used-car market. Akerlof (1970) 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 merchants who specialise in evaluating the quality of goods. 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 acquire information, thereby eliminating the problems connected with the presence of asymmetric information.

This analysis of the role of banks does not coincide with that emerging from the works of Keynes and Schumpeter. In these works it is maintained that the presence of banks is connected to the diffusion of bank money; the object of the credit is not constituted by the savings but by the money created by banks. The diffusion of bank money allows us to explain the importance of investment decisions and of the dimension of uncertainty. 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 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 (1937A) maintained that in the presence of uncertainty, the evaluation criteria used to take economic decisions are subject to sudden changes. We can therefore say that the banks' evaluation criteria can also change suddenly, causing considerable instability in the economic system.<sup>1</sup>

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. We can underline the differences between the neoclassical

<sup>1</sup> Minsky (1975, 1980, 1982) is the post-Keynesian economist who studied most extensively the instability of the capitalist economies characterised by the presence of sophisticated financial institutions.

theory and the Keynes–Schumpeter approach by maintaining that Keynes and Schumpeter emphasise the ‘social role’ of the banks. If we consider the Keynesian income theory, we 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 the classical theory, and when the consequences of bank decisions on the evolution of the capitalist system are considered; this evolution process is generated by investment decisions financed via creation of bank money. This point is effectively emphasised by Morishima (1992, p. 20):

the vision that the financial sectors play a crucial role in the economy is common between Schumpeter and Keynes. It then follows 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 building industry. In the long run the economy will turn out to be of a greatly different kind according to which of these options is taken.

The awareness of the social role carried out by banks is particularly strong in Schumpeter, who notes that they have the same function as the central authority in a socialist economy. In a socialist economy, the means of production are publicly owned, and so it is the central 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 central authority is carried out by the banks, who offer entrepreneur–innovators the purchasing power to enable them to use the productive factors, diverting them away from the uses for which they were previously destined (Schumpeter, 1939, p. 86).

The importance that Schumpeter attributes to the role of the banks emerges from his definition of capitalism. As we saw in Section 1.1, he states that capitalism is characterised not only by private ownership of the physical means of production and by private profits, but also by the ‘creation of means of payment . . . by private banks’. He maintains that a capitalist economy cannot function without the presence of an institution like the banks, which condition the evolution of the economic system through their assigning to the entrepreneurs–innovators, via credit, control of the existing means of production.<sup>1</sup> Schumpeter highlights this point, observing that in a capitalist economy the principle of consumer sovereignty, in accordance with which the tastes and the preferences of consumers drive the decisions of production of the enterprises, is not valid. The specification of the role of credit in the process of realisation of innovations allows us to conclude that consumers’ choices are conditioned by the decisions of entrepreneurs and banks;<sup>2</sup> Schumpeter (1939, p. 47) illustrates this point very effectively:

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

<sup>1</sup> According to De Vecchi (1995, p. xiv) we can deduce from Schumpeter’s theory that: ‘1) Under capitalism individuals can establish economic relationships with one another only if institutions exist to regulate their actions. They acquire property rights in particular, not because they operate within a market which distributes “control” over production according to their relative merits, but because they submit to selection and “supervision” by specific economic institutions. 2) The intervention of institutions helps to transform society. 3) The process of transformation may go in many directions. Society is subject to movements which are neither preordained nor automatic, any more than they are the result of individual choices’.

<sup>2</sup> ‘[I]nnovations 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).



display any such initiative wish to have electronic lamps or rayon stockings, 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.

Keynes and Schumpeter 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. Schumpeter (1912) underlines that the entrepreneur–innovator does not risk his/her 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.

Awareness of the banks' social function leads Schumpeter (1939, pp. 90–1) to specify the features of the banker's behaviour. First, the banker must know how to assess the characteristics of the investment project to be carried out and the personality of the entrepreneur. Second, as the banks act on behalf of society and not of particular agents, they must stay independent of firms and political power.<sup>1</sup>

On the grounds of these considerations about 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 financing firms directly. The presence of a complex financial structure eliminates the negative effects connected, for example, 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 neutrality of financial variables, as the function of 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 finance firms directly, and financial institutions have no role at all.

The Keynes–Schumpeter approach leads us to analyse in a more complex way the role of the financial structure. This approach underlines that bank money, banks and the 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) 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 resources; and (4) the evolution of the economic system is determined by the innovations made through investment decisions that are taken in conditions of uncertainty.

We can point out that, if the dimension that characterises the mainstream approach is that of the neutrality of the financial structures, the dimension that marks the

<sup>1</sup> 'If (banks) are to fulfill the function which has above been illustrated with the analogy with that 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. This means, practically speaking, that banks and their officers must not have any stake in the gains of enterprise beyond what is implied by the loan contact. . . . 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. It also paralyzes a banking system. This fact is so serious because the banker's function is essentially a critical, checking, admonitory one. Alike in this respect to economists, bankers are worth their salt only if they make themselves thoroughly unpopular with governments, politicians, and the public' (Schumpeter, 1939, p. 92).

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 firms' investments. The role of banks is to decide whether or not to finance investment projects whose effects will be produced at an uncertain 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 entrepreneurs plan to carry out.

Finally, we can stress that the Keynes–Schumpeter approach leads us to ask questions about the financial structure that are not relevant according to mainstream theory. The first question can be formulated as follows: given that the banks, in taking their financing decisions, express the consensus of society about the 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 are there 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 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 position to repay the loan. This leads us to give attention to the phase of loan repayment by firms, a problem to which 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 emphasises that the banks' decisions are taken in conditions of uncertainty, then it becomes important to study the factors that put firms in a position to repay the loans granted.

Two references seem to me to be important on this point: the first is Schumpeter's view on the conditions that enable innovating firms to make profits; if a new product is launched by a firm, it will make a profit if it is capable of making consumers accept this new good. In this case, in fact, being the only producer, it will be able to charge a sale price higher than costs.<sup>1</sup> The second reference is to the analysis of Minsky, the post-Keynesian economist who most developed the analysis of the role of financial institutions by specifying the conditions that allow firms to repay loans. Minsky highlights the role of profits in the process of loan repayment, and points out that profits depend on income level. The ability of firms to repay today loans contracted in the past depends on current profits and income, which depend on the investment the firms intend to realise today on the grounds of their profit expectations and of the public sector's spending decisions. Minsky points out that this relation between profits, investment and government debt makes the profit level an incorrect indicator of the efficiency of the investment realised in the past.<sup>2</sup>

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

<sup>1</sup> 'Such a (new) good must first of all be forced on consumers, perhaps even given away gratis. A host of obstacles arise. But when these are overcome and the consumers take to the commodity, there follows a period of price determination solely on the basis of direct valuation and without much regard to costs ...' Schumpeter (1912, p. 135).

<sup>2</sup> 'Whenever the (government) 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).

structures. We have seen that Keynes and Schumpeter highlight the central role of banks. The data concerning the financial structure of firms shows how important channels of financing alternative to the banks are: in particular, for small firms, the importance of self-financing and financing obtained by non-bank intermediaries that operate on private equity markets, while for the large firms we can note the importance of recourse to financing obtained through the public debt market (see Gompers, 1995; Berger and Udell, 1998, 2002; Myers, 2001; Carpenter and Petersen, 2002). 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?

### **3. Conclusions**

This paper presents a synthesis between the monetary theories of Keynes and Schumpeter formulated starting from the two points which are common to their views. First, in contrast to 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. They 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. Second, when Keynes and Schumpeter describe the reasons why money and financial aggregates are not neutral, they highlight the crucial role of the credit market and the banks; in contrast with mainstream theory, they do not consider the credit market as the mirror image of the goods market. In this paper, the points in common between the analysis of credit developed by Schumpeter and the one which can be deduced from some works published by Keynes between 1937 and 1939 are shown.

The paper is founded on the belief that this synthesis permits us to justify the non-neutrality of money in a more complete way than is done by Keynes and Schumpeter separately. In *The General Theory*, Keynes notes that the presence of fiat money is the necessary element to justify the presence of involuntary unemployment, thereby giving importance to the money market and to the store of wealth 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. It has been pointed out that, by integrating the analysis of Keynes and that of Schumpeter, we can show not only that price and wage flexibility are unable to guarantee the achievement of full employment, but we can highlight three aspects of a monetary economy: (a) the relation between money and uncertainty; (b) the monetary nature of capital, profits and interest rates; and (c) the social role of banks. Finally, we can observe that the specification of a credit market distinct from a money market makes it possible to complete Schumpeter's analysis that does not distinguish between the money market and the credit market and does not give prominence to the store of wealth function of money.

### **Bibliography**

- Akerlof, G. 1970. The market for 'lemons': qualitative uncertainty and the market mechanism, *The Quarterly Journal of Economics*, vol. 84, 488–500
- Arestis, P. 1997. *Money, Pricing, Distribution and Economic Integration*, Basingstoke, Macmillan
- Arestis, P. and Howells, O. 1996. Theoretical reflections on endogenous money: the problem with 'convenience lending', *Cambridge Journal of Economics*, vol. 20, 539–51
- Berger, A. and Udell, G. 1998. The economics of small business finance: the roles of private equity and debt markets in the financial growth cycle, *Journal of Banking & Finance*, vol. 22, 703–35

- Berger, A and Udell, G. 2002. Small business credit availability and relationship lending: the importance of bank organizational structure, *The Economic Journal*, vol. 112, Feb., 32–53
- Bertocco, G. 2001. Is Kaldor's theory of money supply endogeneity still relevant?, *Metroeconomica*, vol. 52, no. 1, 95–120
- Bertocco, G. 2004. The New Keynesian monetary theory: a critical analysis, *Studi Economici*, vol. 83, 65–94
- Bertocco, G. 2005. The role of credit in a Keynesian monetary economy, *Review of Political Economy*, vol. 17, 489–511
- Brunner, K. and Meltzer A. 1971. The uses of money: money in the theory of an exchange economy, *American Economic Review*, vol. 61, 784–805
- Carpenter, R. and Petersen, B. 2002. Capital markets imperfections, high-tech investment, and new equity financing, *The Economic Journal*, vol. 112, Feb., 54–72
- Chick, V. 1986. The evolution of the banking system and the theory of saving, investment and credit, *Economies et Sociétés*, 3 (reprinted in Chick, V. 1992. *On Money, Method and Keynes*, New York, St Martin's Press)
- Chick, V. 1997. The multiplier and finance, in Harcourt, G. and Riach, P. (eds), *A 'Second Edition' of The General Theory*, London, Routledge
- Chick, V. 2000. Money and effective demand, in Smithin, J. (ed.), *What is Money?*, London, Routledge
- Dalziel, P. 1996. The Keynesian multiplier, liquidity preference, and endogenous money, *Journal of Post Keynesian Economics*, vol. 18, 311–31
- Davidson, P. 1994. *Post Keynesian Macroeconomic Theory*, Aldershot, Edward Elgar
- Davidson, P. 2000. Uncertainty in economics, in Dow, S. and Hillard, J. (eds), *Keynes, Knowledge and Uncertainty*, Aldershot, Edward Elgar
- De Vecchi, N. 1995. *Entrepreneurs, Institutions and Economic Change*, Aldershot, Edward Elgar
- Dow, S. 1996. Horizontalism: a critique, *Cambridge Journal of Economics*, vol. 20, 497–508
- Dow, S. 1997. Endogenous money, in Harcourt, G. and Riach, P. (eds), *A 'Second Edition' of The General Theory*, London, Routledge
- Dowd, K. 1999. The invisible hand and the evolution of the monetary system, in Smithin J. (ed.), *What Is Money?*, London, Routledge
- Fontana, G. 2000. Post Keynesian and Circuitist on money and uncertainty: an attempt at generality, *Journal of Post Keynesian Economics*, vol. 23, 27–48
- Friedman, M. and Schwartz, A. 1963. *A Monetary History of the United States, 1867–1960*, Princeton, N.J., Princeton University Press
- Friedman, M. and Schwartz. A. 1982. *Monetary Trends in the United States and the United Kingdom*, Chicago, The University of Chicago Press
- Friedman, M. and Schwartz, A. 1986. Has government any role in money? *The Journal of Monetary Economics*, vol. 17, 37–62
- Gompers, P. 1995. Optimal investment, monitoring, and the staging of venture capital, *The Journal of Finance*, vol. 50, 1461–89
- Goodwin, R. 1993. *Schumpeter and Keynes*, in Biasco, S., Roncaglia, A. and Salvati M. (eds), *Markets and Institutions in Economic Development*, London, Macmillan
- Gravelle, T. 1996. What is old is new again, *The Manchester School of Economic and Social Studies*, vol. 44, 388–404
- Graziani, A. 1996. Money as purchasing power and money as a stock of wealth in Keynesian economic thought, in Deleplace, G. and Nell, E. (eds), *Money in Motion*, London, Macmillan
- Graziani, A. 2003. *The Monetary Theory of Production*, Cambridge, Cambridge University Press
- Hicks, J. 1989. *A Market Theory of Money*, Oxford, Oxford University Press
- Howells, P. 1995. The demand for endogenous money, *Journal of Post Keynesian Economics*, vol. 18, 89–10
- Jones, R. 1976. The origin and development of media of exchange, *Journal of Political Economy*, vol. 84, 757–75
- Kaldor, N. 1985. *Economics Without Equilibrium*, London, M.E. Sharpe
- Kaldor, N. and Trevithick, J. 1981. A Keynesian perspective on money, *Lloyds Bank Review*, Vol. 108, 1–19
- Kalecki, M. 1971. *Selected Essays on the Dynamics of the Capitalist Economy 1933–1970*, Cambridge, Cambridge University Press

- Keynes, J. M. 1930. *A Treatise on Money*, in *The Collected Writings*, Vols V and VI, London, Macmillan, 1973 edition
- Keynes, J. M. 1933A. A monetary theory of production, pp. 408–11 in *The Collected Writings*, Vol. XIII, London, Macmillan, 1973 edition
- Keynes, J. M. 1933B. The distinction between a co-operative economy and an entrepreneur economy, pp. 76–106 in *The Collected Writings*, Vol. XXIX, London, Macmillan, 1973 edition
- Keynes, J. M. 1936. *The General Theory of Employment, Interest, and Money*, in *The Collected Writings*, Vol. VII, London, Macmillan, 1973 edition
- Keynes, J. M. 1937A. The general theory of employment, *The Quarterly Journal of Economics*, pp. 109–23 in *The Collected Writings*, Vol. XIV, London, Macmillan, 1973 edition
- Keynes, J. M. 1937B. Alternative theories of the rate of interest, *The Economic Journal*, pp. 241–51 in *The Collected Writings*, vol. XIV, London, Macmillan, 1973 edition
- Keynes J. M. 1937C. The ‘ex ante’ theory of the rate of interest, *The Economic Journal*, pp. 215–23 in *The Collected Writings*, vol. XIV, London, Macmillan, 1973 edition
- Keynes J. M. 1939. The process of capital formation, *The Economic Journal*, pp. 278–85 in *The Collected Writings*, Vol. XIV, London, Macmillan, 1973 edition
- Kregel, J. 1980 Markets and institutions as features of a capitalistic production system, *Journal of Post Keynesian Economics*, vol. 3, 32–48
- Kiyotaki, N. and Wright, R. 1989 On money as a medium of exchange, *Journal of Political Economy*, vol. 97, 927–54
- Lucas, R. Jr 1996. Nobel Lecture: Monetary Neutrality, *Journal of Political Economy*, vol. 104, 661–82
- McCallum, B. 1989. *Monetary Economics. Theory and Policy*, New York, Macmillan
- Menger, K. 1892. On the origin of money, *The Economic Journal*, vol. 2, 239–55
- Minsky, H. 1975. *John Maynard Keynes*, London, Macmillan
- Minsky, H. 1980. Money, financial markets and the coherence of a market economy, *Journal of Post Keynesian Economics*, vol. 3, 21–31
- Minsky, H. 1982 *Can ‘It’ Happen Again? Essays on Instability and Finance*, New York, M.E. Sharpe
- Minsky, H. 1986. Money and crisis in Schumpeter and Keynes, in Wagener, H. and Drukker, J. (eds), *The Economic Law of Motion of Modern Society*, Cambridge, Cambridge University Press
- Minsky, H. 1993. Schumpeter and finance, in Biasco, S., Roncaglia, A. and Salvati, M. (eds), *Markets and Institutions in Economic Development*, London, Macmillan
- Morishima, M. 1992. *Capital and Credit. A New Formulation of General Equilibrium Theory*, Cambridge, Cambridge University Press
- Myers, S. 2001. Capital structure, *Journal of Economic Perspectives*, vol. 15, 81–102
- Oakley, A. 1990. *Schumpeter’s Theory of Capitalist Motion*, Aldershot, Edward Elgar
- Palley, T. 2002. Endogenous money: what it is and why it matters, *Metroeconomica*, vol. 53, 152–80
- Parguez, A. and Seccareccia, M. 2000. The credit theory of money: the monetary circuit approach, in Smithin, J. (ed.), *What Is Money?*, London, Routledge
- Rochon, L. 1999. *Credit, Money and Production*, Aldershot, Edward Elgar
- Rochon, L. 2003. On money and endogenous money: post Keynesian and circulation approach, in Rochon, L. and Rossi, S. (eds), *Modern Theory of Money: the Nature and the Role of Money in Capitalist Economies*, Aldershot, Edward Elgar
- Schumpeter, J. 1934 ( 1912). *The Theory of Economic Development*, Cambridge, MA, Harvard University Press
- Schumpeter, J. 1956 ( 1917). Money and the social product, *International Economic Papers*, vol. 6, 148–211
- Schumpeter, J. 1936. Review of Keynes’s *General Theory*, *Journal of the American Statistical Association*, December, 791–95
- Schumpeter, J. 1951 (1943). Capitalism in the postwar world, *Postwar Economic Problems*, reprinted in Schumpeter, J. *Essays on Economics Topics of J. A. Schumpeter*, edited by Clemence, R., Port Washington, N.Y., Kennikat Press
- Schumpeter, J. 1954. *History of Economic Analysis*, New York, Oxford University Press
- Schumpeter, J. 1964 ( 1939). *Business Cycle. A Theoretical, Historical and Statistical Analysis of the Capitalist Process*, abridged edn, New York, McGraw Hill
- Skidelsky, R. 1996. *Keynes*, Oxford, Oxford University Press

- Stiglitz, J. 2002. Information and the change in the paradigm in economics, *The American Economic Review*, vol. 92, 460–501
- Tobin, J. 1961. Money, capital and other stores of value, *The American Economic Review, Papers and Proceedings*, vol. 51, 26–37
- Tobin, J. 1969. A general equilibrium approach to monetary theory, *Journal of Money Credit and Banking*, vol. 1, 15–29
- Tobin, J. 1980. *Asset Accumulation and Economic Activity*, Chicago, University of Chicago Press,
- Tobin, J. 1982. Nobel lecture: money and finance in the macro-economic process, *Journal of Money, Credit and Banking*, vol. 14, 171–204
- Trevithick, J. 1994. The monetary prerequisites for the multiplier: an adumbration of the crowding-out hypothesis, *Cambridge Journal of Economics*, vol. 18, 77–90
- Vercelli, A. 1997. Keynes, Schumpeter and beyond, in Harcourt, G. and Riach, P. (eds), *A 'Second Edition' of The General Theory*, vol. 2, London, Routledge
- Wray, L. 1992. Commercial banks, the central bank, and endogenous money, *Journal of Post Keynesian Economics*, vol. 14, 297–310