

FRENCH CIRCUIT THEORY

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The concept of the circuit was first used in economics by the Physiocrats of 18th century France. They viewed production as a cycle beginning with advances, that is, capital expenditure, and ending when the goods that had been produced were sold. To that extent, the late 20th century revival of the circuit concept by Bernard Schmitt (1960, 1966, 1984), Jacques Le Bourva (1962), Alain Barrère (1979, 1990) and Alain Parguez (1975), was a salute to a French tradition. This is not the whole story, though. Circuitist thinking, although usually unsung, has in fact underpinned many approaches to economics from Marx to Keynes by way of Wicksell,¹ Schumpeter, Kalecki and J. Robinson.² Indeed, today's French circuit school owes much to Keynes, to whom Schmitt, Barrère and Parguez all referred extensively. And it is Keynes's heterodoxy, as opposed to the conventional neo-classical view of Keynes's economics, that was their source of inspiration. Hence the affinities of French circuitists with post-Keynesians (for a detailed review of common ground and differences, see Deleplace and Nell, 1996, Arena, 1996, Rochon, 1999a). Circuit theory also counts an Italian branch which emerged in the 1980s on Graziani's (1989, 2003) initiative and which explicitly focuses on Keynes's monetary theory of production (cf. Fontana and Realfonzo, 2005). French and Italian circuitist approaches have also inspired post-Keynesians outside Europe, especially in Canada (Lavoie, 1984; Rochon, 1999; and Seccareccia, 1996). This affinity between circuit theory and Keynes's heterodoxy and now post-Keynesian theory will be a recurrent theme in this paper. It should help readers familiar with post-Keynesian literature to grasp the significance of the circuit approach and help also to confirm its veracity.

The second section explains the general significance of the circuit, particularly as opposed to neoclassical economics, and as the underpinning of Keynes's principle of effective demand. The third section deals with the monetary theory behind the circuit approach, which is clearly akin to the theory of endogenous money but also provides new insights. The fourth section looks at how the circuit is involved in economic policy issues. The fifth section will conclude.

THE GENERAL SIGNIFICANCE OF THE CIRCUIT

Circuitists see the economy, meaning the present-day monetary economies of production, as being based on an asymmetrical (hierarchical) relationship between firms (or entrepreneurs) and workers. Firms employ workers and pay them money wages. In spending their money wages, workers gain access to a fraction of the output, the size of that fraction varying according to the price they pay for goods in markets. Symmetrically, firms earn profits formed by the surplus of the price received for the goods sold over the wage-bill the firms paid out, allowing them and their backers to appropriate the complementary part of the output.

First, it shall be seen that the features outlined here set circuit theory apart from the neoclassical view inherited from Smith (1776) and extended by Walras (1926), by which the economy is composed of individual agents who simultaneously supply their productive services on a first set of markets and create demand on a second set for the goods produced. To be clear, circuitists do not of course deny the existence of markets and the correlated role of supply and demand in determining wages and prices. What they refute, by reference to Keynes's notion of the entrepreneur economy, is the idea that market transactions may ultimately be seen as mere exchanges of productive services and goods for one another, with the terms of trade supposedly being determined through adjustments taking place in interdependent markets in conformity with the agents' preferences. Secondly, it will be confirmed that the circuitist approach, as its proponents argue, implicitly underpins Keynes's principle of effective demand to which circuitists therefore subscribe.

A representation of the economy in sharp contrast to the neo-classical view

To help readers to appraise this first point, it is first worth recalling that Walras (1926), after elaborating on the determination of exchanges of commodities for one another, encapsulated production in his theory of exchange. To that end, he had to deal with labour, land and capital, on equal terms.³ The prices paid for the services of workers, land and capital, he went on to explain, make up the production cost of the goods the entrepreneur eventually sells:

[the entrepreneur] leases land from land-owners on payment of a rent, hires the personal faculties of workers on payment of wages, borrows capital from capitalists on

payment of interest charges and, finally, having applied certain productive services to the raw materials, sells the resulting product on his own account. (p. 227)

In solving what he termed ‘the equations of production’, Walras came to the conclusion that markets are in equilibrium when supply equals demand for each product and service, and when ‘the selling prices of the products [are] equal to the costs of the services employed in making them’ (pp. 253–254). Here the entrepreneur, wearing his entrepreneur’s hat (as a person he also is a factor of production like other workers), is a mere intermediary between the market for productive services (including the productive services of the entrepreneur) and the market for manufactured goods. The volume of output and its distribution are determined by the interplay of supply and demand in markets depending on the productivity of each factor and on individual preferences.

In arguing against Walras’s representation of things, circuitists underscore the distinction Keynes made (Keynes, 1933a,b) between a ‘real-wage or co-operative economy’ and ‘a money-wage or entrepreneur economy’. In the former, which Keynes also termed the ‘real exchange economy’, ‘the factors of production are rewarded by dividing up in agreed proportions the actual output of their co-operative efforts’ (Keynes, 1933b, p. 77). This, he emphasised, was the case presupposed by the classical economists wherein the determination of employment is linked to the interplay of supply and demand in the labour market, with supply and demand ‘depending upon the expected amount of [workers’] reward in terms of output in general’ (p. 76). The ‘money-wage or entrepreneur economy’ is original in that entrepreneurs (or firms) play the crucial role. They are the ones who decide on the volume of employment in relation to the money proceeds they expect from the sale of their output. This case, Keynes argued, was clearly separate from the former:

In a real-wage and co-operative economy there is no obstacle in the way of the employment of an additional unit of labour if this unit will add to the social product output expected to have an exchange value equal to 10 bushels of wheat, which is sufficient to balance the disutility of the additional employment. ... But in a money-wage or entrepreneur economy the criterion is different. Production will only take place if the expenditure of £100 in hiring factors of production will yield an output which is expected to sell for at least £100. (Keynes, 1933b, p. 78)

As he put it, especially with reference to Marx's famous formula M-C-M' by which the investment of funds amounts to the transformation of a given sum of money into goods (commodities) and then back into an increased sum of money,

[a]n 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 doing so he expects to increase his money profit, even though this profit represents a smaller quantity of product than before. (Keynes, 1933b, p. 82)

[t]he firm is dealing throughout in terms of sums of money. It has no object in the world except to end up with more money than it started with. That is the essential characteristic of an entrepreneur economy. (Keynes, 1933b, p. 89)

These various points speak volumes. Circuitists clearly opt for a representation that, as Keynes emphasised, contrasts sharply with the neoclassical paradigm of general equilibrium. To complete the picture, it ought to be pointed out that circuitists have adopted Keynes's principle of effective demand which, they argue, is based on the circuit (cf. Barrère, 1990; Poulon, 1982), although Keynes was silent about any affiliation. Let us now consider this principle as it will help in the further presentation of French circuit theory.

A foundation for Keynes's principle of effective demand

In support of their argument that the circuit underpins Keynes's principle of effective demand, circuitists first observe that Keynes constructed the principle of effective demand in line with his conception of the entrepreneur economy he outlined in his 1933 writings, that is, on the successive spending and proceeds of sales entrepreneurs are to incur for a given volume of employment. As Keynes put it, 'entrepreneurs endeavour to fix the amount of employment at the level at which they expect to maximize the excess of the proceeds over the factor cost' (pp. 24–25). Second, circuitists emphasise that, although he is not fully explicit on this issue, Keynes on this occasion outlined a theory of distribution wherein profits are a redistributed share of wages, which is transferred from purchasers to firms (cf. Gnos, 1998). And the fact is that while factor cost (which amounts to wages since Keynes considered labour as the sole factor of production — more on this below), which forms factors' income,⁴ is paid by entrepreneurs, profits, that is entrepreneurs' income, are derived from the surplus, paid by consumers, of prices over factor cost. This feature of Keynes's approach to employment determination confirms the divergence between the entrepreneur economy he argued for and the real-wage economy vaunted by neo-classical economists. The money paid on wages is not

the simple transitory and neutral medium in the exchange of the services of labour for goods that neo-classical economics claims it is.⁵ As for money profits, they are in no way paid in the so-called productive services market but on the contrary are formed in the goods market.

It is fair to say that circuitists, in their analysis of the production process and the determination of employment, do not claim to be original relative to Keynes and his post-Keynesian followers. The hallmark of circuitists is their interest in the underpinnings of the Keynesian representation of the monetary economy of production, which derives from their concern to deepen our understanding of the real world. In this respect, a crucial issue may be raised here.

In the *General Theory*, Keynes proposed, in dealing with the theory of employment and the economic system as a whole, ‘to make use of only two fundamental units of quantity, namely, quantities of money-value and quantities of employment’ (p. 41–43). This proposal puzzled his interpreters, notably Hicks (1975), and tended to be ignored. Circuitists on the contrary revived it (cf. Schmitt 1975, pp. 53–54). Their rejection of the neoclassical theory of a real-exchange economy meant they could abandon Walras’s tripartite distinction between the productive services of labour, capital and land, and endorse Keynes’s proposal that

[i]t is preferable to regard labour, including, of course, the personal services of the entrepreneur and his assistants, as the sole factor of production, operating in a given environment of technique, natural resources, capital equipment and effective demand. This partly explains why we have been able to take the unit of labour as the sole physical unit which we require in our economic system, apart from units of money and of time. (Keynes, 1936, pp. 213-214)

In truth, this is neither, as the quotation may suggest, a question of theorist’s preferences, nor a denial of the actual role that capital and land play in the production process. It is rather a matter of logic given the monetary and financial characteristics of the entrepreneur economy. Let us consider this point further.

Walras, who abstracted from money, held that capital was real; it belonged to capitalists and firms hired its productive services. But Walras’s view becomes untenable when the monetary and financial dimension of capital is taken into account. Entrepreneurs do not hire the supposed services of capital goods but borrow money incomes saved by their recipients (who may be implicitly firms’ owners when retained earnings are invested) and spend them on capital goods. In this way, entrepreneurs (firms) invest money incomes in the

purchase of means of production (equipment and intermediary goods), and their problem then, when selling the goods produced in the market, just as the principle of effective demand puts it, is to recoup their expenses, that is to say their production costs, and obtain a net yield (profit) that will allow them to pay interest and dividends on the funds invested. Therefore, the remuneration of capital is not formed in a specific market that is somehow pre-existent to the goods markets and supposedly represents a payment for the productive services provided by capital.

Unlike capital, labour is in no way a good that is produced. Just as Walras argued, labour is therefore purchased in a specific market, separate from any goods markets. The reference to Walras here is subject to a qualification however. In real or material terms, one may argue that entrepreneurs buy the productive services of labour. But in monetary and financial terms, which prevail in the entrepreneur economy, the argument is different. Firms simply buy a quantity of labour from which they expect to obtain a given yield in the goods market. In this regard, although labour is not bought in goods markets it is to be treated on the same footing as capital equipment. However, labour diverges from capital in that, when paying for capital goods, entrepreneurs spend existing incomes, while they form new incomes when paying for labour. Hence labour may be considered as the sole factor of production, that is, in modern terminology, of value added.

The foregoing considerations also help us to conceive of the role of land. Like labour, land is to be purchased in a specific market, separate from the goods markets, but unlike wages, rent is not the price paid for land. When buying land, firms make a payment that defines an investment, just as when they pay for capital goods. Rent, then, is akin to interest and dividends; it remunerates the funds invested in land and is a redistributed share of profits. Of course, firms may rent land instead of buying it. This means that someone else made the investment instead of them, and they have to pay rent to the land-owners out of their profits.

All in all, analysis confirms that it is possible, as circuitists claim, to focus on the successive formation and spending of wages while accepting Keynes's proposals on the choice of units and the definition of the factors of production. To make this conclusion clear, suppose that firms pay, in the current period, wage-bills amounting to £1,000 to produce output that will be sold for £1,200 in the market (we abstract from the cost of capital equipment or 'user cost' in Keynes's terminology, and from the purchase of intermediary

goods, which are also paid by consumers out of their incomes when they buy the goods produced). May we argue that £1,000 is a relevant yardstick for the current output? To answer affirmatively, we have just to insist that all incomes apart from wages are derived from profits, which are incomes transferred from consumers to firms when prices exceed factor cost. This means that the extra £200 is not additional to the wage-bill paid by firms but is part of that wage-bill. This argument may be more easily understood by thinking of value added taxes, which increase the price of goods in the markets thus allowing the government to capture part of consumers' income. No-one would conclude that levying taxes actually increases the value added in the economy.

Some commentators, including circuitists, have wondered how wages amounting to £1,000 can pay for goods sold for £1,200 (for comments see notably Renaud, 2000, and Rochon, 2005). This difficulty arises from a methodological error however. Sale proceeds amounting to £1,200 do not result, as commentators seem to assume, from a single transaction but from a series of transactions over time with individual production processes overlapping each other. Firms, then, have no difficulty in making profits out of wages provided wage-earners and their dependants are prepared to buy goods at prices exceeding production costs. Moreover, profits are themselves spent on goods, and so contribute to the recording of a £1,200 aggregate price. With reference to the difficulty they perceive, some circuitists (cf. Parguez, 1996) have endorsed Kalecki's principle that workers spend the money they earn whereas entrepreneurs earn the money they spend. This argument is to be considered with a critical eye. Entrepreneurs may certainly spend their profits in advance thanks to bank credit, as the authors usually argued, but this still begs the question of how profits are actually formed.

To hammer our point home, suppose now that the goods produced are sold for £900. How is this to be analysed? Firms actually make a loss: they spend £1,000 and recoup £900 only. Keynes examined such a case in his *Treatise on Money* (1930, pp. 159–60). He explained that the incomes that consumers do not spend on goods (£100 in our example) define savings that firms have to borrow either directly or indirectly through banks to make good their losses. He concluded, 'that the increased saving has not increased in the least the aggregate wealth of the community; it has simply caused a transfer of wealth from the pockets of the entrepreneurs into the pockets of the general public' (p. 159). We thus have confirmation that the notion of profit (firm's losses are negative profits) as a transfer of

wealth or income is not at all alien to Keynes. This also confirms that the wage-bill is an adequate yardstick for the value of output: it is the sum of money income that, from a macroeconomic point of view, will necessarily be spent on the purchase of the goods produced. Namely, £900 is paid by consumers, and the remaining £100 is met by firms. Of course, as mentioned earlier, this conclusion does not refute the existence of markets and the correlated role of supply and demand in determining prices. It claims that the interplay of supply and demand in markets is not the ultimate characteristic of a monetary economy of production, and is subject to a macroeconomic constraint based on the asymmetrical relationship of firms with their employees and the correlated circular flow of the wages, those wages being formed when firms invest money in the production of goods and being eventually spent on the goods produced.

THE MONETARY CONDITIONS OF THE CIRCUIT

The preceding section focused on the asymmetrical relationship between firms and workers which underpins the circuit. A further characteristics now has to be accounted for, namely the pre-eminent role of money in the working of the circuit. First, we shall observe that this is another point of convergence between post-Keynesians and circuitists, with both schools sharing the endogenous view of money. However, circuitists insist on the accounting nature of money and aim to supplement the endogenous view of money with an in-depth examination of the connection between money and the real and financial relationships binding firms and the workers they employ. Second, still with a view to helping readers to grasp the circuitist approach, it will be shown that, despite appearances, the circuit is not an oversimplified model in the face of the diversity of monetary transactions.

Circuit theory as a component of the endogenous money approach

The circuitists' espousal of the endogenous money thesis stems directly from their rejection of the classical real exchange economy. In the classical view, money is a commodity that is involved in the exchange of one good for another. Even paper and bank monies are to be considered as goods (albeit immaterial ones), the quantity of which is exogenously determined. This is so because the idea of exchange is tied in with the assumption that there

are goods out there to be exchanged for one another. The involvement of money in exchanges does not alter this assumption. Circuit theory, with its focus on the production process that is initiated by investment (advances) and is fully completed only after a lapse of time, entails a different conception of money. Money allows firms to buy capital goods and labour before the output of their productive activity is available to them. Money, circuitists argue, is an instrument of credit. In support of their argument they refer to actual practice where money is no more than entries in bank accounts, recording borrowers' liabilities and lenders' assets. Their approach to money is clearly akin to the post-Keynesian view that money creation is credit-driven. In the words of Arestis, the circuit school is 'a strong component of the endogenous money thesis' (1996, p. 113).

In the post Keynesian literature, the endogeneity of money has more often than not been linked to the behaviour of banks which may be more or less receptive to the demand for money. This is not the whole story however. In his pioneering work, Moore (1988) showed that endogeneity is fundamentally bound up with the nature of money, while opposing credit money to commodity money:

Because commodity money is a material thing rather than a financial claim, it is an asset to its holder but a liability to no one. Thus, the quantity of commodity money in existence denotes nothing about the outstanding volume of credit. [...] Since the supply of credit money is furnished by the extension of credit, the supply schedule is no longer independent of demand [...] the stock of bank money is completely determined by borrowers' demand for credit (pp. 13–14).

Indeed, we may be certain that the nature of money is a prevalent issue: even if central banks and the banking system were to systematically refuse to accommodate the demand for credit, the endogenous money thesis would still hold since credit money cannot exist unless it is borrowed by someone. Moore's argument is powerful: credit money cannot exist as an asset to depositors if it is not simultaneously a liability for banks and ultimately for bank borrowers, hence the decisive role of the demand for credit.

Circuitists share Moore's view of the endogeneity of money. In *Monnaie, Salaires et Profits*, Schmitt insisted back in 1966 on the novel features of modern money, which is created by banks in response to demand for credit, and consists in bank liabilities which are IOUs, that is, claims to money.⁶ Schmitt developed his views in several publications in the 1960–70s, and gave rise to what has become the common circuitist view that banks issue debts upon themselves *ex nihilo* which they lend to economic agents, especially firms, who

spend them on goods and labour. Eventually, the argument goes, borrowers recover the money they spent, out of their own takings, and are thus able to reimburse their bank loans.

As Parguez and Seccareccia put it,

[i]n the initial phase when banks grant credit, they issue new debts upon themselves which they lend to non-bank agents.... The second phase of the monetary circuit is the period during which non-bank agents spend the money they have borrowed to acquire real resources, which are generally labour and produced commodities. Sellers of labour services or commodities acquire the quantity of money which has been created in the first phase. ... In the third and last stage of the monetary circuit, the initial holders of bank debts seek to recover them in the reflux process out of their receipts generated by their initial expenditure. They can now replenish their deposits and pay back their loans. (Parguez and Seccareccia, 2000, p. 104)

However, Schmitt deepened his analysis, and came to the conclusion that the definition of money may involve some further subtleties (Schmitt, 1984). He made his point with reference to bookkeeping, observing that, strictly speaking, banks do not issue liabilities which they lend to firms. They actually debit and credit accounts with purely nominal units of money, and so build up assets and liabilities which simultaneously tie the banks themselves and their borrowers and depositors. This refinement is not just hair-splitting; it has crucial implications for understanding the role of banks, the definition of money and the nature of the circuit.

On the common circuitist view, banks' liabilities are the counterpart to the produced goods and labour that borrowers (firms) acquire. They are literally exchanged for goods and labour. Then, sellers of goods and labour are presumably paid in full-blown money: credit is on the assets side of banks' books but not on the liabilities side. As Parguez and Seccareccia put it, 'it would be wrong to conceive holders of bank liability as bank creditors' (Parguez and Seccareccia, 2000, pp. 105–106). With reference to bookkeeping Schmitt (1984) points out a double flaw in this view.

First, the double-entry principle does not allow banks to extend credit to borrowers without gaining an equivalent credit from depositors. This is an argument Keynes made in the *General Theory*⁷ and that on the post-Keynesian side has been confirmed by Moore (Moore, 1988). As a consequence, banks' liabilities, that is, deposits, are the source of bank financing, and match the credit they grant to borrowers. Depositors are creditors of banks and ultimately the creditors of bank borrowers. Banks (as Moore also emphasises) are thus one type of financial intermediary; they are not the actual source of the credit granted to borrowers.

Money creation has to be seen for what it really is: bookkeeping entries — debits and credits that banks record in their books in nominal units of account, and that resolve into banks' assets and liabilities denoting (indirect) financial relations between borrowers and depositors. Bank money is therefore a dual entity, and not one and the same thing as considered in monetary flows (payments) and stocks (assets).

The second point, which is closely related to the first, concerns the nature of the circuit. The common circuitist view in a sense maintains the (neo)classical approach by which economic transactions are exchanges achieved by means of a peculiar good or asset that is deemed to be money. The rigorous reference to bookkeeping delivers a more original view, so much so that Schmitt came to distance himself from other circuitists (cf. Rossi, 2004). There is no doubt, however, that the paradigm of the circuit remains central to Schmitt's approach. And so it is legitimate in this chapter to adopt Schmitt's later findings on the nature and the role of money as part of this presentation of circuit theory. The objective is to present this theory in what I believe is its most coherent and relevant form. The nature of the circuit may then be specified in the following way.

The payment of wages, which comes down to crediting workers' bank accounts with mere units of account, defines assets that link workers (depositors) and firms (borrowers) through banks. There is no string of transmissions of deposits that the banks would issue on themselves, and then lend to firms which, in turn, would transfer them to workers. What then is the meaning of the financial relationship between firms and workers? The answer results from the asymmetrical relationship connecting firms and workers, and underpinning the circuit. Firms pay for labour having in view the output which that employment will generate and which they will subsequently sell at a profit, while workers work having in view the share of output which will fall to them. The output is thus the object of the commitment of both firms and workers in the production process, and also of the financial relationships that are generated by this process. We may surmise that if production were an instantaneous process, firms would pay workers at once, in kind (assuming that the nature of the goods produced would suit workers' needs). But when time is taken into consideration, it can be seen that firms have to postpone delivering the goods being produced to workers, and so require credit from their workers. Monetary payments, which banks may effectively make by means of units of account because the object of the monetary transactions is nothing other than the real goods produced, ratify the firms' commitment to deliver goods to their workers later on.

Simultaneously, workers temporarily save their income in the form of bank deposits, and thereby grant credit to firms. Furthermore, the homogeneity and convertibility of bank monies allow the development of a complex network of transactions allowing every worker and his dependants to buy whichever goods best meet their needs, regardless of the particular goods the worker actually produced. The accounting nature of bank money, and the financial relationships monetary payments establish, allow distribution phenomena that would be impossible under the (neo)classical assumption that economic transactions are exchanges. Exchanges confront equally valued quantities of goods and currency (whether value is considered as ‘absolute’ or ‘relative’), and distribution cannot be conceived of unless one distinguishes, as Walras did, as many factors of production as there are income categories. Not so in the circuit view. As shown above, the distribution of the output is dependent on the excess of prices over the wage bill paid by firms.

A representation of the deep relationships underpinning actual monetary economies of production

Our methodology, here, will consist in showing that the various monetary transactions taking place in the economy may accurately be thought of as parts of either the flux or reflux of monetary wages constituting the circuit. Let us successively consider the financing of firms’ outlays on wages and capital goods and the financing of households’ spending.

According to the foregoing presentation of circuit theory, firms ask banks for credit in order to pay wages. The formation of deposits ensues to the benefit of workers while firms become simultaneously indebted to banks. All in all, banks create money at firms’ demand. This consists for the banks in crediting and debiting accounts, and, by the same token, they act as financial intermediaries between firms and workers. The transaction is recorded on banks’ balance sheets as shown in Table 1.

Table 1 Entries resulting from the payment of wages from banks’ loans

Banks			
Assets		Liabilities	
Loans to firms	£w	Deposits of workers	£w

This is a simplified presentation. In practice, firms may also pay wage-bills out of existing deposits derived from borrowing savings on the financial markets or from profits earned previously. Should circuit theory be considered as a theory that applies only in overdraft economies, which is what France and Italy were at the time the theory originated (cf. Lavoie, 2005, p. 257)? No, in fact, there is no question that the theory is universally true. Let us distinguish between firm F1 which, in paying its wage-bills, generated the incomes (wages and the ensuing profits) that are borrowed by a second firm, F2. To pay F2’s wage-bill, the banks debit F2’s account and credit its workers’ accounts. The banks’ role ends there, but the circuit analysis still holds. What actually occurs is a threefold financial operation. 1) Income-holders lend deposits to F2 on the financial markets, which simply means that they convert their savings from liquid into illiquid assets (from deposits into F2’s liabilities); they clearly do not part with their savings. 2) The conversion of income-holders’ savings from liquid to illiquid assets does not involve, in macroeconomic terms, the spending of savings. This is so because the corresponding output has not yet been sold, to wit F1 is still indebted to the banks (Table 2).⁸ Hence, income-holders are still, but this is only implicit in the financial operations actually recorded either in the banks’ books or in the financial markets, lending the output corresponding to their saved incomes to F1. 3) F2’s workers are credited with deposits (Table 2) to which there corresponds a new output and which, as explained above, they currently save and lend to firm F2 (F2 holds the output that is being produced until wages are spent). It should be noticed that when paying wages out of their own profits, firms do not spend their profits either; they merely immobilise them, and the above analysis applies.

Table 2 Entries resulting from firm F2 paying wages from deposits borrowed on the financial markets

Banks			
Assets			Liabilities
Loan to firms F1	£x	Deposits of F2 workers	£x

Throughout this chapter, we have emphasised the reference circuitists make to Keynes’ heterodoxy. Here is another opportunity to emphasise Keynes’s legacy, in noting that the

point we are examining corresponds precisely to Keynes' analysis of the finance motive (1937a,b,c). To start production, Keynes argues, firms have to secure finance that may be provided by banks (notably in the form of overdraft facilities) or by the market (Keynes, 1937a, pp. 208–09). Such finance, which amounts to 'a provision of cash', he continues, '...does not absorb or exhaust any resources', but generates new net saving when invested in a new production: 'Each new net investment has new net saving attached to it' (Keynes, 1937a, p. 209). We have just confirmed that, when paying wages, firms do not spend pre-existing savings, whatever the origin of the cash they spend, whether loans are granted by banks issuing money or income-holders who part with their cash. The payment of wages actually generates savings corresponding to the investment made by firms in new production. The reference to Keynes's writings on the finance motive provides us with an opportunity to pursue the analysis of money and the role of banks. So far, we have emphasised that bank deposits are the materialisation of financial relationships between borrowers and depositors in which banks are go-betweens. Nevertheless, depositors are in the first place in direct relation with banks: depositors hold claims on banks not on borrowers. This is what the notion of cash brings out. Banks are not only financial intermediaries, they are also, so to say, monetary intermediaries in that they make payments by crediting and debiting accounts. In this respect, deposits define cash, that is the ability for depositors to ask banks to make payments on their behalf. This is what firms obtain in the first instance when borrowing from banks or from deposit holders on the financial markets.

Let us now consider firms' outlays on capital goods. Like wage-bill payments, these outlays may, in practice, be financed from bank loans (money creation) or from deposits obtained in the financial markets. The second case is the easier to consider. It means that firms spend incomes on the purchase of goods, just as income-holders usually do, and will have to reimburse lenders later on, out of their profits. The first case is trickier. It seems to contradict circuit theory, by which incomes (wages) are successively formed and spent, and banks are mere financial intermediaries. Banks seemingly finance the purchase of goods *ex nihilo*, without any need to transfer pre-existing (saved) incomes to borrowers. However, the contradiction is only apparent.

The production of the capital goods we are considering has given rise to workers' deposits with banks. To simplify, we may suppose that firm F1 that produced these latter goods had borrowed from banks to pay its workers' wages. Suppose now that firm F2

borrowed from banks to pay for the capital goods produced. New deposits are credited to the benefit of F1. As a consequence, F1 can repay its bank loans, and finally (Table 3) only two entries remain alive in the banks' books: the debt of F2 which borrowed from the banks in order to buy the capital goods, and the asset (deposits) of F1's workers, who produced these goods and are saving their wages.

Table 3 Entries resulting from the funding of firm F2's purchases of capital goods from bank loans

Banks			
Assets			Liabilities
Loan to firm F2	£y	Deposits of F1's workers	£y

What Table 3 shows, then, in conformity with the findings of circuit theory is that, although it borrowed money from the banks, which created supplementary deposits to that end, F2 did not spend resources that banks somehow created *ex nihilo*, but existing incomes saved and lent, through banks, by F1's workers. The latter are now, through the banks, creditors of F2.

Let us turn now to the financing of households' expenses. According to circuit theory, households spend the incomes earned by wage-earners and partially redistributed out of firms' profits. Income spending then allows firms to refund their bank loans. In Table 4, we suppose that in a first step households H1 spend £x out of deposits amounting to £w. There therefore remains £w-x deposits, with the corresponding £w-x loans to firms that have not yet been repaid.

Table 4 The effect of households' spending from current incomes

Banks			
Assets		Liabilities	
Loans to firms	£w-x	Deposits of households H1	£w-x

Obviously, households also resort to bank loans. For an example, Arestis and Howells (1999) observe that 'the greater part of loan demand in the UK depends upon the decisions of households rather than firms' (p. 117). What happens then? To dispel suspicion, suppose that households H2 ask banks for credit and obtain a £z loan which they spend on goods, so allowing firms to repay their loans up to this amount. In the banks' books the situation is then:

Table 5 The effect of households' spending from bank loans

Banks			
Assets		liabilities	
Loans to firms	£w-z	Deposits of households H1	£w
Loans to households H2	£z		

This means that up to £z, H1's deposits cover equivalent loans to households H2. Implicitly, that is, through banks, H1 grants credit to H2: the latter has spent the income of the former, which it will have to pay back later on, out of its own income. This confirms our overall argument. Whichever way monetary transactions are funded, they are part of the same scheme, that is, the circuit of money wages which are successively formed and spent, and may be redistributed and lent. It can also be seen that money creation in monetary payments by banks may have different meanings depending on whether that money (that is, cash as defined above) is granted to firms or households, and spent on goods or labour. This is so because, as circuitists argue, entries in banks' books have meaning with reference to the output that is

produced and then bought by income-holders in the sequence of the flux and reflux of money wages.

ECONOMIC POLICY

Economic policy is no doubt one of the reasons for there being any economic theory in the first place, and circuitists do not challenge this. Given their proximity to Keynes's theory, they are much involved in examining the employment issue. However, in espousing the endogenous money thesis they also endorse the post-Keynesian rejection of neo-quantitivist monetary policies (see Rochon, 1999a). In keeping with the presentation of circuit theory above, the focus here is on the relevance of circuit theory with respect to Keynes's method of analysis of the emblematic case of unemployment. First, we show that circuit theory underscores the originality of Keynes's theory of unemployment. Second, we develop some further considerations on circuitists' approach to economic policy with reference to present-day unemployment in Europe.

Circuit theory emphasising the originality of Keynes's theory of unemployment

Keynes attributed unemployment to a demand deficiency due to excessive savings and recommended that the state should substitute itself for individual income-holders in spending the income available. In doing so he sought to refute the (neo)classical argument that involuntary unemployment is unlikely to occur except when wage and price rigidities impede the adjustment of supply and demand in markets. As he warned in the preface to the *General Theory*, to understand his claim, readers should 'escape from habitual modes of thought and expression' (1936, p. viii). He also warned that it would not be easy to escape entrenched ways of thinking, which unfortunately proved to be the case. Indeed, it is commonly argued, especially in the current writings of the 'new Keynesians' (cf. Ball, Mankiw and Romer, 1991), that Keynesian unemployment is due to some exogenous fall or 'shock' in demand which, given price and wage rigidity, deviates output and employment from their equilibrium values. On this interpretation, Keynes was original in establishing a model in which quantities instead of prices are supposed to adjust. In this view, examining why demand may be deficient is not at issue.⁹ Policy recommendations then focus on the ways and means of

establishing wage and price flexibility. Along with post-Keynesian writers (see notably Rotheim, 1998), circuitists seek to restore Keynes's original message. To that end, they claim that circuit theory helps to characterise Keynes's analysis as a coherent argument and to challenge the (neo)classical analysis (cf. Gnos, 2004, 2005).

In what is Keynes's message original? As a first step, we may refer to the asymmetrical role in which Keynes casts entrepreneurs, which circuit theory emphasises. Employment is not determined by the interplay of supply and demand in markets, but unilaterally by entrepreneurs who make a decision with reference to the demand they expect for their output. This is where Keynes himself, and many post-Keynesians after him, introduced the role of uncertainty. Depending on psychological factors, entrepreneurs may feel more or less confident with regard to their forthcoming proceeds from sales, and so increase or decrease employment. On this view, economic policy should aim at sustaining confidence and reducing uncertainty, notably in establishing stable institutions that will exercise control over the environment of economic activity. Even investment by the state, which Keynes viewed primarily as a means to sustain demand, is then to be considered as a way of sustaining entrepreneurs' confidence; long term investment programmes are particularly useful in promoting stability in entrepreneurs' expectations. Fontana (2000) commented that, contrary to post-Keynesians, circuitists do not expand on the context of uncertainty in which entrepreneurs decide on the level of activity of firms. This is, in fact, essentially a difference of focus, not a denial; and circuitists are fully able to support post-Keynesian recommendations in the field.

As a second step, we of course have to consider demand deficiency *per se*. Again, emphasis may be placed onto the role of uncertainty. This is what Davidson (2002) does when explaining that uncertainty exacerbates households' liquidity preference and so deters them from spending their cash on goods. Keynes, for his part, emphasised what he termed a fundamental psychological rule that households spend a smaller part of their income in proportion as it grows (1936, pp. 96–97), hence the famous notion of households' decreasing marginal propensity to consume. Whatever the cause of demand deficiency may be, however, it should be noticed that the reference to the circuit is necessary to the argument. This is so because Keynes does not simply argue that demand is insufficient, as new-Keynesians currently do, but that saving exceeds investment. He logically means, in this way, that households earn incomes that they do not spend in full, which would not be a drawback if

entrepreneurs were to borrow the incomes saved and spend them on capital goods (pp. 27–34). Keynes’s argument is puzzling however. As mentioned earlier, he also insists on the necessary equality of saving and investment. This sounds like a contradiction and much intrigued his contemporaries and followers. Circuit theory confirms this equality, which results from the payment of wages (cf. above). It also states that all the wages earned by workers, and partially redistributed in profits and their subdivisions, are spent on goods. Also, nevertheless, while making clear the theory of distribution underlying the principle of effective demand, it is in a position to conceive of the possibility of an excess of saving over investment as defined by Keynes. What the excess of saving entails is firms’ losses: firms are committed to bearing the cost of the unsold goods (it turns out that part of their initial investment on wages was sunk without hope of recovery), which is of course a situation they try to avoid by reducing their scale of production if they are expecting deficient demand.

In opposition to neoclassical economists who advocate wage and price flexibility, Keynes insists that ‘[t]he essential character of [his] argument is precisely the same whether or not money-wages, etc., are liable to change’ (Keynes, 1936, p. 27). He further explains in chapter 19 of the *General Theory*, that the classical argument that, in any given industry, a reduction in money-wages would boost sales by cutting production costs and hence the price of output, rests on the questionable assumption ‘that the reduction in money-wages will leave demand unaffected’. This amounts to unduly transposing a micro-economic argument into the realm of macro-economics (pp. 257–259). Circuit theory undoubtedly supports Keynes’s viewpoint in highlighting the methodology of the principle of effective demand. Demand is fuelled by wages. To cut wages is to diminish demand in the same proportion. By the way, Keynes is quite explicit on this: ‘if the wage-unit changes, the expenditure on consumption corresponding to a given level of employment will, like prices, change in the same proportion’ (p. 92). To be fair, Keynes does acknowledge that under certain circumstances production may be stimulated by a reduction in money-wages, but in coming to this conclusion he has to make certain assumptions with respect to the propensity to consume, which confirms that methodology is at issue:¹⁰ ‘A reduction in money-wages is quite capable in certain circumstances of affording a stimulus to output, as the classical theory supposes. My difference from this theory is primarily a difference of analysis’ (p. 257). The divergence of Keynes’s theory from the classical framework could hardly be made more explicit. The

attempt by the ‘Keynesians’, whether ‘old’ or ‘new’, to reduce Keynes’s originality to price and wage rigidity is all the more surprising, and needs anyway to be dismissed.

Circuit theory and unemployment in Europe today

A possible cause of present-day unemployment, especially in Europe, is probably not to be found in excessive saving due to the psychology of income-holders. If investment is deficient, however, leaving aside any discussion of restrictive fiscal policies (cf. Parguez, 2000), it is mainly because of production costs, essentially of wages that are notoriously higher in Western European countries than in Eastern Europe, in South East Asia or in China. These lower production costs prompt Western companies to relocate their plants, as the current debate about ‘delocalisation’ illustrates. A twofold vicious circle has been generated.

On the one hand, in response to firms’ complaints, governments are promoting supply-side policies that translate into wage-deflation and so cause demand to fall even further. For example, while in France, from the early 1960s to the early 1980s, the share of wages (including insurance contributions paid by employers and which benefit wage-earners and their families) rose from 60% to nearly 68% in value added, it fell dramatically to 59% in the late 1980s, that is, within a very few years. It then further dipped to the 57,9% figure recorded in 2000, and now (2004) stands at about 58%.¹¹ This change is clearly the outcome of the restrictive pay policies implemented since 1983. A similar pattern is found in other Western European countries, especially in Italy and Germany.¹² By the way, it is interesting to observe that, in France for instance, the authorities recurrently refer to stagnation in households’ consumption to explain low growth and unemployment. This means that, although they advocate and apply supply-oriented policies, governments in practice acknowledge the role of demand. They do not, then, of course, recommend wage rises; they instead promote easier borrowing or favour inter-generational transfers of wealth considering that younger people will spend more than their elders.

On the other hand, imports from low-cost countries, in allowing households to buy goods at attractive prices, favour wage-deflation, which means that Western European wage-earners are less and less able to buy goods produced in their domestic economies.

However, from a practical point of view, how could entrepreneurs sustain competition in today’s globalised economy if policies favouring wage stability not to mention wage expansion were adopted in Western Europe? As said, wages in France have been falling since

1983. This policy came in after the first phase of Mitterrand's presidency, which was characterised by demand-side policies that failed because consumers preferred cheap imports to more expensive goods produced in the domestic economy. This unsuccessful policy sounded like a final, failed attempt to implement Keynesian policies. Circuitists notice that Keynes did not, yet, leave us at a loss for a solution. Challenging the classical argument that a reduction in money-wages would stimulate demand by lowering production costs and hence the price of output, Keynes made clear that his conclusion in favour of wage stability applies 'provided that equilibrium with the rest of the world can be secured by means of fluctuating exchanges' (Keynes, 1936, p. 271). Schmitt took this point into account when expanding on Keynes's proposals for an International Clearing Union (Keynes, 1941, 1942) to advocate a world monetary reform (Schmitt, 1973) and when criticising the official project for a single European currency compared with the advantages of retaining the domestic currencies and introducing a common currency in the international payments of European countries alone (Schmitt, 1988). Of course, these considerations are to be compared, on the post-Keynesian side, to Davidson's (1991, 2002) own proposal for a reform of the world's money. A methodological feature of Keynes's heterodoxy endorsed by circuitists and post-Keynesians alike consists in tying in money and real variables, and also in considering the structural organisation of the economy. It is not surprising, then, that these features may be simultaneously summoned up in the search for solutions to economic problems. In this same vein, Schmitt (1984, 1996) has developed an analysis, in the framework of his theory of money emission, which explores the possible causes of demand deficiency and connects unemployment and inflation. All in all, Keynes and his circuitist and post-Keynesian interpreters' view of unemployment and its cure is part of a global view of the way the world in which we live works and the way it should be ordered.

CONCLUSION

This presentation of circuit theory has focused on the reference circuitists make to Keynes's heterodoxy. It has been a means to emphasise the affinity of circuit theory with post-Keynesian theory, and so to help readers more familiar with the latter to grasp the significance of the circuit and its place in heterodox economics. It has also been a means to figure out a

pre-eminent feature of circuit theory, its proponents' conviction that Keynes provided economic theory with a sustainable original scheme, in stark contrast with the neo-classical 'real exchange economy', the foundations of which need to be clarified and extended in order to clear up misunderstandings such as those that allowed orthodox theorists to consider Keynes's theory as a special case of their own representation. It is this need that induced a handful of French economists, pre-eminently Schmitt, Barrère, Le Bourva and Parguez, to make a point of reviving the time-honoured conception of the circuit which they suspected underpinned Keynes's heterodoxy. This was not an easy task, as is obvious from some of the characteristics of their analysis as presented above, especially the question of money, its definition and its role. But, as we hope to have convinced readers, this was (is) the price to be paid in order to better grasp the ins and outs of Keynes's theoretical revolution and, more importantly, of the real world in which we live, and its plagues such as unemployment. Needless to say that, despite Kregel's encouragements that 'the circuit approach has [indeed] done much to reawaken interest in Keynes's monetary theory of production and to extend it in new directions' (Kregel, 1987, p. 11)¹³, much remains to be done in this field.

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Notes

1 See Graziani, 2003.

2 On Robinson and the circuit, see Gnos and Rochon (2003), and Rochon (2004).

3 'The elementary factors of production are three in number. In listing these factors, most authors employ the terms: land, labour and capital. But these terms are not sufficiently rigorous to serve as a foundation for rational deduction. Labour is the service of human faculties or of persons. We must rank labour, therefore, not with land and capital, but with land-services ['rente'] rendered by land, and with capital-services ['profit'] rendered by capital-goods.' (Walras, 1926, p. 212)

4 'The factor cost is, of course, the same thing, looked at from the point of view of entrepreneur, as what the factors of production regard as their income' (Keynes, 1936, p. 23).

5 So much so that Walras claimed 'we can abstract from money in circulation' (1926, p. 220).

6 As Schumpeter (1954, p. 321) once put it, 'you cannot ride on a claim to a horse, but you can pay with a claim to money'.

7 'The prevalence of the idea that saving and investment, taken in their straightforward sense, can differ from one another, is to be explained, I think, by an optical illusion due to regarding an individual depositor's relation to this bank as being a one-sided transaction, instead of seeing it as the two-sided transaction which it actually is. It is supposed that a depositor and his bank can somehow contrive between them to perform an operation by which savings can disappear into the banking system so that they are lost to investment, or, contrariwise, that the banking system can make it possible for investment to occur, to which no saving corresponds' (Keynes, 1936:n p. 81).

8 When income-holders lend their savings to firms which spend them on capital goods, the situation is different. Income-holders certainly convert their savings from liquid to illiquid assets, but from a macroeconomic viewpoint the corresponding incomes are spent: the output which is, say, the real content of the incomes, is bought by borrowers. The latter will reimburse the loan later out of their own incomes.

9 As Stiglitz (1993) points out, new-Keynesians are not actually interested in examining why demand may be deficient.

10 For a more comprehensive discussion of this point, see Gnos (2003 and 2004).

11 Source: Timbeau (2002) and Insee (2005).

12 As regards Germany, see Hein and Truger (2005).

13 Kregel is quoted here from Arena, 1996, p. 427.