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**Reconsidering Keynes in perspective of ‘monetary circuit theory’:
The lost distinction between industrial and financial circulation of
money¹**

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Abstract

Monetary circuit theory assumes that the money supply is endogenously determined by the banking system. Money is provided by banks through loans and overdraft facilities demanded by firms (and households) undertaking real sector activities. Within monetary circuit theory money is only considered as a means of payment, not as a store of wealth. Keynes’s important distinction in his *Treatise on Money* between industrial and financial circulation seems to have been lost. Industrial circulation is the part of bank credit that goes to firms and households for current business related to production and consumption, that is, the focus of monetary circuit theory. Although financial circulation is an important part of the banks’ balance sheet in the form of savings deposits, this is hardly discussed in monetary circuit theory. In this paper, we shall argue that monetary circuit theory would be more coherent if it were expanded to incorporate some aspects of Keynes’s view on financial circulation. In a modern context, it has become apparent that it is financial circulation which contributed significantly to the inflated asset bubble in the first place and the credit crunch in the second round. Hence, bank lending, which creates means of payment, should be regulated closely to prevent asset bubbles. Banks’ activities, notably the creation of means of payment, should be restricted to credit for real activities only. Highly liquid stores of wealth do not have to be means of payment. Hence, banks should be divided into two categories: industrial banks, where deposits are used as means of payment (and no interest is paid), and financial banks, where deposits carry an interest, but cannot legally be used as means of payment. This regulation of banks would limit the amount of means of payment to what is required for production and trade, and would thus increase economic stability. This insight can be obtained by a combination of monetary circuit theory and Keynes’s analysis of industrial and financial circulation in his *Treatise on Money*.

Keywords: Keynes’s monetary theory, monetary circuit theory, regulation of banks, financial crisis

JEL classification codes: E12, E44, E51, G21

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Introduction

Monetary circuit theory and post-Keynesian liquidity preference theory of money and interest both attach an important role to money and banking in the understanding of macroeconomic development. In addition, they share the view that, in a modern production economy, money is created (at least partly) endogenously (see Rochon and Rossi, 2003). This observation leads directly to the very distinct heterodox economics conclusion that money cannot be considered as neutral in any realistic macroeconomic analysis. Money and the money creation processes have to be taken deliberately into account to understand macroeconomic dynamics. Further, this viewpoint has been vindicated in light of the actual economic crisis, which was (at least partly) elicited by financial disruptions in general and more specifically by the malfunctioning of the banking sector. This observation brings us to initiate our analysis by looking into the theory and method of one of the founding fathers of heterodox macroeconomics, John Maynard Keynes, who is celebrated by many heterodox *macroeconomists*, for good methodological reasons, as their main source of inspiration. Hence, our intention is to follow a string of thought in monetary circuit theory inspired by the writings of Keynes on money and macroeconomic crisis.

Although Keynes's seminal work was entitled *The General Theory of Employment, Interest and Money*, it is not the most important source for understanding his contributions to the theories of money and banking. *The General Theory* is primarily an exercise in macroeconomic methodology to get a better understanding of the working of 'the economy as a whole'. Instead, we should direct our attention to Keynes's earlier theoretical work, with more specific focus on the functioning of the financial sector. That is done even though Keynes kept his overall analytical framework within a general equilibrium model of the market system. In fact, Keynes (like most other macroeconomists at that time) until the early 1930s considered *disequilibrium* in the real economy as caused by financial disruptions – so-called credit cycles (Skidelsky, 1992).

The aim of this paper is to show that the insights of the working of the banking sector that Keynes presented in his monetary theory are still very relevant at the time of writing, in order to stabilize the activities of banking sector by way of regulation. To date, banks are entitled to accept deposits as part of what Keynes, 1930 called *industrial and financial circulation*, which are used as *means of payment*. These activities have made the banking sector expand its activities beyond the narrow requirements of means of payments used for real production activity. In this paper we argue that industrial (real production) circulation and financial (speculative) circulation should be clearly separated, because the systemic risk inherent in the banking sector is uncontrolled without an external monitoring authority and causes uncertainty with regard to the stability of the money (means of payments) system. There is a case for a more clear legislation of requirements related to monitoring of risk profile and solvency of banks with can create means of payments by accepting deposits. From a theoretical point of view the legal requested monitoring should concentrate on banks providing credit (and deposits) used for industrial circulation, which on the other hand could be secured by a state guarantee, giving these deposits an indisputable and perfect liquidity as a means of payments.

Keynes as an early monetary theorist

Keynes was by specialization a monetary theorist. For many years his course of lectures at Cambridge University had the heading of ‘a pure theory of money’. His main ideas on money and banking were presented in two books: *A Tract on Monetary Reform* (Keynes, 1923) and *A Treatise on Money* (Keynes, 1930, two volumes). In these books we find Keynes’s discussion of the institutional framework of the banking system and the financial sector as a potential cause of disruption in an otherwise smooth functioning real market economy. This view financial instability was by itself a novelty within neoclassical economics in the 1920s (Toporowski, 2005). Until the outbreak of the deep economic crisis of the early 1930s, mainstream theories considered money and finance mainly as a ‘veil’, which in the short run might hide the development of the real economy rather than having any significant impact. Basically, if money and credit were controlled, they would have a role for the proper functioning of the real sector economy like oil for an engine – simply to make it run more smoothly. In that perspective, the banking sector only had a facilitating role as provider of means of payment. These means of payment, however, were without any significance, because production was assumed to be determined by the supply of factors of production. Hence, the real sector performance was analysed as though it was similar to a barter economy, where workers were paid in terms of goods, and profit was given by the production in excess of the sum of wage goods. This mainstream economic analysis concluded that if the barter economy could be organized by way of a general and instantaneous market-clearing mechanism, like the Walrasian auctioneer, then money and credit were unimportant except for the determination of the price level (a Marshallian perspective recognized, among other, by Leijonhufvud, 1968). In other words money was considered as being neutral.

Keynes’s aspiration during the 1920s was to understand the working of the financial sector and especially of banks’ role in the rather prolonged process of real sector disequilibrium. Keynes argued that disruptions within the flows of credit caused among other things by banks’ activities could have a longer lasting impact on the real economy than hitherto understood. The time dragging process was caused by real sector (mal)adjustments as a consequence of ‘wrong’ relative prices. The credit cycle could make prices (and wages) deviate for a considerable time period from their general equilibrium values. In the 1920s Keynes argued that these monetary mechanisms were (parts of) the main explanation for unemployment being a semi-persistent phenomenon – hence, that money and credit were not just a veil.

Further, in *A Tract on Monetary Reform*, Keynes (1923) showed empirically that changes in money supply/bank deposits could not fully explain the development in the (consumer) price level. This observation led him to investigate the functioning of the banking sector much more thoroughly during the 1920s. By the end of that decade, he succeeded at last in finishing his writing of what he considered himself as his *opus magnus*, *A Treatise on Money* (TM) in two volumes: *the pure theory of money* and *the applied theory of money*. His ambition was to explain the monetary and financial causalities of the (obviously) slow adjustment processes towards general equilibrium. The supply of money did deviate

from its 'optimal' level owing to the behaviour of banks. Further – and this was a kind of theoretical novelty – the actual and market-determined rate of interest might deviate for a prolonged period from the natural rate of interest (to use the Wicksellian term).

However, throughout the 1920s Keynes still worked within the neoclassical analytical frame of a long-run general equilibrium model.² This rather constraining methodological assumption should not prevent us from getting useful insights from his writings on how the banking sector supplies money and how the market rate of interest is determined. These insights are in all cases helpful in order to obtain a better understanding of the current financial and economic crisis.

Banks supplying money: industrial and financial circulation

Keynes provided the reader of *TM* with important knowledge about the working of the banking system *as a whole*. The development of private banks cannot be understood without taking into account the private sector behaviour with regard to the supply of bank deposits and demand for bank loans and credit. Banks adjust their behaviour partly as a mirror picture of their customers' financial requests.³

Initially, Keynes divided the endogenous part of the money supply, that is, bank deposits, into two categories: *industrial circulation* and *financial circulation*.

By *industry* we mean the business of maintaining the normal process of current output, distribution and exchange and paying the factors of production their incomes for the various duties which they perform from the first beginning of production to the final satisfaction of the consumer. By *finance*, on the other hand, we mean the business of holding and exchanging existing titles to wealth, including stock exchange and money market transactions, speculation and the process of conveying current savings and profits into the hands of entrepreneurs.

Each of these two branches of business uses a certain part of the total stock of money [see Table 1]. Broadly speaking, industry requires the use of income deposits and of a part of the business deposits, which we will call business deposits A, while finance requires the use of savings deposits and of the remainder of business deposits, B. Thus the sum of the two former bank deposits is the industrial circulation and the sum of the two latter deposits is the financial circulation (*TM*, pp. 217-18).

² On the other hand, his phrase on the lack of importance of long-run analysis is well known (see Keynes, 1923, p. 65).

³ There is a striking parallel between Keynes's theory of effective demand for output and his theory of 'effective demand for money' (see Jespersen, 2009b, Ch. 8).

Table 1. A single bank's balance sheet using Keynes's definitions

<u>Assets</u>	<u>Liabilities</u>
1. Cash	L1. Income deposits (households) ⁱ
2. Loans A	L2. Business deposits A ⁱ

3. Loans B	L3. Business deposits B ^(f)
4. Treasury bonds	L4. Savings deposits ^(f)
5. Shares	5. Interbank deposits
	6. Bank's equity capital

Notes: *Industrial circulation* = income deposits (households)ⁱ + business deposits Aⁱ
Financial circulation = business deposits B^(f) + savings (households and businesses) deposits^(f)

Loan A: businesses and households lending for current **real** sector transactions and activities

Loan B: lending by other financial institutions and so-called investment banks

In the terminology of Keynes, money supply was separated into *industrial circulation*, containing L1 and L2, and *financial circulation*, containing L3 and L4, but he rather quickly dismissed L3 as unimportant.

Keynes had a number of arguments to explain the direction of causality behind the different items on the bank's balance sheet. First, he emphasized that the *industrial circulation* is caused by firms' (and households') demand for transaction money/means of payments. This demand is determined by the needed means of payment derived from the undertaking of real sector transactions. This corresponds to 'actively created deposits' (TM, p. 22) and is directly related to the flow of real output valued at market prices. Therefore, Keynes called this revolving part of the bank's liabilities the '*current account*' closely related to these factor income-generating activities. The relevant bank deposits are 'actively created' when businesses are demanding working capital from banks for the undertaking of real-sector activities, that is, production. Banks supply these means of payment through both direct loans and overdraft facilities.

Private banks play a unique institutional role in a monetary production economy, because their liabilities can be used as means of payment – bank loans, overdraft facilities, and deposits are the oil of the real economy, *sine qua non*. Deposits of any kind in a financial institution, chartered as a bank, are considered in modern textbooks as perfect substitutes to central-bank notes (and coins). There is in textbooks seldom attached any kind of uncertainty to the functioning of the entire banking system. The latter is just considered in aggregate form, as a safe provider of means of payment. Apparently, Keynes would have disagreed.

The important interrelationship between financial institutions and uncertainty could also be learned from Keynes's (1926) *The End of Laissez Faire* (reprinted in *CWK*, vol. IX). In the financial sector, if anywhere, the functioning of institutions builds on trust and a stream of positive historical experiences. To date, central bank liabilities have been considered without hesitation as high-powered money – no one would ask for gold as the ultimate means of payment. But the recent financial crisis has shown that deposits of private banks do not in general have the same status as ultimate means of payment for a number of reasons, namely:

- private banks can go bankrupt;
- private banks are so intertwined that if one big (or medium-sized) bank fails, the entire banking system might become illiquid;
- the central bank may cease to act as lender of last resort.

To overcome this inherently institutional uncertainty within the banking sector, some arrangement of deposit insurance organized by the government as the most nationally reliable institution has become necessary in many (Western) countries. Without such a guarantee, a number of existing banks would have been excluded from the interbank market, which immediately would have caused a run on these banks – as noticed in relation to the British bank Northern Rock in spring 2008 and took full scale in September 2008 when Lehman Brothers investment bank collapsed.

One question emerged from these dramatic episodes, should deposits of any bank independent of its financial enterprises be covered by an unlimited state deposit guarantee? It is reasonable to cover whatever bank activity just because the deposits are used as means of payments? Why not, in the future, make a clear cut separation between banks solely undertaking activities related to financing real production, consumption and real investment activities (as measured in the national accounting system) and other banking activities mainly related to financial/speculative purposes. One thing is to finance current production quite another thing is to establish final finance of real wealth. Originally, banking was divided into on the one hand business bank servicing firms with (revolving) working capital and means of payments and on the other hand investment bank providing ultimate finance (derived from savings).⁴

In the next section we will discuss possible regulations in light of the different definitions of circulation/deposits provided by Keynes, 1930. Our suggestion is that only financial institutions carrying out transactions related to industrial circulation, so-called current transaction related to real-sector activities, should be allowed to act as providers of state guaranteed means of payments and, hence, be allowed to call themselves *banks*.

⁴ In Denmark it has until very recently been the legal practice, that the building sector was financed by banks, but households buying a living home (or business and farmers buying real estates) had to get the needed loans from a mortgage institute (investment bank) which obtain funds by issuing and selling bonds in advance – **and these institutional mortgage bonds are not state guaranteed.**

Why industrial circulation and financial circulation ought to be separated

Trust is the keyword for the activities within the banking sector. Changes in industrial circulation, of course, do not always match changes in loans granted to businesses (and households) by each individual bank. When a loan is granted by bank A, the related deposits might flow into another bank B, depending on business activity and customs. In that case, bank A has a deficit of deposits and bank B is in the opposite situation, with excess deposits. If bank B trusts bank A, they meet on the interbank market (called a clearing house in the interwar period) at the end of the day, where bank A will get the needed deposits to balance its book in the form of a (short-term) loan from banks with excess deposits, *in casu* bank B.

However, this process of deposit intermediation from surplus banks to deficit banks via the interbank market cannot be considered as an automatic process. It depends on trust. Although loans and deposits in the end add up to the same amount according to double-entry bookkeeping rules, a deficit bank has to be trusted to get the needed funds on the interbank market at the end of the day. The orderly working of the banking *system* relies so much on trust, legislation, and good reputation as regards the specific mechanics of interbank payments (see for instance Rossi, 2007, pp. 67-78).

Industrial circulation is the part of the banks' balance sheet that relates to current real activities in the form of households' and firms' transaction deposits. For the single bank these deposits are passively accepted during the day depending on the customers' habits of payments. For the banking system *as a whole* the industrial circulation (the sum of the income deposits and business deposits, see Table 1) is determined by the amount of bank loans granted for ordinary real-sector activities required for production and/or used for buying durable consumer goods and real investment goods. Owing to their customized relationships with business and households, private banks have an absolute advantage in assessing the creditworthiness of their customers and their planned activities. This knowledge is the best available information to approve on loans and to assess the related credit risk by individual banks. In fact, banks earn their profits from the margin of interest (minus credit risk) between the loans to businesses and households and the interest paid on deposits.⁵

The practical problem of the banker consists, therefore, in so managing his affairs that his daily accruing assets in the shape of cash and claims shall be as nearly as possible equal to his daily accruing liabilities in these forms. It follows that the rate at which the bank can, with safety, actively create deposits by lending and investing has to be in a proper relation to the rate at which it is passively creating them against the receipt of liquid resources from its depositors (*TM*, pp. 21-22).

In this passage from *TM*, Keynes warns the individual banker that he should aim at balancing the banks' book of real-sector related activities. Loans to businesses and households should be balanced by an approximately equivalent inflow of industrial deposits. Of course, there might be deviations in this balance; but the wise banker should

⁵ In fact, the interest on bank deposits could be (and has been for longer period in the US) regulated by law.

try to avoid an aggressive loan behaviour, which leaves the bank in a permanent deficit of deposits and makes the bank persistently dependent on short-term loans on the interbank market.

The above passage from *TM* could be read as a warning against the individual bank underestimating systemic risk related to the financial sector in general and more specifically to the banking system interlinked through the interbank market.

Within post-Keynesian literature, it is especially Hyman Minsky (1975) who has discussed the consequences of individual bankers underrating the systemic risk related to bank loans. According to the taxonomy set out by Minsky with regard to modern banking (see, for instance, Nesvetailova, 2007), bankers' forms of behaviour have not been as prudent as knowledge of systemic risk would imply. Minsky's hypothesis is that bankers (and other financial institutions) seem to revise their lending behaviour according to the experiences of the recent past rather quickly. Minsky singles out three stages of lending behaviour with increasingly reduced margin of safety: hedge loans, speculative loans, and Ponzi loans. The behaviour towards risk changes during the business cycle. In its early upswing, banks are rather restrictive in their lending activities and ask borrowers to pay interest and instalments on their loans currently to 'hedge' against credit risk. But, if the economy goes on booming with continuously rising profits, banks become less risk averse. They do not really find it necessary to ask firms (and households) to pay loans back, because default risk seems for the individual bank to have been reduced. Then banks become more willing to make loans automatically revolve, but interests are assumed still to be paid on these revolving, so-called speculative, loans. In the final phase of the business cycle upswing, Minsky's instability hypothesis considers banks as becoming super-optimistic and ceasing to require interest to be paid. Instead, loans are enlarged and collateralized by an expectation of further increases in business earnings and asset prices in the future. Minsky calls this type of loans, which are serviced through new loans, as *Ponzi financing*. In that case, business and investment banks (and their customers) have made themselves dependent on an expectation of continuously growing business cycle and asset prices – which is an illusion at the macroeconomic level. Indeed, the stock market cannot go on increasing the price-to-earnings ratio, and house prices cannot forever go on rising more quickly than the costs of making new houses and real income of new house owners. Something will give in.

When bankers involve themselves into Ponzi financing schemes at the same time, they easily overlook systemic risk. The banking sector *as a whole* becomes increasingly fragile when aggregated bank loans expand more speedily than the real economy. In such cases an external monitoring body is needed to restrict the total credit formation. Each individual banker may think that he is smarter than the average; but 'the average banker' cannot be smarter than the average. Hence, in the final phase of the Ponzi credit cycle the banking sector becomes increasingly instable without individual bankers really noticing it. To prevent such Ponzi financing schemes to build up, an external regulation authority overlooking systemic risk is needed. (Systemic risk within the banking sector is discussed further below.)

Financial circulation is mainly speculative activities

Financial circulation can be separated in Table 1. According to Keynes's argument, it consists of 'business deposits B' and 'savings deposits'. By business deposits B 'we mean the business of holding and exchanging existing titles to wealth, including stock exchange and money market transaction, speculation and the process of conveying current savings and profits into the hands of entrepreneurs' (*TM*, p. 217).

With regard to saving deposits 'as a means of employing savings, *i.e.* as an investment' (*TM*, p. 31), one should be extremely careful with the interpretation. Here, Keynes seems not to distinguish clearly between financial and real investment. That had to wait until *GT*. The important point is that saving deposits might be used for final finance of real investment, *i.e.* being a part of the financial circulation. In the *TM* Keynes did not separate between savings deposits based on an inflow of loanable funds, and a change in portfolio selection caused by increased speculative demand for money. In *GT* Keynes gave up focusing on the distinction between the speculative flow and stock demand for financial circulation. Instead he emphasized that the speculative demand for money can be fulfilled by any financial asset which possesses a stable money value and is easy to sell at short notice.⁶ This means that it is the ability of having a high degree of liquidity (*i.e.* tradability) of saving deposits rather than being a direct means of payment, which plays the most important role in Keynes's speculative demand for money. This is the so-called liquidity preference theory of money, which Keynes did not fully unfold in *TM*. On the other hand Keynes hardly mentioned the role of banks in the *GT*, so one has to combine these two books to get the full understanding of how banks, according to Keynes, act and how they could be regulated within a monetary production economy in an attempt to reduce monetary instability.

In Table 1 we expanded Keynes's taxonomy by adding 'Loan B' and interbank deposits. The activities of banks and non-banks are not clearly separated. They have due to deregulation and changed legislation become something like financial 'supermarkets': with a number of asset activities indoor - business banking (industrial circulation), investment banking (financial circulation), mortgage banking (financing long-term real investments) together with credit card management. Further, these financial supermarkets are interrelated through cross-ownership and mutual guarantees issued in an attempt to diversify credit risks. On the other hand, a number of banks have specialized in specific lending and asset management activities, and, on the other hand, financial institutions.

There is no longer a specific and clearly regulated structure of financial institutions that are allowed to accept deposits considered as means of payment, which are considered and used as to exercise purchasing power. The risk-profile of these (transnational) financial supermarkets is extremely difficult to unveil owing to:

⁶ In a footnote Keynes wrote, that '[f]or example, we can treat as *money* any command over general purchasing power which the owner has not parted with for a period in excess of three month [...]. It is often convenient in practice to include in *money* time-deposits with banks and, occasionally, even such instruments as (*e.g.*) treasury bills' (Keynes, 1936, p. 167).

- lack of balance-sheet transparency;
- lack of understanding of how the financial sector as a whole works, which makes it difficult to understand systemic risk, which cannot be reduced through diversification.

From the above discussion of *industrial circulation* and *financial circulation*, it should have become obvious that they serve two rather different purposes. The first kind of circulation provides the necessary means of payment for the monetary circuit behind the monetary production economy.

Business/Industrial banks could be defined according to the specific role of being the only financial institutions accepting deposits which are legally allowed to be used as means of payment. This definition requires a clear-cut distinction between deposits used as means of payment, and other financial liabilities. Business banks should concentrate on facilitating current real activities with a kind of credit that automatically is transformed into means of payment which can undisputedly be used as industrial circulation. This undisputed liquidity can be established by state guarantee. But to obtain such a guarantee business banks should be willing to accept a rather strict regulation and surveillance which makes their balance sheets transparent and secure a diversified loan portfolio. This kind of regulation would probably require a rather detailed manual on allowed banking activities and further a regulated incentive structure of managing directors.

The unlimited state guarantee does only apply to chartered business banks. In that case the regulation of all other financial institutions (incl. investment banks) becomes less important from a monetary stability point of view, as long as their deposits will not circulate as means of payment.

This interpretation of Keynes's division between industrial circulation and financial circulation leads to an important distinction between money as a means of payment needed for production and final demand, and liquid financial assets used as a secure store of wealth, but not necessarily a means of payments (*e.g.* Treasury Bills).

Financial circulation consists mainly of saving deposits that are demanded by wealth owners in their behaviour towards optimizing their financial portfolio with regard to their expectations on future rates of interest, inflation, and personal expenses. Saving deposits should be liquid in the sense, described by Keynes in *GT*, that they have a fixed nominal price and are easy to sell; but they do not have to be means of payment. This is a very important conclusion, because in these cases it does not have to be business banks that accept saving deposits – which, owing to speculation, are the most unstable part of banks' liabilities.

The fragilities of the traditional banking system

If banks always behaved prudently, and if they interact smoothly through the interbank market, there is, following Keynes, 'no limit to the amount of bank money which the banks can safely create *provided that they move forward in step*' (*TM*, p. 23). This seemingly self-regulating system is seductive, because '*[a] monetary system of this kind*

would possess an inherent instability; for any event which tended to influence the behaviour of the majority of banks in the same direction [...] would be capable of setting up a violent movement of the whole system' (TM, p. 23).

Keynes was hinting at the systemic risk that is inherent in the functioning of the banking system. There is a persistent risk of even sound banks becoming *illiquid*, when just one middle-sized bank fails. The smooth movements of bank transactions require that 'deposit-deficit banks' can get the needed liquidity at the end of the day at a reasonable price, which is disrupted when just one bank fails. Keynes, on the other hand, did not really discuss the other systemic risk (one should probably better say uncertainty) related to banks becoming *insolvent*, that is, when their equity capital evaporates. This type of uncertainty has always been related to the risk of loans to businesses (and households) not being reimbursed, but the risk of insolvency has changed dramatically in tandem with the increasing *financial circulation*.

Although banks aim at reducing their credit risk by portfolio diversification, they cannot avoid in a nationally and internationally integrated financial sector being exposed to a number of similar events. One reason for this mutual exposure is a global price volatility of financial assets, which became apparent in the fall of 2008 (and at many previous occasions, namely, in 1982, 1987, 1993, 1997, and 2000-1). Owing to growing globalization, these volatile asset prices are a worldwide phenomenon, which implies that even internationally diversified portfolios are exposed to a common risk of asset price fluctuations.

In the remainder of this paper we will discuss these risks in light of the current financial crisis, and considering the insights from Keynes's major works as discussed so far.

The risk of illiquidity

Keynes had in mind the risk of illiquidity, because every single bank has to clear its cash-position at the end of each day. If during the day the individual bank has had a deposit-deficit that exceeds its initial stock of cash (that is, outside money), this bank is illiquid (short of cash). The cash balance can be restored by the end of the day through borrowing in the interbank market or by using the discount window of the central bank.⁷ If one (major) bank is excluded from the interbank market, the entire banking system runs the risk of becoming illiquid and a liquidity crisis may develop. This could easily occur when bank deposits are not guaranteed. Then a run on the bank might be initiated just on the rumour that it is short of cash. This run is difficult to withstand, because the cash/deposit ratio will always be too small in such a case. This is not a matter of the bank being solvent: lack of cash (primarily liquidity) may force the bank to close down its shutters, until a source of liquidity has been established, which could easily be found too late. The liquidity squeeze will spread quickly. Just one closed bank means that its (ordinary) customers (other banks, firms, and households) cannot use their deposits as means of

⁷ Not to complicate the analysis, let us just assume that the central bank has one rate of interest that effectively sets the opportunity price of liquid funds.

payment. Subsequently, the bank's customers will become illiquid – and the liquidity crisis will spread like a forest fire to other banks and firms.

Central bank lender of last resort interventions can prevent the financial sector from experiencing a liquidity short fall. Usually, the central bank does step in and supports all solvent banks with the needed liquidity. Instead of forcing banks to sell off their most liquid financial assets and to call back loans from businesses (and households), these assets can be accepted as collateral for liquidity loans from the central bank at a reasonable rate of interest. If the central bank renounces from acting as lender of last resort, illiquid banks have to sell their financial assets. This will cause asset prices to fall and will increase the risk of default. The size of equity capital will crumble when these asset prices fall. This risk applies not only to those banks that sell their assets, but to all holders of financial assets, especially if they have a high balance/own capital ratio.⁸ The higher this ratio (gearing), the more easily is the equity capital washed away, and the bank becomes insolvent.

In September 2008, when one of the largest US investment banks, Lehman Brothers, was excluded from the interbank market, it had to close down its shutters immediately. The implication of this unexpected bank failure was a general distrust within the American banking sector. The question was immediately asked 'who is next?' It came as a big surprise to the financial sector that no rescue plan for Lehman Brothers was set up neither from Washington nor from the Federal Reserve system. The repercussions of the interbank market interruption were much wider and dramatic than expected, because the financial circulation had become dominant in the banks' balance sheets. Therefore, the financial gearing had increased and by that the interdependency within the banking system.

The implication of the Lehman Brothers' collapse was that the interbank market stopped functioning immediately. Banks with an excess of cash would not risk their liquidity to be frozen (or perhaps lost) in another collapsing bank. Hence, they preferred to put their excess liquidity directly into the central bank, although the relevant rate of interest was less favourable. Deficit-banks became thereby severely liquidity squeezed. The federal government had to act swiftly to de-freeze the interbank market, by providing a kind of unlimited state guarantee to all (normal) depositors within the banking system (business and investment banks). When that had been done, surplus-banks were once again willing to lend to other banks, which made the interbank market start to re-function, but at a smaller and more hesitant scale.

The uncertainty of insolvency caused by defaults in the real and/or financial sectors

Illiquidity and insolvency are technically speaking two different phenomena. As explained above, banks have to balance their books every day – loans have to be matched by deposits and interbank loans. Insolvency is another risk caused by lack of own/equity

⁸ For banks the balance/own capital ratio should not fall below 8 per cent according to Basel agreements. In such case they are considered in a vulnerable position and will usually be asked to increase their own capital.

capital. These two risks are however interconnected. An insolvent bank is forced by law to close down. In fact, the legal requirement for a bank to operate is at a minimum size of equity capital amounting to 8 per cent of the total (risk-weighted asset balance). This implies that if a bank comes close to this minimum, it becomes increasingly difficult for it to obtain interbank market loans and a run on this bank is looming. To the best of our knowledge, Lehman Brothers was insolvent at the time of collapse, which explains why no other financial institution was willing to take it over – too many bad loans and volatile financial assets had eroded its equity capital.

On the other hand, an illiquid bank that is forced to sell quickly assets (and to call loans back) could easily experience that the equity capital is eroded owing to falling assets prices. Hence, insolvency often follows in the wake of illiquidity, if the lender of last resort does not act quickly, because then an increasing number of banks have to sell their financial assets at the same time.

Defaults on loans are, of course, to a minor degree unavoidable in an uncertain economic environment as the one ‘we happen to live in’. But once again it makes sense to separate between bank loans to businesses and households (the ‘active’ part of industrial circulation), and bank loans to other financial institutions (the ‘speculative’ part of financial circulation). As the gearing of the asset-balance traditionally is much higher in a financial institution than in firms and households, the risk of default is higher and enforced by the high degree of interdependency within the financial sector.

Conclusions and policy recommendations

From the above analysis inspired by Keynes’s distinction between industrial circulation and financial circulation, there are a number of straightforward policy recommendations to make the means of payments system more stable.

Following the above arguments, there are two important but distinct characteristics of industrial and financial circulation which could, as mentioned above, be delegated to two equally distinct kinds of financial institutions: business banks, on the one hand, and financial banks/institutions, on the other hand. Business banks should undertake the provision of means of payment for real-sector activities, which is prominent in monetary circuit theory. Business banks supply the industrial circulation/deposits which function as means of payment. To avoid liquidity crises, it is important that these business banks deposits on the one hand are state guaranteed, but on the other hand are closely regulated by legislation and monitored by a government body of supervision.

Financial banks/institutions could undertake other financial activities, which can be detached from being providers of means of payment, for instance matching funds for saving and investment. One crucial role of finance is to transfer purchasing power from savers to investors. For good reasons an important part of financial circulation is called saving deposits, which are accepted by financial banks/institutions. These banks and other financial institutions should also be supervised, of course, but less severely than industrial banks, because people would know that when they trade with these other

financial institution rather than business banks, there is no state guarantee attached to deposits.

A clear-cut separation between business banks and financial banks/institutions with regard to regulation would secure that the means-of-payment function is anchored in such a way that systemic risk can be better controlled by the authorities. The problem with the means of payments crisis in 2008 was that the overall sum of banking activities had run out of control. The growth of bank credit exceeded real-sector activities by several times. Transactions between banks, investment banks, mortgage institutions, insurance companies, and so on, have grown immensely and drawn a stream of newly-invented financial products supplied by banks. This development occurred partly because of deregulation (among other things implying increased globalization) and partly owing to changed financial technologies (and products), which have called for portfolio diversification to an extent that dominates the balance sheets of financial institutions and even ordinary banks. The extension of financial circulation by ordinary banks has imposed a considerable extra risk to the entire banking system as a whole, which was hardly recognized by individual banks. Deregulation nationally and globally has made it more difficult to overlook and understand the individual banks, which is a further argument for the division of the status of deposits in business banks and in other financial institutions.

A related question is to decide on the exact requirements to be fulfilled before a financial institution should be allowed to call itself a business bank. The most important thing is to secure that equity capital is protected against unforeseeable risks. As stressed in monetary circuit theory, banks provide the means of payment. Therefore, they have a unique role to play, which can be undermined by lack of trust. One good indicator of trustworthiness is the size of banks' equity capital. The actual development has shown that most banks had too little equity capital to be a part of a financial supermarket. In the paper we argued that industrial circulation should be anchored in 'industrial' i.e. business banks, which have received a special charter that makes their deposits legal tender by law and backed by state guarantee; but one should also put a number of restrictions on the kind and size of loans these banks are allowed to grant. These restrictions would reduce the risk of bankruptcy and therefore liquidity crises within a reformed banking sector. Further, their reduced scale of activities would also limit the size of business banks' balance sheets.

Smaller banks are also more democratic institutions. In fact, it is a democratic problem that banks – providers of means of payment – had grown so big, that they were 'too big to fail'. The experience of Lehman Brothers' bankruptcy was scaring for US authorities. But the situation was even worse in Iceland, where banks had grown to such a size, that they had become too big to be saved (without support from the International Monetary Fund). Chartered banks should in that perspective concentrate on supplying industrial circulation, be prudently regulated, and have some kind of depositor insurance.

Financial circulation is not directly related to real activities and could therefore be treated as any other ordinary financial activity without special considerations. The liabilities of financial banks/institutions, however, should not be given the status of ultimate means of

payment. In sum, industrial and financial circulation should be institutionally and legally separated. This is one lesson learned from Keynes, which has only partly been integrated into monetary circuit theory and more dramatically so into the regulatory and supervisory regime at the time of writing.

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