

## Ch.3 – The Macroeconomic Function of Money

This chapter is about the function of money after Bagehot. We face here the core element in the building of a open money supply approach. Our assumption is that the existence and health of commercial banking, collecting and connecting the savings and investments of a nation, is the aim of central banking.

The red line guiding to the money function is offered by Bagehot in the following paragraph<sup>88</sup>: “All a banker wants to pay his creditors is a sufficient supply of the *legal tender* of the country, no matter what that legal tender may be. Different countries differ in their laws of legal tender, but for the primary purposes of banking these systems are not material. A good system of currency will benefit the country, and a bad system will hurt it. Indirectly, bankers will be benefited or injured with the country in which they live; but practically, and for the purposes of their daily life, they have no need to think, and never do think, on theories of currency. They look at the matter simply. They say –‘I am under obligation to pay such and such sums of legal currency; how much have I in my till, or have I at once under my command, of that currency?’”

Bagehot separates the money concept expressed in doctrines and laws from the money function implied in the actual demand of bankers. By first ignoring emission rules, he can perceive the market working mechanisms, which the money function adheres to. Of course does the ruling currency system matter, since it decides over the money supply. Bagehot ignores the current rules, since he wants to signal a different approach to money supply.

Basing on Bagehot’s examination of the roots of demand, we will proceed in our analysis of the money function by developing two arguments.

The first argument shows the peculiar way money matters for credit. A functional dependence of the credit market from the money market will be evidenced, contrasting with the mainstream approach to credit market equilibrium, and to money dependence from credit.

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<sup>88</sup> LS, Ch.II, p. 22 and ff.

We feature the instability of the credit line in case of inadequate management of the money market, thus revealing the fundamental lack of autonomy affecting the credit market. The money market grounds on a special role, historically played by central banks, and we will discuss the features expressed by an efficient interpreter of this role in the market, in order to understand quality and limits of the traditional central bank playing it. This will help us to systemise Bagehot's principles into a money market structure able to stabilise money demand and, consequently, credit.

The second argument bases on the concept of "convertibility", dear to Bagehot. Convertibility matters, since it contains the reversibility principle connecting credit and legal tender, credit and deposits, deposits and legal tender.

Bagehot's approach to balanced financial development grounds in the nature of the most essential contract characterising a monetary economy, the commercial bank's contract enabling the intermediation between savings and investment flows, and the effects its implicit reversibility-promise exerts on the development of the whole financial system.

Reversibility of credit into money is a key to Bagehot's approach, building trust in a monetary economy characterised by the unstoppable rising of credit business. Deposits accumulation leads to credit creation, credit supply leads to deposit creation, deposits and credit are to be finally refunded in legal tender, mostly on demand.

## **1. Monetary Economy Redefined (1.)**

The concept of "monetary economy" is ready for a radical redefinition. The redefinition of the features characterising an economy as monetary in a concrete and modern sense will become a reference while we discern between pre- and monetary market concepts.

Recalling the arguments exposed in Ch.1, we can affirm after Bagehot that not every economy using a numéraire can be considered a monetary economy.

We try here a first version of the new definition, to be deepened in the next chapters.

'Monetary' is an economy characterised by:

- a well developed and developing financial market,
- a well developed credit market as the main component of the whole financial sphere,
- a wide economisation of cash, enabled by the use of cheques and of other 'means of exchange' (credit cards and other non-liquid payment tools),
- the use of central bank fiat money as the legal tender, i.e. with the function of unique and sole means of payment in the system.

Such an economy shows a clear solution of continuity with the antecedent economic systems based on barter, pre-monetary or ancient-monetary payment systems<sup>89</sup>.

## 2. The unstable credit market

In the following paragraphs we show the inadequacy of the classical and neo-classical theory to describe the working of the credit market in a monetary economy context.

The orthodox reasoning cannot see the system's intrinsic instability, which is transmitted throughout the credit market and the financial sphere down to the whole monetary economy. Coming specifically to the orthodox solution of fixing money quantity, this not only cannot protect money from its fragility, but it enhances it and becomes a major cause for general instability.

### 1- Barter systems' stability

In the form expressed by Walras, a market achieves stable equilibrium when its structure can be described as fitting the general system of perfect competition:

$$Q_d = Q_d(p)$$

$$Q_s = Q_s(p)$$

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<sup>89</sup> Ref. Ch. 2 in this paper.

$$Q_s = Q_d$$

Referring to the credit market:

$$C_{rs} = C_{rs} (i_{CR})$$

$$C_{rd} = C_{rd} (i_{CR})$$

$$C_{rs} = C_{rd}$$

Translating walrasian formulas, the price on credit – the same can be argued for the market for deposits – should balance the supply of and the demand for credit.

When, however, with money supply fixed (under neo-classical assumptions), the demand for money gets unstable, any attempt by commercial banks to attract money merely through interest rate increases (on the deposit and/or the interbank market) must remain unsuccessful. When the demand for money is unstable, people do not give up any cash.

Marshall's description of a stable equilibrium process under perfect competition runs as follows:

$$p_D = p_D (Q)$$

$$p_S = p_S (Q)$$

$$p_D = p_S$$

or also, in credit market terms:

$$i_{CRd} = i_{CRd} (C_r)$$

$$i_{CRs} = i_{CRs} (C_r)$$

$$i_{CRd} = i_{CRs}$$

Here, the change in quantity (of credit) should move prices in such a way on the market that it reaches stable equilibrium. Bagehot shows instead that any attempt by the commercial banks during a liquidity-crisis to sell financial investments deemed "good" from the perspective of "normal" times, must fail.

This attempt is destined to fail, since it causes the asset price to fall even further, without helping the market to reach any equilibrium

price<sup>90</sup>: "I suppose almost everyone thinks, that our system of savings banks is sound and good. Almost everyone would be surprised to hear that there is any possible objection to it. Yet see what it amounts to. By the last return the savings banks - the old and the Post Office together - contain about £60,000,000 of deposits, and against this they hold in the funds securities of the best kind. But they hold no cash whatever. They have of course the petty cash about the various branches necessary for daily work. But of cash in ultimate reserve - cash in reserve against a panic - the saving banks have not a sixpence. These banks depend on being able in a panic to realise their securities. But it has been shown over and over again that in a panic such securities can only be realised by the help of the Bank of England, that is only the Bank with the ultimate reserve which has at such moments any new money, or any power to lend and act. If in a general panic there were a run on the savings banks, those banks could not sell £100,000 of consols without the help of the Bank of England; not holding themselves a cash reserve for times of panic, they are entirely dependent on the Bank which does hold that reserve."

The structure of credit depends on the money market. Since credit market payments are closed in legal tender and since the banking business consists of continuous investment of the legal tender left in their charge, it is the task of the central bank to solve the collective liquidity problem. Otherwise, the credit market would be deprived of its stability, i.e. of its basis for existence.

We can say that the classical and neo-classical approaches do not apply to the case of a monetary economy.

## 2- Classical credit market structures

A panic shows that the credit system's stability is based on liquidity. It should be noted that this liquidity preference is absolute and unstable, i.e. it can rise infinitely if it is not promptly and fully satisfied. How can orthodox theory, in the face of its assumption of a fixed money supply, derive a credit equilibrium? We avoid treating the "equilibrium" concept, although in this case the relationship between equilibrium and stability is direct.

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<sup>90</sup> LS, p.330.

We will shortly discuss the problem implicit in the equilibrium approach to credit models in mainstream theory:

"There are at least four distinct notions of credit market equilibrium in the literature.

The traditional Walrasian notion of credit market behaviour says that loan supply must equal loan demand in equilibrium.

Jaffee and Russel demonstrate that, if default probability is an increasing function of loan size, then the rate of interest charged on loans must increase as loan size increases, assuming financial intermediaries take the rate of return on deposits as a given. In this case, the credit market may exhibit an equilibrium in which credit is rationed. [...]

Stiglitz and Weiss derive a third notion of credit market equilibrium. They argue that, if default probability is an increasing function of the borrower's repayment obligation, then it is possible that, over some ranges of interest rates, the return to the financial intermediary might actually be a decreasing function of the rate of interest charged on loans. Stiglitz and Weiss demonstrate that, if there exists a unique interest rate on loans which maximizes the return to financial intermediaries on each loan issued, then there exist supply functions of funds such that credit is rationed in equilibrium. [...]

Finally Bruce Smith presents a fourth notion of credit market equilibrium. Basically, Smith adopts a model of credit market behavior similar to that used by Jaffee and Russel, but adds that the supply of loanable funds is increasing in the rate paid to depositors. [...] Such an equilibrium again involves credit rationing."<sup>91</sup>

None of the best-known approaches to credit market equilibrium deals with the illiquidity case, together the most difficult option to be modelled, and yet the sole adequate one to represent a monetary economy. In this logic it follows that the banking system is retained able to finance every crisis out of its own resources. They in substance imply the autonomy of the credit market, as if money could be directly issued by commercial banks. An hypothesis, which

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<sup>91</sup> Wakeman-Linn, J., *Alternative Notions of Credit Market Equilibrium: Their Significance for Monetary Policy*, in "Williams College Research Paper Series", Department of Economics, Williamstown, Mass., March 1988.

perfectly explains the strong attachment of the orthodox credit approach for investing commercial banks with the role of money issue.

The possibility of reaching equilibrium at all using assumptions belonging to the quantity theory-area rests on ignoring the problem of liquidity. Only the problem of default, i.e. the capacity of the system to evaluate the creditworthiness of its customers, can be modelled under orthodox micro-assumptions, and under the fixed money supply macro-condition. The credit equilibrium models cited above seek to limit the investigation to the microeconomic level. Hence they achieve "money-free equilibria".

The experience of financial crises shows the rapid fall in the public's acceptance of deposit money and the simultaneous rise in the demand for money. In order to satisfy the demand for money in a crisis, should fixed money supply also be assumed, the banking system would have to be able to issue money or to sell assets without any loss of value.

There is an extended literature dealing with the first question. We will approach the issue in next paragraph. But should each individual bank also be able to provide for its own solvency, no banking system can be made responsible for its own liquidity, since in the nature of credit business the sums deposited for safekeeping are, in the short term, entirely tied up notes<sup>92</sup>: "[There is no] other store of unused cash except the reserve in the banking department of the Bank of England out of which advances in time of panic could be made. These advances are necessary, and must be made by someone. The 'reserves' of London bankers are not such a store; they are used cash, not unused; they are part of the Bank deposits, and lent as such."

About the asset liquidation price, orthodox theory considers it exogenous, so that the commercial banks are fictitiously enabled to circumvent the loss in value of deposit money, which actually characterises crises.

We already saw that on the contrary every attempt by commercial banks to make distress-sales of stock only leads to a further drop in

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<sup>92</sup> Lombard Street, p.171.

their value and to a further increase in the demand for money, which cannot be halted by the banking system alone<sup>93</sup>: "The bank is [in a panic] the only lender on stock [...] Unless the Bank of England lends, no stock will be bought. There is not in the country any large sum of unused ready money ready to buy it." Accordingly, the prices for liquidating deposit money are actually determined endogenously by the system. Should thus money supply be fixed, commercial banks can bring about no equilibrium until the system is destroyed, i.e. they can only reach equilibrium at a zero price.

### 3- Classical credit market structures and the central bank

Bagehot observes that the stability of a monetary economy and thus also of its credit market depends on the "procedure" used to finance a crisis, i.e. to release liquidity. This introduces us to the role applying to the central bank, the main money market's participant.

Authors belonging to the orthodox tradition seek to prove that there is no necessity for the existence of a central bank, because commercial banks can themselves initiate a mechanism for solving illiquidity crises.

Glen-Donaldson<sup>94</sup> studies the 1907 US-liquidity-crisis, which could be overcome thanks to a private consortium of commercial banks, acting as a "reserve agent" for the whole system. The author explains the consortium's success by referring to the special qualities it showed. First, the consortium acted under "non profit"-agreements, in order to avoid further worsening liquidation prices, thus according to the rules of a public body, as the central bank is. Second, the consortium was made able to issue securities with a promise of repayment ("clearing house certificates"), meeting the public's acceptance as temporary money-substitutes.

Even by representing the neo-classical approach to the private money issue hypothesis, Glen-Donaldson paradoxically exits it, in

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<sup>93</sup> LS, p.190.

<sup>94</sup> We refer in this paragraph to two studies by the author: "Financing Banking Crises: Lessons from the Panic of 1907", *Journal of Monetary Economics*, p. 69-95, 1993; and: "Costly Liquidation, Interbank Trade, Bank Runs and Panics", *Journal of Financial Intermediation*, vol.2, p. 59-82, 1993.



that he goes the two fundamental steps against it: first he analyses the issue of illiquidity directly, second his model endogenously determines liquidation costs for deposits.

In the option between a public and a private authority for currency issue, the characteristics of the consortium in his example coincide with those featured by a central bank, specifically with the characteristics expressed by Bagehot as the central bank's due characters. Glen-Donaldson's specific proof that a crisis can be privately financed actually underpins the justification of a "Bagehotian" central bank playing this role.

His critique is neutralised by the functions assumed by the consortium, acting as a collective subject. Endogenously determined liquidation prices for deposit money in the model show that the author considers stability problem in a credit system to hang on the non-acceptance of money-in-circulation as the ultimate medium of payment and/or promise of payment, i.e. on the general acceptance of promises of payment.

The interesting aspect concerns the institutional character of a central bank. The institutional form of the central bank brings about, via the State's guarantee, an exogenous acceptance supporting deposit money. Bagehot discussed in a less famous pamphlet<sup>95</sup> about the comparative efficiency of one national central bank vs. more private banks playing the same role. One national Bank is not essential. In front of alternative choices about the institution's legal status, and of various stable historical examples, what matters is the precise definition and quality of its responsibilities.

The "elasticity" of credit is founded on the acceptance of central bank money. This, however, bases in turn on elastic money supply. In presence of endogenous determination of the value of deposit money in a crisis, the re-equilibrium of the credit system rests on there being a buyer for deposit money that can prevent an endless downward spiral in the liquidation price of deposit money – exactly in the way Glen-Donaldson's consortium acted.

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<sup>95</sup> Bagehot, W. (ed.1969), *A Practical Plan for Assimilating the English and American Money as a Step towards a Universal Money*, Greenwood Press Publ., New York.

The concrete lack of acceptance of this function, when it is played by a central bank as a public institution, can be found in Glen-Donaldson as well as in a huge number of theorists. It is the consideration of a central bank as 'government' and not actually as a bank, it is considered a political subject unable to respect market's rules. Bagehot observed that a single national central bank is best suited for the job of marginal "purchaser" of deposit money on the money market, since it supports as a pure market player the deficiencies of the non-autonomous credit market<sup>96</sup>: "The Bank of England used to be a predominant, and is still a most important, dealer in money. It lays down the least price at which alone it will dispose of its stock, and this, for the most part, enables other dealers to obtain that price, or something near to it."

In addition, as a micro-market participant and in force of its macro-economic function, during the crisis the central bank moves the liquidation price depending on the demand for money emerging in the market. This reflects changes in confidence in the banking system, stabilising at the same time the price for deposit money. It prevents an infinite increase in interest rates for credit, together with the infinite fall in the price of deposit-money. And it steers the credit system, via money market interest rate increase, to a reduction in the volume of credit, to an extent according with the loss of acceptance in the credit system.

### **3. The stable money market**

Money and credit markets are treated as one in prevailing monetary theory. Bagehot reveals instead a) their independence in function, b) the autonomy in structure and policy of the money market, and, most important, c) credit market macroeconomic dependence from the money market. Credit market dependence from the money market comes from credit instability without stable money.

Correspondingly, the shape of the money market cannot follow the credit market dynamic, since it has to take account of the unique pivot role of the money function.

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<sup>96</sup> LS, p. 114.

According to its autonomy, the money market provides at the micro-level for genuine and market-related price-to-quantity relationships, i.e. being a consistent market, so that the price of money is positive. At the macro-level the money market carries out its function as the system's manager, including the markets for goods.

We analyse in the following the single components of the money market structure, according to Bagehot's rules for stability. Its adequacy in bagehotian terms is measured via money demand and credit market stability.

## 1- Supply

According to Bagehot, the market function of money is expressed by:

- (i) Supplementing the credit market with money supply whenever, as a result of a loss of confidence<sup>97</sup>, a rise in money demand occurs;
- (ii) Providing an interest rate appropriate for the credit system's stability via the money market.

(Central bank) Money is the actual "product" traded on the credit market, therefore credit equilibrium and stability must be found on the money market.

Noteworthy in Bagehot's analysis on the central bank's responsibility and the function of money is the insight that confidence creation and sustain are core elements to a monetary economy's health and that confidence can be solely sustained through meeting the demand for money. Money is thus defined as the highest guarantor of confidence, as the means of payment, but also as the procedure that, through ensuring an open-ended supply of money, concretely validates that guarantee.

Bagehot provides thus a definition of money (and of liquidity) both as a function and as a procedure, and it is the adequate procedure (monetary policy) which provides money with its identity.

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<sup>97</sup> An increase in exchange on the market for goods can be met through private financial assets.

Money is created through the procedure of its issue. Therefore, it is of major importance that the issue-procedure is properly understood and correctly implemented. Bagehot identifies money with the stability policy needed for its issue, since when money is trustworthy there is a monetary economy. The Peel Act is non-pertinent not because it deals with the currency issue, a crucial theme to Bagehot, but since this is not related to the substance of money, which is not generally the need of exchange (a reference to non-monetary economies) but the need of credit.

The following sentence exemplifies the attempts and difficulties the BoE directors experienced in finding out the rules for adequately expressing the money function<sup>98</sup>: "After the suspension of cash payments in 1797, the directors of the Bank of England could issue what notes they liked. There was no check; these notes could not come back upon the Bank for payment; there was a great temptation to extravagant issue, and no present penalty upon it. But the directors of the Bank withstood the temptation; they did not issue their inconvertible notes extravagantly. And the proof is, that for more than ten years after the suspension of cash payments the Bank paper was undepreciated, and circulated at no discount in comparison with gold. [...] The Bank directors adopted the ordinary opinions, and pursued the usual practice of their time. It was this 'routine' that caused their moderation. They believed that so long as they issued 'notes' only at 5 per cent, and only on the discount of good bills, those notes could not be depreciated. [...] They failed in time, and the theory upon which they were defended was nonsense; but for a time their operation was powerful and excellent."

The rules for money supply are crucial to the survival of the system, thus the extreme care Bagehot takes in understanding them under analysis of their practical effects.

This way "open-endedness" of money supply, by shaping the money function itself, answers a structural and functional need, the essence of the money market existence and stability. Given "open-endedness", all the different central bank's arrangements to manage the market under this condition, i.e. the different tactical choices regarding the choice and the use of the available tool-box,

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<sup>98</sup> LS, p.175-177.

as discussed in Ch.1, are a secondary matter for monetary policy. Open money supply is the general principle.

## 2- Demand

The demand for money is formed on the credit market and expresses itself on the money market. This relation explains credit market dependence.

Being endogenous to the credit market, money demand is to be considered an exogenous variable within the structure of the money market.

## 3- Price: interest rate

While uncapped money supply is the essential measure preserving financial market's integrity and health, raising interest rates has a secondary role in the mechanisms of the money market<sup>99</sup>: "By raising the rate of interest we can cure the foreign drain; but an increase of the value of money would not mitigate or diminish a domestic panic. Probably it might enhance the alarm; at any rate it would not cure it. [...] The remedy seems plain. There ought to be within the law, a power of doing, when necessary, precisely what was done without and beyond the law in 1847 and 1857. The Chancellor of the Exchequer and the First Lord of the Treasury should have the legal power of suspending the Act of 1844."

Raising interest rates can never on its own quell a panic. Yet, Bagehot considers it as the second principle fundamental element while formulating his optimal money policy. We try to understand why, and the whole mechanism takes a more clear macroeconomic significance in the two following chapters.

The rise of interest rates on the money market surely acts as the budget-restriction of the market<sup>100</sup>: "This provision would under no circumstances tend to render money cheaper. We are quite opposed to those who amend the law of 1844 in the interest of laxity

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<sup>99</sup> LS, p.111.

<sup>100</sup> LS, p.114.

- in the interest of insolvency. When capital is scarce the short loans of it ought to be dear; and when capital is plentiful, the short loans of it ought to be cheap."

By providing money at demand, central bank's credit to the commercial banking system forms a debt, which must be repaid. The height of its price makes the difference.

Further, uncapping money supply without curbs exercised through money market interest rates would cause confusion in credit/capital market rates and eventually push banks into insolvency. Rising interest rates on the money market signals the presence of a higher risk on the credit market, creates the consciousness preventing from the danger, and from the later stronger increase of credit-interest rates.

Warranting convertibility means for the central bank to ensure that commercial banks re-pay their own promissory notes. The raising of the money market interest rate while issuing money establishes a further link between money (the credit market for commercial banks) and credit market (the credit market for investors) interest rates, by connecting commercial rates' actualisation to new money demand dynamics, this way avoiding any risk of insolvency.

While open-ended money supply is the condition for the macro-stability and existence (i.e. liquidity) of credit markets, micro-instability (i.e. insolvency) is avoided through the rise of interest rates. Bagehot's policy emphasises the central bank's market-based role alongside the credit market actors, thus showing the relevance of central banks acting as market participants.

The role of central bank interest rate as the instrument to achieve equilibrium conditions for optimal funds allocation and the completion and complexity of the open supply macroeconomic mechanism will be further discussed in Ch.5.

#### **4. Money function**

The understanding of the fundamental instability affecting the credit market, due to the emergence of money demand, has to be com-

plemented by an adequate definition of the money function, in order to develop the knowledge about the macroeconomics of the money market.

By affirming that credit needs money for its stability, we come along to our fundamental question again: which money for credit?

Which money function fills the need of modern financial systems characterised by increasing credit pyramids and a high reversibility grade in credit contracts?

## 1- Money nature

In a barter economy based primarily on the exchange of goods, as in the Theory of General Equilibrium, no other money function is required than a means to facilitate the exchange of goods<sup>101</sup>. Establishing value in such a system requires only the "invisible hand" of the market, or that of an auctioneer; and since a barter economy recognises no category of value other than goods themselves, the price system is based on a good that serves as a "numéraire". A barter economy system is comprehensively described in neo-classical theory, but this theory provides no adequate model for a monetary economy.

When money is a "good" like any other, then it is precisely its properties as a good that enable it to fulfil its function as a means of exchange. It is a valuable, i.e. a scarce good such as gold, of acknowledged value in the form of coins minted by the State, easily transported and imperishable. This is not fully money, but just a means of exchange, it has no link to modern macroeconomics of trust. In such a case the fixed supply of money, linked to the total supply of goods on offer, provides for scarcity (as a budget-curb) and ensures that the system is adequately self-sufficient and closed. Such a system is not money-based, it is goods-based. The QT of money was based originally on a pure barter economy, its function is correspondingly constructed and is internally consistent.

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<sup>101</sup> Keynes' multiple function definition arises indeed out of his critique of the orthodoxy, and of his will to provide an adequate theory for a monetary economy.

The real motivation for the genesis of money in modern monetary economies is not the exchange of goods, but the development of credit as the basis for economic development and acceleration. The best suited money to fulfil the macroeconomic function needed by such an economy is the money issued at credit by the central bank.

Credit never involves a concrete exchange of goods, it is rather an abstract transaction of values on a time basis. The inclusion of time in the economic calculation is the element that calls for monetary compensation in the genesis of a credit-based economy: money serves as the symbol of confidence that is required in time-based contracts.

In a modern sense, a monetary economy is defined as a credit-based system. A credit transaction is to be distinguished from an exchange of goods: an exchange of goods is fully completed at a point of time "t". A credit transaction, on the other hand, extends over the period from when it is agreed "t" to the point when it is repaid "t+n" (though "n" is defined in the contract). A transaction that extends over a period of time requires the confidence of the creditor that he will get his money back and compensation for foregoing use of the money loaned for this period. This applies not only to loan agreements between individuals as commercial entities, but especially to the relationship between banks and their clients: a loan contract, or the opening of a bank account, foresees the permanent possibility of a demand for repayment of the same nominal amount.

The essence of a transaction in a monetary system is confidence in the commitment and ability to pay, a rare and fragile condition<sup>102</sup>: "Credit -the disposition of one man to trust another- is singularly varying. In England, after a great calamity everybody is suspicious of everybody; as soon as that calamity is forgotten, everybody again confides in everybody". "The peculiar essence of our banking system is an unprecedented trust between man and man; and when that trust is much weakened by hidden causes, a small accident may greatly hurt it, and a great accident for a moment may almost destroy it."

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<sup>102</sup> LS, p.129.



Because of the variability in the conditions for confidence, the sustenance of confidence to the greatest possible extent is to be taken as a goal, and for its nature as a macroeconomic goal.

## 2- Legal tender

Money is what is bought and sold on the credit market, money is the "good" which is traded on the credit market. Panic represents the most extreme need for money occurring in the credit market.

Instead of ignoring panic as irrelevant – as orthodox theory does –, Bagehot takes it as the paradigm enabling money and money market explanation. Panic demonstrates the difference between money and "not"-money; particularly, panic explains the difference between central bank and deposit money, thus explaining why central bank money is indispensable for closing the credit cycle.

Both are categorised as credit, but only central bank money is the "legal tender". The legal tender not only incorporates the State's institutional guarantee, which in itself provides the ground for greater confidence in its validity as a means of payment, but (as we saw above) it also incorporates the features characterising the money market management and central bank's role.

This gives rise to a fundamental distinction between deposit money and (central bank) money. In addition, the distinction is reinforced by the varying nature of their monetary holdings resulting from the differing functions of a commercial and a central bank.

The availability of central bank money is indispensable because the physical bank notes used in everyday business are more dispensable, the more developed and secure a credit system is. Already in Bagehot's well developed British credit system the use of the legal tender for the exchange was rare<sup>103</sup>: "[...] no one pays any large debts except by cheque. [...] Bank notes in general, and in their customary use, are but a retail currency. Small matters are settled by them; large matters are settled without them."

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<sup>103</sup> LS, p.76.

The fact, however, that credit system stability is based on readily available bank notes becomes clear the moment any suspicion arises that a bank cannot meet its obligation<sup>104</sup>: "We require more bank notes, just because the feeling, the confidence which made few bank notes effectual, has disappeared." Bagehot focuses on panic as the paradigm for understanding the money function. Panic observation leads him to consider central bank money, legal tender, as "the" money. Nevertheless, getting into detail, it is not central bank money as such, legal tender is not the essential condition, since the credit market requires a legal tender fulfilling precise (emission) criteria, performing the needed money function.

## 5. Convertibility

A kind of paramount precondition for the health of a currency is represented for Bagehot by the guarantee of convertibility ("cash payments"), which identifies to him the stability status<sup>105</sup>: "[...] a currency of inconvertible paper is among the greatest of possible evils to a country which begins it, and that in a rapidly progressive country even a fixed amount of such currency works an amount of harm which never could have been imagined beforehand." "Convertibility of money" encloses to him the principles securing stability.

Convertibility is described by Bagehot as the changing of paper money into gold, as gold made still the basis for Central Bank's issue of paper money at his time. As we discussed in Ch.2, the monetary policy developed in "Lombard Street" – open-ended issue of money and simultaneous raising of central bank interest rates – directly served the goal of holding constant the Bank's gold reserves which underpinned the convertibility of paper into gold. Holding gold reserves constant played a major role for Bagehot, while the gold standard was in force<sup>106</sup>: "The object of publishing the account of the banking department of the Bank of England is to let the nation see how the national reserve of cash stands, to assure the public that there is enough and more than enough to meet not only all probable calls, but all calls of which there can be a

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<sup>104</sup> LS, p.321.

<sup>105</sup> LS, p. 34.

<sup>106</sup> LS, p.321.

chance of reasonable apprehension." More generally, however, Bagehot focuses on confidence as the real priority in his thinking.

The importance of securing and covering paper notes through gold diminished sharply with the abolition of the gold standard and the weight given to gold in central bank strategies for maintaining confidence has likewise diminished. Holding constant reserves to ensure convertibility can be seen as the expression of one (weak) solution for building confidence in a monetary economy, where building confidence is the key question for stability.

This principle of confidence building underlying in a monetary economy is expressed through assuring the convertibility of deposit money into central bank money. Convertibility acquires thus a second meaning, namely "conversion of deposit money into central bank money". This is the very core element in the existence of modern financial markets, it shows the hinge between money and credit market, explaining the need for money and the need for an uncapped money supply.

## 1- Interpretations around convertibility

In the late 1920s, at the end of the gold/sterling block era, Gustavo del Vecchio, an Italian economist, author of numerous studies on the policy of monetary stabilisation, undertook an analysis of the British money market<sup>107</sup>, investigating the reasons for its world-wide success, such as Bagehot had done some decades before.

Del Vecchio firstly attributed the high degree of acceptance of British paper money and promissory notes (cheques, securities, shares and other financial instruments) above all to the Bank of England's constant readiness to convert bank notes into gold.

By further investigating the balancing mechanism of the British money market he expected to discover a sophisticated "internal mechanism of balance and stabilisation" in the structure of the country's credit market, which led to the world-wide acceptance of Sterling as a key currency.

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<sup>107</sup> Gustavo del Vecchio, *Il mercato monetario*, in "Annali di Economia", 311-324, 1926-27.

He expected the internal balance mechanism to be in the elasticity of the British credit and in the close relationship the Bank of England cultivated with the commercial banks, specifically:

1. in the systemic central bank's setting the money market interest rate higher than the credit market rate, and
2. in the reserve requirements for commercial banks.

Such a mechanism enabled competing commercial banks to expand their activities only as long as their interest rate was below the money market rate and their reserves were above the minimum level. The mechanism was able to force them to contract in the opposite situation. The "internal" mechanism seemed to del Vecchio to function far faster and better than the balancing mechanism of the Quantity Theory, consisting in the hypothesis of a prices' general level change resulting from the movement of gold to and from the country.

Even if he recognised the need to stabilise money via credit, rather than via goods' prices and money supply control, his analysis of the credit mechanism overlooks the specific significance of the demand for money.

The revolution in monetary thinking, the mechanism leading a monetary economy to stability is indeed to be found inside the money market. The "internal balancing mechanism" and the elasticity of the British monetary sphere, intuited by del Vecchio, are to be principally found in the open discount window instead.

Thus the sophisticated "internal mechanism of balance and stabilisation" of British credit, leading to world-wide acceptance of Sterling as a key currency was Bagehot's open money supply plus money market interest rates adjustment.

Open money supply causes thus perfect preservation of convertibility.

## 6. Money function revised

### 1- Extraordinary money demand

"If, therefore, an English banker retains a sum of Bank of England notes or coin in due proportion to his liabilities, he has a sufficient amount of the legal tender of this country, and he need not think of anything more. But here a distinction must be made. It is to be observed that properly speaking we should not include in the 'reserve' of a bank 'legal tenders', or cash, which the Bank keeps to transact its daily business. That is as much a part of its daily stock-in-trade as its desks or offices; or at any rate, whatever words we may choose to use, we must carefully distinguish between this cash in the till which is wanted every day, and the *safety-fund*, as we may call it, the special reserve held by the bank, to meet extraordinary and unfrequent demands. What then, subject to this preliminary explanation, is the amount of legal tender held by our bankers against their liabilities? The answer is remarkable, and is the key to our whole system. It may be broadly said that no bank in London or out of it holds any considerable sum in hard cash or legal tender (above what is wanted for its daily business) except the Banking Department of the Bank of England."<sup>108</sup>

The most remarkable element in this analysis is the distinction between 'daily business'- and 'extraordinary and unfrequent'-demand for cash coming out of the credit market. Considering the 'extraordinary and unfrequent' money demand with the lens of panic-analysis takes to a dramatic change of perspective in the study of money demand.

Extraordinary demand for money can not be predicted, it is a signal of the instability intrinsic to money demand. Extraordinary demand has the special feature of immediately appearing in times of distress, and totally disappearing in times of good trust. It has nothing to do with transactional or speculative needs, and also precautionary needs for money are connected with those 'reserves of legal tender for daily business' quoted above.

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<sup>108</sup> LS, p. 25.

It has never been considered in any study on money theory. No trace in orthodox money theory of an extraordinary demand, which can rise enormously, and become absolute.

This kind of money demand closely resembles Keynes' liquidity trap, only showing the opposite situation, it arises on the foreground of the panic environment, and for reasons opposite to those mentioned by Keynes. Not an excess of money but its scarcity instead, due to insufficient money supply by the central bank.

## 2- Endogenous instability

Panic results on the credit market are rising interest rates and credit demand, and falling credit supply. A simultaneous reduction in the willingness to hold deposits - effectively reducing credit supply and exacerbating the general credit supply shrink - and the rise in credit demand lead together to a tangible rise in the demand for cash. These are the constitutional phenomena of a panic.

Otherwise, the crucial feature is money demand instability, extraordinary demand is exactly this<sup>109</sup>: "Any sudden event which causes a great demand for actual cash may cause, and will tend to cause, a panic in a country where cash is much economised, and where debts payable on demand are large." A well-developed commercial banking system and the consequent economised cash and large deposits characterise every modern monetary economy.

Literature on financial crises does not deal with the structural instability of cash demand, nor does it link this phenomenon to the fact that it always arises when money supply shows no "elasticity", i.e. when it is quantitatively pre-determined. Orthodox theory cannot deal with the endogenous instability of money demand. Bagehot's extraordinary money demand and the causes disappear in the realms of the orthodox exogenous interpretation of financial crises, restricted to the "lender of last resort" function as an "una tantum" measure.

"Lombard Street" shows a different analytical quality in the study of finance, by identifying the instability of the demand for cash as an

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<sup>109</sup> LS, p.315.

endogenous factor in the system. This is a deep insight into the mass psychology governing financial markets, solved via the adoption of the adequate policy (exogenous). When the function of money (market) has been derived from the real urgency of the credit business, it can be shown that financial crises arise from a malformed money market, indeed because the inherent instability of the demand for cash remains unexplained and unsolved.

There is a major difference between a "lender of last resort" function granted as an exception to routine and the adoption of an open-ended money supply policy as a basic structural feature of a money market. The former may cure a panic but cannot prevent it, whereas the maintenance of an open-ended money supply becomes the necessary condition for stability in a monetary system and is thus best suited to prevent panic.

The emerging of panic represents a most basic monetary phenomenon. It consists in the impossibility for commercial banks to make the amount of cash being demanded available at short notice. And in a sudden reduction in the public's trust towards the banking system, which in turn leads deposit holders to ask their investment back in form of "legal tender".

The original cause of panic is the endogenous instability of the demand for cash in a credit-based economy – symbolising the instability of trust - being ignored by a central bank unwilling or unable to uphold the convertibility of cash in circulation<sup>110</sup>: "[..] the way to cause alarm is to refuse someone who has good security to offer. The news of this will spread in an instant through all the money market at a moment of terror; no one can exactly say who carries it, but in half an hour it will be carried on all sides, and will intensify the terror everywhere." A reduction in the willingness to maintain deposits, which accompanies a rise in the demand for cash, is tantamount to a reduced willingness by the public to grant credit; this is followed by higher commercial interest rates for lending and finally by a reduced willingness to lend by the banks themselves<sup>111</sup>: "[..] in a panic there is no new money to be had; everybody who has it clings to it, and will not part with it. Especially what has been advanced to merchants cannot easily be recovered; they are under

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<sup>110</sup> LS p.197.

<sup>111</sup> LS p.189.

immense liabilities, and they will not give back a penny which they imagine that even possibly they may need to discharge those liabilities. And bankers are in even greater terror." The destruction of trust, resulting from a panic, is a process that is extremely hard to reverse.

The only way of countering a panic is for the central bank to sustain the commercial banks in satisfying their desire for legal tender<sup>112</sup>: "Theory suggests, and experience proves, that in a panic the holders of the ultimate bank reserve (whether one bank or many) should lend to all that bring good securities quickly, freely, and readily. By that policy they allay a panic; by every other policy they intensify it."

These arguments support open money supply as the key element for a new theory approach.

### 3- Definition

Our analysis allows to revise the definition of money function: Money is that financial instrument meeting full acceptance as the final means of payment. The function of money as the "means of payment" represents extraordinary demand since it defines the uniqueness of money, i.e. money as the only financial instrument whose acceptance is general and absolute.

In order for its acceptance to be general, this asset has to show the features of a "legal tender", i.e. be issued under the State guaranty by the national central bank. This is the short-term condition, and it is so to say necessary more than sufficient.

The truest necessary and long-term condition to define money as a means of payment makes the money-quality itself. It is its ability to show the highest liquidity degree and to show a stability, which every other financial asset depends upon. Under Bagehot's approach the acceptance of money as a means of payment becomes complete, since the uniqueness of this function is assured in practice through stability policy.

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<sup>112</sup> LS, p.191.



In order to define money we use the condition of existence of the same money market existence, i.e. open money supply. Indeed, the long-term acceptance of a given currency is determined by its stability, and this is assured through open money supply.

With reference to the traditional money definition<sup>113</sup>, every short-term financial instrument can satisfy at least one of the traditionally mentioned money functions - means of exchange, or reserve or speculative function - without necessarily being "money". Economising money by using other instruments, as the cheque book, is the usual behaviour in a monetary economy, therefore also indirectly proving that the traditionally money functions are in fact inadequate to characterise money. No financial instrument other than the legal tender will be asked in extraordinary times, but no legal tender will be asked in exceptional conditions if it shows no stability.

'Money as the means of payment' is that unique financial instrument whose qualities of legality and stability can stand periods of distress. Its quality has been discovered through the fundamental worth for theory played by the panic phenomenon, and through the revealing and most general relevance of the extraordinary, unstable demand for money as the specific feature characterising a monetary economy.

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<sup>113</sup> S. Ch.2.