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***Bank liquidity risk,
from John Law (1705) to Walter Bagehot (1873)¹***

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Abstract :

By granting credit and issuing money, banks take a liquidity risk that is to say the risk of being unable to reimburse its notes in coins. Four different explanations of a bank liquidity crisis have been provided by different authors, since John Law and up to Walter Bagehot. First, according to Law (1703) and Steuart (1767), the distinction between money of account (the pound sterling) and money of payment (the guinea) may induce a bank run. Second, according to Cantillon (1730), Hume (1752), Ricardo (1810-1823) and the *Currency School* (1836-1844), the bank reserve becomes insufficient as a consequence of over issues. Third, according to Smith (1776) and the *Banking School* (1844-1848), discounting of fictitious bills, by decreasing the shareholders' funds, leads to banking illiquidity. Lastly, according to Thornton (1802) and Bagehot (1873), the liquidity crisis is a consequence of panics: a "flight" to money for Thornton, a "flight" to credit for Bagehot. The analysis of these four different explanations gives a new light on classical monetary controversies.

Codes JEL: B12, E42, G21.

Keywords: bank liquidity risk, bank exchange risk, bank credit risk, shareholders' funds, Money of account, coined money, real bills doctrine, currency market, money market, run.

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I. INTRODUCTION

This paper deals with the wide range of analysis of the bank liquidity risk among the classical economists. The bank liquidity risk is the risk for the bank to be unable to reimburse its notes and demand deposits in coins, that means to pay its debt. This can occur although the bank is solvent, that means its total assets exceed its total liabilities. The bank liquidity risk is due to the fact that the maturity of the bank's liabilities is lower than the maturity of the bank's assets. If banks are issuing notes by granting credits, the credits have to be reimbursed at term (for example 3 month) although bank notes are payable at demand. The classical economists agreed in identifying this risk, but disagreed about its significance and about the opportunity and the possibility to take it. Do banks that take this risk diminish or increase "the security of publick" (Smith, 1776: p. 329)³? The answer to this question divided the classical economists.

Whereas Richard Cantillon (1728-30, p. 173) and David Hume (1752, p. 35) exposed the quantity theory of money and argued against the usefulness of banks which take this risk, Adam Smith (1776) developed the real bills doctrine in order to advocate in favour of such banks. In the meantime, James Steuart (1767), discussing John Law's system (1716-1720), advocated for such banks but pointed out the importance of the stability of the definition of money of account and of coins for avoiding bank panics. The link between bank liquidity and foreign exchange market was expounded latter, during the Napoleon Wars, by Henry Thornton (1802) who advocated for banks taking liquidity risks. Furthermore, Thornton deepened the analysis of panics, contested Smith's monetary theory, introduced the central bank and its lender of last resort function to understand the management of bank liquidity risk. His analysis was criticized by David Ricardo (1809-23) who revived Hume's quantitativism and introduced the *Currency School* (1836-1844) who wanted to forbid the Bank of England to take liquidity risk. In arguing for that purpose, the *Currency School* distinguished bank notes from bank demand deposits and introduced the 1844 reform which divided the Bank into two separated departments - an Issuing Department on one side and a Banking Department on the other side - preventing the Bank from discounting bills by issuing bank notes. According to the *Banking School* (1844-1848), this reform would destabilise the money market. This School contested the analytical dichotomy between money and credit, the distinction between notes and demand deposits, and tried to make the synthesis between

³ French ed., Taïeb, vol. 1, p. 377.

Smith and Thornton. To end with classical Economics, Walter Bagehot (1848-1873) approved both Ricardian analysis and the 1844 reform, but, in order to stabilize the money market, argued for a lender of last resort function for the Banking Department of the Bank. A lender of last resort which doesn't take liquidity risks.

By pointing out the bank liquidity risk, this paper aims to shed new light on classical monetary controversies. The guideline here is neither the definitions of money and credit, nor the determinants of the value of money, nor its neutrality as in Rist (1938), Schumpeter (1954), Fetter (1965), Laidler (1972, 1981, 2003), O'Brien (1975, 1994), Arnon (1991), Skaggs (1991, 1995, 1999, 2003) and de Boyer (1985, 1986, 1987, 1992). These essential notions will be introduced, but are not central. I suggest modifying the angle of analysis. The guideline will be the different bank risks which intervene and take part in bank liquidity risks, and the tools for managing and avoiding bank liquidity crisis.

Our study starts with a notion widely absent in the history of monetary thought until now, the bank shareholders funds⁴. Steuart introduced their role in 1767⁵, and thereafter Smith, Thornton, the Banking School and Bagehot, but in different manners. The paper shows how the Ricardian tradition before Bagehot neglected them. By distinguishing several analysis of bank liquidity risk among the classical economics, It will give new light on the history of monetary economics.

Section 2 shows the link established by Steuart and Smith between money issuing and shareholders' funds. Section 3 presents Law's writing and experience, and Steuart's comments concerning the stability of both coined money and money of account. Section 4 underlines the link between currency markets, bank exchange risks and liquidity risks. There, Thorntonian tradition is distinguished from the Ricardian one. Section 5 concerns the Smithian tradition who point on fictitious bills discounting and overbanking, that is credit risk, to explain bank's illiquidity. Finally, section 6 deals with the classical economics of bank's runs and money market.

II BANK LIQUIDITY RISK AND SHAREHOLDERS' FUNDS

When James Steuart (1713-1780) published his *Inquiry into the Principles of Political Oeconomy* (1767), the 1720 crash of the Law System and of the South Sea bubble was a long time ago. People did not forget the traumatism, but the financial instability was over. In England, the short and long run interest rates on the public debt were stabilised at a low level.

⁴ See de Boyer (1998), Skaggs (2003).

⁵ See Bentemessek (2009).

Source: de Boyer (2006)

The Bank of England steered market interest rate. According to Steuart (1767) the Bank plays an active role in circulating the public short debt making it liquid. Smith will explain⁶:

“The bank of England, either by voluntarily discounting those bills at their current value, or by agreeing with government for certain considerations to circulate Exchequer bills, that is, to receive them at par, paying the interest which happens to be due upon them, keeps up their value and facilitates their circulation, and thereby frequently enables government to contract a very large debt of this kind. In France, where there is no bank, the state bills (billets d’état) have sometimes sold at sixty and seventy per cent. Discount.” (Smith, 1776 [1981], pp. 911-2).

In 1767, the Bank of England, the Bank of Scotland and the Royal Bank of Scotland were well-established and strong institutions. Furthermore, although the experience of competitive banking that emerged in Scotland in 1749⁷ alarmed David Hume (1752), it evolved smoothly. In this financial and historical context, James Steuart gives a very impressive account of the establishment and functioning of a bank:

“A number of men of property join together in a contract of banking, either ratified or not by public authority, according to circumstances. For this purpose, they form a stock which may consist indifferently of any species of property. This fund is engaged to all the creditors of the company, as a security for the notes they propose to issue. So soon as confidence is established with the public, they grant credits, or cash accmpts, upon good security; concerning which they make the proper regulations. In proportion to the notes issued in consequence of these

⁶ See de Boyer (2006).

⁷ See de Boyer (1986, 2003).

credits, they provide a sum of coin, such as they judge to be sufficient to answer such notes as shall return upon them for payment. Nothing but experience can enable them to determine the proportion between the coin to be kept in their coffers, and the paper in circulation. This proportion varies even according to circumstances, (...)." (Steuart, 1767 [1966], p. 479).

Steuart established the link between shareholders' funds and the capacity for a bank to create liquidity by granting credit and issuing bank notes. The shareholders provide the coins necessary for the convertibility of the notes and take the credit and liquidity risks. Adam Smith will also adopt this vision of banking in contrast with Cantillon's and Hume's approaches⁸. Both Steuart and Smith praised the creation of liquidity by banks. However their analyses of bank liquidity risk are not analogous.

III MISMANAGEMENT OF MONEY OF ACCOUNT AND COINED MONEY

The guineas (four gold coins - five, two, one and half a guinea) were first issued under the reign of Charles II (1660-1685) on the basis of one guinea for one pound, that is 20 shillings. These coins circulated together with old and debased gold and silver coins, resulting in a monetary disorder. In the 1790th, the price of the guinea fluctuated between 20 and 30 sh., that means above its official price. The Recoinage Act of 1696 began to resolve the problem⁹. Although John Locke argued for raising the guinea up to 21 1/2sh., its official price was not changed until 1717 when it was fixed at 21 sh. by Newton's reform. In this context, John Law (1705) describes a liquidity crisis that occurred in the Bank of Scotland. According to Law, a rumour of "raising the Money (...) occasioned a Demand (for coins) from the people in Edinburgh. In short time Notes would have come in so fast from the Country, that what Money could have been got, would not have answer the Demand" (Law, 1705: p. 52).

The expectation of a rise of the price (expressed in the money of account, the sterling) of coined monies (the gold coin "guinea", the silver coin 'crown', ...) induced a run to the bank, for coins. Indeed, a bank note is a debt labelled in the money of account for the bank but an asset for the holder. Holding coined money instead of bank notes protects in the case of a devaluation of the money of account, i.e. a rising (of the price) of coined monies. Conversely, in the case of a re-evaluation of the money of account, i.e. a lowering (of the price) of coined monies, holding notes is preferable. Therefore, according to Law, to stop the Bank of

⁸ I didn't perceive the role of the shareholders' funds in Steuart's banking analysis before Nesrine Bentemessek's PhD research (2008). See also M. Piteau (2002, p. 265) and G. Heinsohn & O. Steiger (2007, p. 65-70)

⁹ Andréades (1904, pp. 124-42).

Scotland liquidity crisis, it would have been enough to induce a run for bank notes by announcing a coming lowering of coined money:

“If the Privy Council had lower’d the Money, the *English* Crown to 5 *sh.* And the other Money in proportion, to take place 2 pence *p.* Crown in 3 days, and the other 3 pence in a Month; the occasion of the Demand being remov’d, in all appearance Money would have been return’d to the Bank” (Law 1705, p. 52).

Thereafter, once the “Credit of the Bank” restored:

“(…) the Money might have been cry’d up, if that had been necessary, the Crown to 5 *sh.* And 5 *pence*, and the other money in proportion as it was before.” (Law 1705, p. 54).

Law’s cynicism addressed by Rist (1938, p. 31)¹⁰ will be put in practice 14 years later. As soon as the notes are debts labelled in the money of account, as would be the case with the Banque Royale (1719-1720)¹¹, Law’s management of bank liquidity risk leads to the necessary demonetization of precious metals.

Steuart emphasizes Law’s mismanagement of money. The fluctuating price of coined money is the major source of bank liquidity risk according to Steuart. Book III of *Steuart Principles* is mainly devoted to demonstrate that it is in the interest of the Princes “to preserve their credit, and to allow the coin, by which credit is reckoned, to remain in stable condition”¹². Here Steuart rejoins Locke (1792) as well as Jean Bodin (1593)¹³. Steuart understood, as did his contemporaries, that the fixity, in the short run together with the long run, of the price of account of the specie is a *sine qua non* condition for the viability of banks that take liquidity risks. The monetary history of the 18th British Century after Newton reform contrasts with the French one. From David Hume to John Stuart Mill, the classical economists agreed that the fixed price of precious metal is part of the good management of money.

IV CURRENCY MARKET AND BANK EXCHANGE RISK

The sterling price of gold is fixed, but what about its value? And what about the value of a bank sterling debt on the currency market, its exchange rate? This debt is payable by a fixed

¹⁰ The English translation (p. 53) of this paragraph is at once incomplete and truncated.

¹¹ The Banque Générale’s notes were labelled in « *ecu* », a coined money.

¹² Steuart (1767, vol. 2, p. 240-2).

¹³ See Jérôme Blanc (2007).

quantity of gold but its exchange rate fluctuates as a consequence of supply and demand on the currency market. Does this mean that the value of gold is fluctuating? Ricardo's answer is yes, Malthus's answer is no. Ricardo (1810-1) refers to Hume (1752), Malthus (1811) refers to Thornton (1802). Furthermore, gold coined money, the guinea, has a fixed price and is the legal mean of payment. Bank liquidity means convertibility of its notes and demand deposits in coined money; it means that banks have to pay their debt at demand. Does the demand for reimbursement of bank debt in guineas mean that the quantity of bank debt is in excess? The authors who respond "yes" develop the quantity theory, those who respond "no" contest it.

In fact, banks face an exchange rate risk which takes the form of a liquidity risk. If, on the currency market, the supply of English bank debt exceeds the demand, the exchange rate falls. If the fall of the exchange rate reaches the point at which it is profitable for the gold dealers to demand the English bank debts in order to demand their reimbursement in gold, then to export gold, banks can become illiquid. When the exchange rates are below this point, the fixed price of gold presents an opportunity of arbitrage which induces the draining of the bank's gold reserve. This level of exchange rate which causes an external drain of gold is called "gold export point". Steuart¹⁴ has seen this Gold Point Mechanism (GPM) which may cause a bank's illiquidity and which will be at the core of the bullionist controversy¹⁵. Indeed classical economists disagreed about this mechanism.

First, to explain the international gold flows, David Hume (1752) did not describe the GPM but another mechanism, the Price Specie Flow Mechanism (PSFM). This last is more known than the first, and more rudimentary. In the Humean PSFM, there is no currency market and no exchange rate; there are only goods and specie. The specie flows as a consequence of the difference between money prices of goods among different countries. Then, gold flows are a response to a unique signal, that is the value of gold expressed in goods. When gold exits England, it necessary means that gold is cheaper in Great Britain than outside: by selling gold, merchant buys more goods abroad than in England. The flow of gold furnishes a double adjustment process: at the same time a price and quantitative adjustment towards an international equilibrium, whose definition is inherited from Locke. An adjustment we can also find in Cantillon and which rely on the quantity theory of money. Gold flows outside because the quantity of money is excessive. In this perspective, what about banks who create liquidity?

¹⁴ Steuart (1767, vol 3, p. 189-198 & p. 345).

¹⁵ de Boyer (2007).

To answer, it is useful to briefly recall the historical context. It is well known that *Cantillon's Éssai sur la nature du commerce en general* is written in the wake of speculation of the year 1720 and explicitly seeks, among other aims¹⁶, to denounce the dangers of issuing bank notes. It is less known that the 1752 edition of Hume's *Essays* is published at a specific episode in Scottish banking history. The competition at the end of the 1750th between the two joint stock banks established in Edinburgh, the Bank of Scotland in 1695 on one side and the Royal Bank of Scotland in 1727 on the other side, led them to foster the birth of private country banks. In Glasgow, the Bank of Scotland favored the Ship Bank in 1749, and the Royal Bank of Scotland favored the Arms Bank in 1750. Initially, the two private banks worked with the bank notes issued by the two joint stock banks that were available through "cash account". But from 1751, they freed themselves from the influence of the banks of Edinburgh and issued their own bank notes. They were imitated by other private banks that were established in several cities so that it was the point of departure of a dynamical and uncontrolled competitive development of banks in Scotland¹⁷ which undoubtedly scared Hume¹⁸. These banks don't have the cash necessary to pay all the notes they issue.

Since there is no description of bank credit or issuing operations in Hume's *Essays*, it is unclear how Hume understood them. Cantillon is explicit on this subject, with his description of the multiplier of deposits¹⁹. The deposits furnish the cash necessary for granting credit and thus create liquidity. There are no shareholders' funds so that the risks are taken by the holders of bank notes and deposits. The model of bank is neither the Bank of England whose issues were limited to an amount equal to its capital²⁰, nor the Ayr Bank whose proprietor, in 1772, borrowed in London the cash necessary to pay its notes. Then, the model of bank Cantillon and Hume have in mind has two main characteristics: first deposits of cash make credit, that means lending cash; second it is very vulnerable, in fact dangerous.

Another question that arises is whether such bank is useful. Is it useful to take so dangerous risks? Hume's answer is no:

“ This has made me entertain a doubt concerning the benefit of *banks* and *paper-credit*, which are so generally esteemed advantageous to every nation.” Hume (1752, p. 35).

¹⁶ See Murphy (1986 & 1997).

¹⁷ Competitive banking doesn't mean « free banking ». The Bank of England was at work.

¹⁸ Hume (1752, pp. 71-2).

¹⁹ See Cantillon (1728-1730, p 162).

²⁰ de Boyer (2006).

The PSFM described above furnishes the argument: without banks, the quantity of money necessary to make the transactions will flow from outside. Then:

“But there still prevails, even in nations well acquainted with commerce, a strong jealousy with regard to the balance of trade, and a fear, that all their gold and silver may be leaving them. This seems to me, almost in every case, a groundless apprehension; and I should as soon dread, that all our springs and rivers should be exhausted, as that money should abandon a kingdom where there are people and industry.” Hume (1752, p. 61).

The question arise to know if Cantillon and Hume write against banks that create liquidity because they are quantity theorists or if they develop the quantity theory because they are afraid by such banks. In any event, their theory leads to a distinction of money from credit. According to Rist (1938, p. 36), whose *History of Monetary and Credit Theory* is imbued by this idea, money is the means of circulation of goods, although credit is the means of circulation of money. According to Schumpeter (1954), credit derives from money.

“ Actually, the bank-note too is only a means of making real money circulate, real money alone finally discharging indebtness and being an object of desire for its own sake.

For the note is never more than a certificate of deposit; issued originally against coin brought in by the client, it is still a certificate when the coin given by the banker in exchange for a bill is at very same moment re-deposited by the borrower. In the credit operation, the banker receives a bill of exchange and pays its price in coin, *thus making money circulate* ” Rist (1938, p. 14).²¹

Hume, Ricardo and Rist belong to the monetary theory of credit approach, to which Schumpeter (1954, p. 717) opposes the “possibly preferable” credit theory of money approach. This last is the one which advocates for banks taking liquidity risks.

Ricardo’s rejection of the GPM and adherence to the PSFM addresses another economic and political context. His aim was to contradict Thornton’s (1802) concerning the high price of bullion as a consequence of the suspension of payment in 1797. Indeed, according to Thornton, the suspension of payment means that the Bank of England ceases to stabilize the price of gold in the London gold market. Therefore, when the exchange rate falls below the gold export point, the gold dealers demand the English bank debts in order to buy gold in the

²¹ See p. 37 of the English edition (1940). Two pages later, Rist adds “But in all this there is no increase in *money*, there is merely a more rapid circulation of *existing money*” (Ed. Fr., p. 16 ; Ed. Engl., p. 39).

London market and the price of gold increases. The GPM explains the high price of bullion as the consequence of the fall of the exchange rate. Ricardo rejected this mechanism:

“Here, and in many other parts of the same article [by Thornton], the fall in the exchange (...) is stated to be the *cause* of the excess of the market above the mint price of gold, but to me it appears to be the *effect* of such excess.” Ricardo (1810, 3rd ed.; 1951-62, III).

One essential feature of the GPM is that the fall of the exchange rate below the gold export point may be the consequence of real and financial events that have nothing to do with a falling value of gold and excess issuing of bank money: as it happens decreasing exports and increasing financial transfers abroad because of War. Thornton developed the GPM in order to argue in favour of government policy, Ricardo went astray in a rejection of the GPM in order to criticize this policy. Ricardo’s “Plan for a National Bank” (1824) and the *Currency Principle* are heritages of the 1810-11 controversy. In my opinion, these are utopian plans for central bank that don’t take liquidity risks.

V CREDIT RISK AND SHAREHOLDERS’ FUNDS

In its criticism of the *Currency School*, the *Banking School* used both Smith’s banking analysis and Thornton’s GPM. It also referred to Thornton’s lender of last resort theory, which I will discuss in the last section where situations of panic are examined. But I have to distinguish the various components of the *Banking School* theory. First, what about its analysis of bank illiquidity except of panic situations? There are two complementary explanations.

First, the *Banking School*’s authors go back to Smith’s real bills doctrine, which states that if a bank issues money by discounting “real bills”, money flows back to the bank whenever the loan is reimbursed. But if it issues money by discounting “fictitious bills”, the loan is never reimbursed and the only means for the money to flow back to the bank is in exchange for specie. While the cash reserve and the shareholders’ funds are consolidated in the first scenario, they are encroached upon in the second one²². According to Tooke (1844) and Fullarton (1845), money is advanced in the first scenario, while it is spent in the second one. In the second case, bank becomes illiquid as a result of credit loss²³. There, the liquidity risk is related to credit risk. The authors of the Banking School use the term “Overbanking” to

²² See de Boyer (1996).

²³ The accounting rule is to constitute a provision which is charged to the net profit, hence to the shareholders’ funds.

designate credit excess which leads simultaneously to insolvability and illiquidity. Credit excess doesn't mean excess in quantity, but default of quality. This analysis which establishes the link between liquidity, shareholders' funds and quality of credit is inherited not only from Smith, but Steuart as well²⁴. According to Steuart, confidence in the solvability of banks is the *sine qua non* condition for avoiding bank runs²⁵. In 1858, Torrens would rejoin this aspect of *Banking School* Analysis²⁶.

Now, let us return to the "real bills" case. According to Fullarton, we have a "law of reflux" which contradicts the quantity theory:

"Bank-notes never, therefore, can clog the market by their redundance, nor afford a motive to any one to pay them away at a reduced value in order to get rid of them. The banker has only to take care that they are lent on sufficient security, and the reflux and the issue will, in the long run, always balance each other." Fullarton (1845, p. 64).

In the short run, there are gaps between flow and reflux which are not connected with changes in the price level but with liquidity needs of traders. Then the necessity for the level of the Bank cash reserve to fluctuate, between five and fifteen millions says Tooke. With the exception of overbanking or panics, the banking system has not only to take liquidity risks, but also to accept that this risk is currently varying.

Tooke (1844 & 1848) enriches the analysis by exploring Smith's distinction between "capital" and "currency"²⁷. "Capital" refers to the circulation of bank money between dealers, while "currency" refers to the circulation of bank money between dealers and consumers. The same bank notes and demand deposits circulate as "credit" in the first case, and as "currency" in the second. The distinction between "credit" and "currency" is not a material one, deposit or note, but an analytical one²⁸. Then the refusal of the Bank Charter Act of 1844 which rely on the *Currency School* distinction between bank deposits, associated with credit on one side, and bank notes, associated with money on the other side:

"It appears, then, that there is neither authority nor reasoning in favour of the definition which invests Bank notes with the properties of money, or paper currency, *to the exclusion of all other*

²⁴ Steuart (1767), Book IV, Part II.

²⁵ Diatkine & Rosier (1998, p. 264). See also Steuart (1767), Book IV, Part II, chap. XVII

²⁶ See de Boyer & Diatkine (2008).

²⁷ Contrary to the tradition introduced by Gregory (1928), I think that Tooke's distinction between « capital » and « currency » is significant.

²⁸ de Boyer (1985, p. 564).

forms of paper credit. So that the first link of the argument of Sir Robert Peel, or, rather, the groundwork of it; is utterly fails.” Tooke (1848, p. 163).

The spirit of the 1844 reform was to prohibit banks from taking any liquidity risk. For the *Banking School*, it would favour and amplify bank-liquidity crisis. For the *Currency School*, this reform allowed to eliminate bank-liquidity crises and to adjust the quantity of currency through the PSFM.

Adherence to the Thornton GPM and rejection of the Ricardian PSFM is a second essential feature of the Banking School²⁹. On the bullionist controversy, Tooke criticises Ricardo for disputing the GPM³⁰. Moreover, Tooke’s distinction between capital and currency enriches the anti-Ricardian approach to the balance of payment. Indeed, for Tooke, time lags between flow and reflux are characteristic of the capital circulation between dealers from different countries. Importations of corn, wine or cotton do not occur simultaneously with the exportations of woollen cloth. Hence, supplies and demands on the currency market in order to conduct this trade are not synchronized. An excess supply (or excess demand) of pound sterling on the currency market concerns the circulation of capital, not currency. Otherwise, the fall of the exchange rate of the pound sterling can be slowed in the case of a rising interest rate in Great Britain, which would induce entries of capital. Then, the GPM may or may not be at work as a consequence of supplies and demands on the currency market related to the financing of trade on one hand, and the financial flows related to the comparative levels of interest rates on the other. Tooke’s opinion is that, instead of raising its discount rate, the Bank of England must passively accept that the exchange rate fluctuates between the gold points, and eventually reaches the gold export point, so long as the cash reserve stands between five and fifteen millions. In the instance where the cash reserve falls to the lowest level, the Bank must raise the interest rate in order to protect its liquidity. This last element is taken again by Goshen (1861).

In summary, according to the *Banking School*, no liquidity crisis will occur as long as the banking system is solvent and the Bank of England accepts that its cash reserve fluctuates between five and fifteen million of Sterling without modifying its lending and issuing policy but is raising its interest rate as soon as the cash reserve falls to the lowest level. On the contrary, overbanking leads simultaneously to insolvency and illiquidity. Furthermore

²⁹ I disagree with the interpretation of the *Banking School* analysis of the balance of payments introduced by Laidler (1988).

³⁰ Tooke, IV, pp. 101-105.

mismanagement of the Bank of England under the spirit of the *Currency Principle*, together with the 1844 Charter Act, will lead to liquidity crisis. Indeed the third feature of the *Banking School* is adherence to Thornton's Lender of Last Resort theory.

VI RUNS AND MONEY MARKET

In this last section, I will evaluate the bank's illiquidity crisis which does not deal with the asset side of bank's balance sheet. It neither results from the anticipation of a "rising" of money coins as in Law or Steuart, nor a loss on credit assets as in Smith or the *Banking School*, nor a rumour of bank's insolvency as in Steuart, nor the shrinkage of the reserve as a consequence of over issues as in Hume, Ricardo or the *Currency School*, and even Thornton, or a fall of exchange rate as in Thornton, Malthus and the *Banking School*. Here, I am interested in the bank's liquidity crises which deal with the liability side of bank's balance sheet. I underline runs and the fear of a shortage of lending on the money market. Henry Thornton (1802) and Walter Bagehot (1873) introduce two distinct analyses despite similarities³¹.

For Thornton, who learnt from the 1793 banking crisis, a run is similar to a flight to quality which occurs inside the "circulating medium". It results from the public sentiment of business distrust. The solution lies in the capacity of the Bank of England to restore confidence by issuing its debt. One must not forget that the Bank of England's note was not legal tender and that the bailout involved the Treasury. Indeed, the crisis broke in February 1793 with the Bank's refusal to discount bills because its reserve was at a very low level; a refusal from the bank to engage itself in increasing liquidity risk which seemed to be in conformity with Smith's recommendations, according to which the diminution of the reserve is the signal of fictitious bills discounting, that means issuing bank money which exceed the needs of "capital circulation" so that the channels of circulation overflow (without a price's mechanism)³². The 1793 crisis was stopped by issuing 5 million sterling Exchequer bills which were lent to the merchants by the Treasury and that the bank had to circulate. This was a policy that ran counter to Smith's recommendations. This was the channel by which the Lender of Last Resort bank notes were issued. Though the Bank of England was not the lender, because it had been obliged to circulate the Exchequer bills since 1707, it was

³¹ Thornton's and Bagehot's Lender of Last Resort theories were distinguished for the first time by Laidler (2003) and de Boyer & Solis (2003), in 2002, two centuries after the first edition of the « Paper Crédit ».

³² See Smith (1776), II, ii, p. 293 ; Ed. Taieb, vol1, p. 333. Also de Boyer (1986 & 1998).

conducted to support the 1793 Treasury's lending. Note that the Treasury took the credit risk, and the Bank took the liquidity risk.

Explaining this crisis and its end required discussion of Smith's monetary analysis. Thornton writes his book as a criticism of Adam Smith³³.

Like Smith, Thornton links bank money, credit, cash reserve and shareholders' funds. But he contests the real bills doctrine, rehabilitates the bills of exchange, introduces the velocity of circulation and interest rate to explain the evolution of paper credit. Concerning the real bills doctrine, Thornton does not dispute the fact that the reimbursement of credit must be guaranteed, but he explains that it is the solvency of the debtor which matters. Whatever the nature of the transaction financed, if bank money issued through credit is backed by a "*large and known capital*" of the debtor, the bank will be safe (Thornton, 1802: pp. 86-7). Bank debt may be as safe by discounting fictitious bills as by discounting real bills. Furthermore, Thornton points on the hierarchy existing between the different debtors, then between the different debts that are issued in the course of commercial and financial activities. According to him, merchants use a large and diversified set of means of exchange: bills of exchange of different qualities and maturities, commercial drafts, demand deposits and notes from different country banks and from the Bank of England, and specie. As a consequence of level of interest rate and the state of confidence, the different components of this "Circulating Medium" have velocities of circulation that differ from each other and vary in time. Above all, Thornton stresses that the Bank of England, and its note, stand at the top of the hierarchical financial structure:

"The Bank has a capital of near twelve millions, to which it has added near four millions of undivided profits or savings; all this capital and savings must be lost before the creditors can sustain any loss." Thornton, (1802, p. 105).

In the case of a general sentiment of solvency, there is a broad substitutability between the different components, with low velocities of circulation at the bottom of the hierarchy and high at the top, the interest rates are low. In the case of a general sentiment of insolvency, it is the reverse, a flight to the Bank of England note occurs and all the banks are involved in a liquidity crisis. If the Bank of England note is not available, the crisis deepens. Holders of notes and demand deposits run to obtain their payment producing a shrinking of the bank's gold and silver reserves, including for the Bank of England. The solution, or in other words

³³ See Murphy (2003).

the restoration of confidence, lies in the Bank of England issuing notes through granting credit on money market. With the following apparent paradox that “though the failures had originated in an extraordinary demand for guineas, it was not any supply of gold which effected the cure”(Thornton, 1802: p. 98). Here, the Lender of Last Resort takes liquidity risks and lends his own debt. The Banking School inherited this conception of money³⁴.

Bagehot's (1873) analysis is quite different. First of all, he is writing in another historical context. His book, *Lombard Street, a description of the money market*, was published six years after the third suspension of the 1844 Act. According to the *Currency School's* interpretation of Ricardian monetary economics, the 1844 act divided the Bank of England in two departments: an Issue Department which is a “currency board” that does not take illiquidity risk when it issues bank notes above a minimum level (100% reserve) on one side, and a Banking Department which cannot grant credit by issuing bank notes but demand deposits. Second, Bagehot does not place himself in the Thornton and *Banking School* tradition, but in the Ricardian one. He was a supporter of the 1844 reform. For Bagehot, this reform definitively solved the monetary problem by correctly regulating the quantity of money. But it failed in regulating credit³⁵. The *Currency School's* distinction (dichotomy) between money and credit is at the core of Bagehot's analysis. According to Bagehot, the default of the reform, which induced necessary suspensions in 1847, 1857 and 1866, lies in the misinterpretation by the directors of the Bank of England of the role of the Banking Department of the Bank³⁶. They incurred from the reform that the Banking Department must be managed like other banks - minimizing the shareholders' funds and maximising the rate of profit – forgetting that the Bank had acquired the historical responsibility of guarantying the liquidity of the money market.

Indeed, according to Bagehot, thanks to the Bank of England lending policy before 1844, the banks grew accustomed to working with a very low level of capital³⁷ and “keep a main part of their reserve on deposit with bill brokers, or in good and convertible interest-bearing securities” (Bagehot, 1873: p. 241). A bill broker is himself an intermediary who pays interest on demand deposit, so that he “cannot hold as much as an ordinary banker, or nearly as much,

³⁴ Laidler (1972) points on the substitutability between different sorts of paper credit in Tooke's analysis.

³⁵ Torrens (1858) also pointed, but in a different way, that the 1844 reform did not solve the problems arising on credit. See J. de Boyer & S. Diatkine (2008).

³⁶ « ... the Banking Department of the Bank of England (...) has no great *prestige*. It was only created in 1844, and it failed three times since.” Bagehot (1873), p. 186.

³⁷ “But the main source of the profitableness of established banking is the smallness of the requisite capital.” Bagehot (1873, p. 232).

of such sums in cash, because the loss of interest would ruin him” (Bagehot, 1873: p. 275). In case of liquidity difficulty, including panics, banks and bill brokers are accustomed to receiving credit from the Bank of England. The fear that the Banking Department would cease with this policy will deepen panic and liquidity crisis:

“ (...) Mr. Hankey leaves us in doubt altogether as to what will be the policy of the Bank of England in the next panic, and as to what amount of aid the public may then expect from it. His words are too vague; (...) Theory suggests, and experience proves, that in a panic the holders of the ultimate reserve (whether one bank or many) should lend to all that bring good securities quickly, freely, and readily. By that policy they avert a panic; by every other policy they intensify it.” Bagehot (1873, p. 165).

What counts for Bagehot is the fact that the Banking Department, by lending its reserve (gold and Issuing Department notes), furnishes credit to bill brokers, in place of the demand deposits that are withdrawn by bankers. Recall that the Bank of England notes are issued by the Issuing Department and are on the asset side of the balance sheet of the Banking Department. Here, contrary to Thornton, the Lender of last Resort does not lend its debt, but assets, guineas and bank notes that are legal tender. He responds to a demand for credit, not for money³⁸. In the last chapter of his book, Bagehot advocates an increase of the capital of the Banking Department in order to increase its reserve, thereby furnishing it with the tools for lending of last resort. The Lender of Last Resort does not take liquidity risk. This vision is in accordance with the *Currency Principle*.

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³⁸ In the sense of Thornton, i.e. highest quality debt.

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