

Ch. 1– Impracticable ceilings

We start our work by observing the practice of central banking, as Bagehot does. Notwithstanding the assertions they may offer in their statements, no ceiling was actually ever imposed on money supply by successful central banks. 19th century Great Britain, when the first ceiling imposition in economic history, the "Peel Act", should have obliged the Bank of England to limit its money supply by law, represents no exception, since the ceiling was abolished at every sign of panic, thus circumventing the law.

This is proved by historical data and sources, but we look for a stronger test. We can immediately get rid of the fixed money supply hypothesis through our study of the U.S. Federal Reserve⁵ policy in the 1920's, where the ceiling hidden in the statute reveals a relevant cause explaining the 1929's crash and the subsequent enduring state of economic collapse.

In detail, the *first case study* – which started originally this work on Bagehot - analyses the FED's behaviour between 1924 and 1931, the years around the "big crash". It shows the strategy (contained in the statute of the time) based on notes' coverage through gold. By also signalling the dependence from gold, it witnesses directly the inability of the FED to open its vaults both to discounting and to open market operations, when the credit system desperately needed its support. Liquidity preference mounted in that period⁶ because of the curb on money supply.

The *second case study* analyses the policy of the Bank of England in the Gold standard era. 1844, the "Peel Act" divided the central bank into an Issue and a Banking Department and by law charged the Bank with goals and strategies belonging to the "currency school". In theory, and in line with orthodox theory, the Issue Department was charged with the role of directing the Bank's policy, establishing the volume of the issue. In practice, another mechanism for stabilising the value of money was effectively applied: by breaking the legal framework and official goals of the Act, it resulted in subordinating the Issue to the Banking Department. The convertibility

⁵ Here also called FED.

⁶ ref. Keynes' "General Theory".

of the British Pound - into other currencies and into gold - was achieved at the time through the application of an interest rate policy led by the Banking Department and, conform with Bagehot, the dynamics of the demand for money guided monetary policy. Money supply was left open, since the law restricting its issue was temporarily suspended in every periods of crisis.

This chapter aims to argue that successful central banking does not work on the orthodox principles, and can be better explained with the contribution by Bagehot. The next examples relate to different paradoxes between practice and theory, and try to understand the true nature of successful central banking.

Bagehot's "Lombard Street" refers to the "open discount window", which is still seen as the very epitome of bagehotian policy, as the tool able to hold the notes issue open. The *third case study* focuses on the Deutsche Bundesbank (BuBa) policy between 1970 and 1995, the golden years of the Deutsche Mark before Euro. It discusses whether Bagehot's policy may be implemented by other tools currently available to the central bank (i.e. open market and swap policies) in its relationship with the credit market. Contrary to current orthodox opinion, open market operations are not the embodiment of a policy of fixed money supply. In substance, any policy making an open credit line available to commercial banks can suit open supply, both in form of discount and of open market business. It is fully consistent for a central bank to adapt its strategic choices about its instruments to the changing structures of the credit markets, so that an open credit line can be made available through precisely those papers that are most widely traded in the country's credit markets.

A *fourth case study* examines the current money market policy of the Bank of England, which clearly shows an uncapped money supply policy. Thus, it is even more inconsistent for it to proclaim price stability as its primary goal, conforming to mainstream monetary theory. By examining the confusion in the interpretation by the same Bank of its own practice, we receive another signal of the urgent need for an alternative paradigm as a reference for both monetary theory and practice.

The *fifth case study* talks about the ECB. The ECB statute, by sharing the money function between the new institution and its national partners (the ex national central banks), separates the money issue from the LOLR function, and entrusts LOLR to the banking supervision function. This way it otherwise separates money from credit, perfectly in line with the orthodox theory of money, and reduces money to the "coin" concept of pre-monetary or ancient monetary systems, as we discuss in Chapter 2.

Case study I: The Federal Reserve's policy 1924-1933

This study directly deals with the certainty of disruption occurring when the money market implements a money supply ceiling of whichever form.

We present a study discussing the FED monetary policy from 1924 to 1933; our hypothesis is that it was based on reserve ratio management, a defensive strategy aiming to stabilise the effects of gold stock fluctuation on the domestic economy. Recognising the strict margin of manoeuvre the Federal Reserve Act (1914-1932) gave to the FED, we describe the monetary strategy it thereby developed to control the effects of the huge gold inflow, based on management of a) currency composition and b) the extent of discounting by member banks. It is our hypothesis that this strategy worked well until 1928, but revealed its fragility afterwards, when the direction of the gold flow reversed.

1928 marked a major change in FED policy, as it saw the reconstitution of gold standard, but at the same time the beginning of a worldwide re-composition of the reserve portfolios. Losing gold reserves became a real prospect for the USA since the establishment of (new) fixed parities increased international gold mobility. It is our opinion that both changes occurring in 1928 increased the U.S. difficulty in compensating gold outflows without destabilising the economy and that the FED's strong attachment to gold justified the accumulation of gold reserves and, more severely, contributed to monetary contraction.

We aim at invalidating the currency-school as a guide to money market management, since it is unable to deal with the real need

for money in the market and because it introduces extremely dangerous rigidities in the market. If our hypothesis in this example is true, as econometrics confirms, we are confronted with an hard argument against any money supply restraint, and moreover with a new contribution to the explanation of the 1929 crash and subsequent recession.

This example validates Bagehot's approach, since it effectively shows the disruption caused by a false money market policy: the 1929 crash represents the most evident example of the extent and duration of a financial crisis.

The strong attachment to gold, shown by the FED and shared by the whole gold-standard community, can be explained through the psychology of the time. It contributes to let us understand also Bagehot for his allegiance to gold reserves, which we believe to represent his main deficiency, as we will discuss in Ch.2.

1 - Main interpretations of FED's policy 1924 - 1933

According to Friedman and Schwartz, the FED's aim was controlling cyclical fluctuations and combating speculative activity, as announced in the 10th Annual Report⁷ of the Federal Reserve Board, from 1923; however, it failed to reach these goals after the death of Benjamin Strong in 1928. According to this interpretation, the Board used open market operations to control the extension of the monetary base through bank reserves.

Wicker's analysis⁸ documents the importance of the FED's international aims and its attempt to rebuild the gold standard after 1914. Wicker sees open market operations and interest rate management

⁷ In the 10th Annual Report, the Board announced with regret its intention to dismiss the reserve ratio as a guide to credit policy, since the large gold flow entering the country was not considered a structural phenomenon and was therefore to be disregarded in the formulation of monetary policy. The FED had to find a new guide to credit policy, as no one indicator was considered capable of replacing the reserve ratio and a "multiplicity" of indexes were therefore thought to be needed, including a warehouse-stock index, several price indexes and bank-deposit turnovers. There is no doubt that various credit and business-cycle conditions indexes were employed by the FED after 1923, as testified by the work of Snyder. We read documented evidence of the fact that the reserve ratio continued to guide credit policy as the reform of the gold standard proceeded.

⁸ Wicker, 1967.

as controlling mechanisms for gold flow distribution, the business cycle and speculation.

Brunner and Meltzer⁹ criticise the above mentioned interpretations on the basis of the "Riefler-Burgess-doctrine", by describing the effects of open market operations on the reserve position of member banks. In the thirties, Riefler and Burgess¹⁰ gave a detailed description of how the interaction between open market operations and discounts neutralised the FED's intervention on the amount of bank reserves. As the FED purchased securities in the open market, it enabled the banking system - the member banks being reluctant to remain indebted to the central bank for prolonged periods - to return the borrowed liquidity by reacquiring the previously discounted papers.

Thus, every FED purchase of securities caused a decrease in the amount of discounted paper it held. Similarly, a sale of securities by the FED increased the discount rate effectiveness: it provoked a reduction in bank reserves, which the banks (temporarily) offset by an increase in discounting. Brunner and Meltzer's hypothesis is that the control of interest rates and of the extent of bank discounting were the FED's main objectives, and that the FED's disregard of the quantity of money was responsible for the poor performance of monetary policy during the Great Depression.

2 - The Empirical Tests of Toma and Wheelock

Toma and Wheelock recently devoted their econometric analyses to this period of USA monetary history. Their particular importance lays in the distinction of the effects of open market operations with government securities from those with banker's acceptances: only the former induced the banks to react as described by Riefler.

Toma's results confirm Riefler's "reserve position" hypothesis (also adopted by Brunner and Meltzer to criticise Friedman and Schwartz), as well as Wicker's hypothesis that open market operations had followed gold flows procyclically.

⁹ Brunner and Meltzer, 1968.

¹⁰ Burgess, 1928; Riefler, 1930.

Wheelock's study provides further evidence for the consistency of the "reserve position" hypothesis. He also verifies the existence of a negative correlation between open market operations in government securities and business cycle indexes. A simulation of the FED's policy during the Great Depression based on the equation used to analyse its actions from 1924-29 reveals that the stock of government securities in possession of the FED actually contracted in the period 1930-1931. Like Brunner and Meltzer, Wheelock concludes that the control of interest rates and bank discounting instead of the quantity of money, led the FED to overlook the deepness of the economic depression.

3 - Federal Reserve credit and gold flow

3a - Open market operations

We define as FED's open market operations in the twenties and early thirties those regarding government securities. They differ from those operating on banker's acceptances: the former could not have been foreseen by bankers, while sales and purchases of bankers acceptances followed a regular pattern, being mainly aimed at correcting the seasonal fluctuation of member bank reserves. Open market operations on government securities were positively correlated with the net gold flow into the USA and negatively correlated with a number of business cycle indexes, e.g. the All Commodities Price Index and the Industrial Activity Index. Since Toma and Wheelock found a positive correlation between government securities and gold flow, the negative correlation shown by previous tests must depend in principle on the reaction of the banking system to open market operations as described by Riefler and Burgess.

Given that the "Riefler-Burgess doctrine" has not been empirically refuted, the question whether the FED knew the effect of its operations in the open market remains. Declarations by the Board of the Federal Reserve¹¹ show that the FED was conscious of the effects of its action in the open market, and that it did not benignly ignore the reaction of the banking system but explicitly requested it: "It is a generally recognised principle that reserve bank credit should not

¹¹ FED Annual Report, 1928, p.8.

be used for profit, and that continuous indebtedness to the reserve banks, except under unusual circumstances, is an abuse of reserve bank facilities. In cases where individual banks have been guilty of such abuse, federal reserve authorities have taken up the matter with officers of the offending banks and have made clear to them that their reserve position should be adjusted by liquidating a part of their loan or investment account rather than through borrowing. Abuses of the privileges of the Federal Reserve System, however, have not been general among the member banks. The tradition against traditional borrowing is well established, and it is the policy of the Federal Reserve Banks to maintain it."

Why did the FED actually accept the banks' unwillingness to remain in debt with the central bank? Or which were its reasons to control the banks' strict adherence to this principle, apart from that of controlling the soundness of the banks' activity? The mechanism of controlling discounts through open market operations was probably used as an indirect means of managing the propensity of the banking system to supply the economy with credit, since the banks' credit supply increased when indebtedness to the central bank was reduced and vice versa, and subsequently to control the interest rate.

A good reason for the FED to encourage the banks to reacquire their discounted papers is to be found in the statutory rules for the issue of Federal Reserve notes. In the next session it will be argued that the FED succeeded in managing the extent of the banks' discounting through changing currency composition in order to control the effect of gold inflows, and that this strategy reflected the principles of the Federal Reserve Act. This is a fundamental step to recognise the curbs and their effects on liquidity.

3b - The Federal Reserve Act

In accordance with the real-bills doctrine, the coverage of banknotes issued by the FED had to respect qualitative as well as quantitative standards. According to the first version of the Federal Reserve Act (1913), every note was to be 100% covered by eligible paper and 40% by gold. Eligibility was given exclusively to discounted paper representing credit to productive activity, whereas papers representing credit to speculation were excluded by statute.

The 1917 version of the Federal Reserve Act, which remained in force until February 1932, formulated the rules for the issue of Federal Reserve notes. In 1916, Congress allowed the FED to accept banker's acceptances as "eligible" to cover the banknotes issued, gold and gold certificates in 1917. In 1917, total cover was also reduced to 100%, with a minimum of gold or gold certificates.

Sec. 16 of the Federal Reserve act from 1917 reads as follows¹²: "The collateral security thus offered shall be notes, draft, bills of exchange indorsed by a member bank of any Federal reserve district and purchased under the provision of said section fourteen of this Act, or banker's acceptances purchased under the provision of said section fourteen, or gold or gold certificates; but in no event shall such collateral security, whether gold, gold certificates, or eligible paper, be less than the amount of Federal reserve notes applied for."

The use of gold to cover banknotes increased from 1917 on, due to a greater gold inflow into the country. Since one aim of the FED was to limit the fiduciary element in the issue of notes, and use its powers to aid commerce, agriculture and industry, covering banknotes with discounted paper could limit the amounts issued and at the same time comply with the market's demand for "productive credit". The substitution of discounted paper with gold as gold flowed into the country allowed the strengthening of the USA gold standard function.

The Federal Reserve Act definition of "eligibility" can be summarised by the maintenance of the issue of banknotes on a gold basis and an improvement of the "elasticity" of issues. Money had to be elastic in order to soften the cyclical and random fluctuations of credit. It had to remain linked to gold in order to assure medium- and long-term equilibrium. In this sense, the FED's currency policy was a reflection of its credit policy¹³.

We compare the principles expressed in the statute with the characteristics of the FED's open market operations as revealed by Toma and Wheelock. The comparison supports the hypothesis that the use of banker's acceptances to expand and contract currency

¹² Udell, ed., 1971.

¹³ See Miller, 1922, pag. 179 and footnote 10.

during seasonal disturbances of banking credit¹⁴ complied with the principle of supplying elastic money to avoid short- or very short-term disequilibria.

Open market operations on government securities do in fact illustrate the aim of preserving long term equilibrium by a harmonisation of the supply of banknotes with gold flow. Government securities were purchased when gold flowed into the country, and the liquidity thus created was returned to the reserve banks in repayment of discount-debts. The final result was a restriction of the discretionary element of the FED's intervention to the bare minimum.

We stress this element to signal that a disequilibrium eventually arising from the reduction/reversal of the gold flow would be actually reinforced by the sale of government securities, and satisfying the needs of the banking system with notes covered with new discounted papers would accelerate the credit contraction (started by the gold flow reversal).

The kind of paper negotiated on the open market also influenced the composition of the currency issued: the seasonal FED intervention, by means of acquisition or sale of banker's acceptances, seems to have changed the amount of Federal Reserve notes in circulation¹⁵. Federal Reserve notes circulation also varied anticyclically according to variations in the country's gold stock. As gold flow increased, and discounted paper in FED's possession decreased (with the purchase of government securities), the use of gold to cover banknotes increased. At the same time, the amount of gold money (certificates and coins) issued and circulating also increased when gold flowed in, thus reducing the quota of Federal Reserve Notes in circulation (see Appendix, Econometric Tests).

Given that open market operations on government securities enabled the FED to control discounted paper, we suggest that they were used to vary the use of gold as cover of Federal Reserve notes. In other words, the FED purchased government securities to replace discounted paper with gold in order to cover banknotes issued, thus obtaining a sort of "gold neutralisation" which conformed

¹⁴ Toma, 1989,p.104.

¹⁵ There seem to be a seasonal relation between banker's acceptances purchase and the issue of FED notes, since the seasonal dynamics of these series are similar.

perfectly both to the statute rules and to the functioning of the gold standard.

4 - The issuing function: Federal Reserve notes vs. gold certificates

In 1922 the Federal Reserve banks had almost completed the process, begun in 1916, of centralisation of gold stock from member banks into their own vaults. Given that member banks were not allowed to directly use the gold coming into their possession to increase their reserves¹⁶, they were obliged to send the gold to the district reserve bank, where it was added to their reserve balance. Freedom given to the banks by the FED to manage funds entering the country, and the effectiveness of the reverse mechanism forcing credit contraction as gold left the country, depended on the centralisation of gold stocks.

In 1922, with the continued large inflow of gold into the country, the Board spoke in favour of a "normalisation" of the reserve ratio level. This meant the "definition of an apprehension point" for the reserve ratio¹⁷.

The severity of the 1918-19 inflation, when the reserve ratio fell to little over 40% and credit contracted in order to re-stabilise prices, convinced the FED of the importance of fixing and defending a "normal value" of the reserve ratio to control credit expansion. The new norm was fixed at 70%, a value considerably higher than the minimum (40%), which took into consideration the expectations of public opinion, and which reflected the new psychological, legal and economic environment of those years.

The apprehension point was defended by managing the issue of gold money (coins and certificates), mainly by the issuing of gold certificates, a kind of currency officially emitted by the Treasury. An

¹⁶ Miller, 1922, pag.179. The study of the relationship between currency policy and credit and gold policy is particularly interesting. Miller wrote (pag.197): "The conditions upon which the community can get additional supplies of currency are [...] an important factor in credit regulation. The regulation of currency becomes, in fact, a method of regulating the flow and volume of credit." Essential to regulate the monetary policy was not "that of finding a substitute for the reserve ratio as a guide to credit policy, but rather that of finding how to make our reserve ratio a more sensitive and immediate indicator of changing conditions in the credit situation that now is".

¹⁷ Federal Reserve Bulletin, April 1924.

increase in the circulation of certificates forced the FED to transfer to the Treasury the gold necessary to provide their cover (100%), thus causing a reduction in the reserve ratio. This transfer of FED gold to the Treasury was an important mechanism to avoid inflation in times of gold inflow. The Fed "psychologically" reduced the possible demand of FED credit from the banks, at the same time it supplied gold currency, a typical feature of gold standard systems¹⁸.

This created two reserve ratios guiding the FED: the first was the original value of the Reserve Ratio (RRo), "original" since it was the ratio computed before the increase in gold stock provoked a new issue (circulation) of gold certificates:

RRo = Gold Stock / Federal Reserve Notes + Federal Reserve Deposits

The second reserve ratio was the ratio published by the FED in its official documents (RRp), whose value resulted from the management of currency composition and discounts:

RRp = Gold Reserve / FED Notes + FED Deposits = Δ RRo
 = (Gold Stock - Δ Gold Money) / ((- Δ Fed. notes) + Δ Fed. Deposits)

Although the reserve ratio is normally calculated as Reserves/Liabilities, it makes sense to calculate the reserve ratio as Gold/Liabilities, since the FED's reserves were mainly made up by gold, apart from a limited amount of "other cash"¹⁹, probably foreign currencies, which remained almost constant throughout the period considered. The apprehension point for the reserve ratio was fixed in 1922. Thereafter, a change in RRo signalled the divergence of the actual value of the reserve ratio from the 70% standard.

The quantity of gold money, positively correlated with the change in value of RRo, caused an opposite change in the issue and circula-

¹⁸ Brown, 1940, p.257 and ff.

¹⁹ G.E.Roberts, in: League of Nations,1931, p. 53: "On June 30th, 1930, the total amount outstanding was \$ 1,489,989, of which \$495,000,000 were in the reserve banks and \$994,841,000 were in circulation. If all were in the reserve banks, the reserve percentage would be higher than it is; but, with the reserve percentage above 70 it has not been considered important to increase it. Indeed, at a time when inflationary tendencies were apparent, a psychological consideration may have been a factor in the policy followed." S. Board of Governors, Banking and Monetary Statistics, 1943, p. 330ff.

tion of Federal Reserve notes. Thus, the two principal types of currency changed with the value of RR_o in the previous period:

Gold Money $= a (\Delta RR_o t-1)$

Federal Reserve notes $= b (- \Delta RR_o t-1)$

The fact that certificates were issued in amounts approximately equal to the increase in monetary gold stock led some observers to consider them as a kind of gold sterilisation. The actual reasons for the adoption of this policy were explained by Benjamin Strong in 1926, in his testimony before the Royal Commission on Indian Currency and Finance²⁰:

"1) to prevent people from discriminating against Federal Reserve notes in favour of gold certificates as the latter became rare;
 2) to avoid inflationary agitation which might be encouraged by the existence of a very high Federal Reserve ratio;
 3) to prevent people from becoming habituated to a very high ratio, and therefore from becoming alarmed if it were later reduced by a redistribution of gold- in other words, to reduce the "apprehension point";
 4) to fix the amount of gold in circulation and therefore permit changes in the country's supply to be reflected in changes in the Federal Reserve banks' gold holdings."

The issue of gold certificates did not actually sterilise gold inflow. And the substitution of gold certificates for Federal Reserve notes did not change the amount of money in circulation, which continued to be determined by public demand for currency and by the change in bank deposits²¹. Currency composition was coherently managed at least from the end of 1922 to the second half of 1930, when the absolute amount of gold money in circulation began to fall definitely, with no relation to RR_o .

5 - The "Buffer Credit Mechanism"

The interaction between open market operations on government securities and the use of the discount-window produced a "buffer"

²⁰ Brown, 1940, p.258.

²¹ Federal Reserve Bulletin, 1926, p.468 and ff.

mechanism, which enabled the FED to control the effects of gold on banking activity.

Assuming (as we did in Part 3b) that the buffer credit function was linked to the management of currency composition and that it contributed to stabilise the "published value of the reserve ratio" (RRp), government securities should also have moved in line with the "original" value of the reserve ratio, since they varied the amount of discounted paper possessed by the FED and thus helped the FED to manage the use of gold as cover:

Government Securities = $c (+ \Delta RRo)$

An increase in gold stock or an autonomous decrease in FED-liabilities (which, taken as an indicator of the business cycle, means at most a recession), forced the FED

- ceteris paribus to purchase government securities and
- indirectly caused an extension of bank credit (since the banks repaid their debts to the FED) and a fall in interest rates.

Indeed, a RRo reduction (signalling the reversal of gold flow or an excess of credit supply) forced the FED to sell government securities, which in turn pushed the banking system into borrowing and consequently into liquidating part of its earning assets. This use of open market operations has an explicitly "defensive" meaning²²; but it does not rule out the possibility that "dynamic" goals were also pursued by means of open market operations, as it certainly happened in 1924 and 1927²³.

²² Trescott, 1982, p.213: "Roosa applied the term "defensive" to open market operations designed to offset disturbances to bank reserves. The major forms of such disturbances in the 1920s were currency inflows and outflows, variations in bank borrowing from the Federal Reserve, and gold flows. Defensive open market purchases would be appropriate to offset potential reserve losses arising from outflows of currency and gold and from decrease in Federal Reserve loans to banks (Roosa, 1956, p.8). Roosa applied the term "dynamic" to open market operations designed to alter bank reserve positions for some substantive economic or financial objective. In the 1920s, such objectives included counteracting business-cycle movements, trying to promote the return to gold standard, and curbing stock-market speculation." Roosa, R.V. (1956) "Federal Reserve Operations in the Money and Government Securities Markets", Federal Reserve Bank of New York.

²³ A thorough description of the goals pursued by the FED in those years is found in Wicker, 1967.

6 - The credit buffer, the management of currency composition and gold outflow

The strategy hypothesised in this paper consisted of three parts:

- i) Gold Money = a (+ Δ RRo)
- ii) Federal Reserve Notes = b (- Δ RRo)
- iii) Government Securities = c (+ Δ RRo).

The statistical test does not reject this hypothesis (s. Appendix). The data react in conformity with all three functional relations, even though the regressions show a different degree of robustness.

Open market operations with government securities must have been strongly influenced by RRo (Regr. c1,2,3), which without doubt is an important result. The relation between the quantity of FED notes and RRo is weaker (Regr. a1,2), while a strong linkage between FED notes and FED notes in the previous quarter (Regr. a3,4) was found. The evidence on FED notes fits very well Riefler's and Burgess' description of the FED's adherence to member banks credit demand, and supports the thesis that the issue of bank notes was mostly subordinated to the control of business cycles.

This strategy worked well when gold flowed into the country, as shown in the FED's performance in 1924-28. It became very difficult to use the same methods when gold began to leave the USA, returning to Europe or Latin America, and the magnitude of the effects was not intuited.

First, in 1927, when the FED's strategy required a calling back of gold certificates already in circulation, there was a tendency for the public to hoard them. Second, even if a substitution of Federal Reserve notes for gold certificates increased the reserve ratio value known by the public -a measure which might have been psychologically useful- the FED's ability to issue banknotes could not increase, unless the FED was in possession of eligible papers to cover the new banknotes. The Federal Reserve Bulletin of September 1928 reads²⁴: "It is often stated that the Federal Reserve Banks could increase their surplus gold by paying out Federal Reserve

²⁴ Federal Reserve Bulletin, p.614.

notes and substituting them for the gold certificates now in circulation. This statement overlooks the fact that collateral will be required against the additional Federal Reserve notes put into circulation, and that the entire amount of gold drawn into the Federal Reserve banks would thus have been impounded with the Federal Reserve agents as cover for the additional notes issued."

Third, a critical situation arose from the necessity to contract the supply of credit when the RRo fell (credit-buffer). In 1928, the FED pushed the banking system to discount by selling government securities but bought banker's acceptances on the open market, causing the rates in the two markets to show an unusual "scissor effect"²⁵. The difficulty of pushing the banking system into discounting by selling government securities, thus accelerating credit contraction, increased when business conditions worsened. At this moment, a further problem came to light: the problem of "free gold".

7 - Free gold

Because gold backed the Federal Reserve notes in varying degrees, the FED used more gold than the minimum set in its statute (40% of the notes in circulation and 35% of the total amount of FED deposits). The actual amount of gold still at the disposal of the FED to cover banknotes was called free gold.

The amount of gold left to the FED to support further extensions of credit and currency was calculated as follows²⁶:

- FED Gold Reserves
- FED notes issued²⁷
- + Eligible paper
- Gold Redemption Fund²⁸

²⁵ Friedman and Schwartz, ch.6.

²⁶ Burgess, 1928; Anderson, 1930; Harris, 1933, Appendix C; Federal Reserve Bulletin, Sept.,1928; Federal Reserve Bulletin, Oct. and Nov. 1931; Federal Reserve Bulletin, Feb., 1932; FED Annual Report, 1931 and 1932.

²⁷ Free gold was calculated on the basis of FED notes issued. The difference between notes "issued" and "circulating" was "counter cash"; that is, notes "held for counter requirements, whose volume fluctuated (seasonally) around \$300 million. Counter cash was useful as a precautionary reserve, since the strict regulations regarding the issue of banknotes did not permit a Federal Reserve Bank to use notes issued by another Federal Reserve Bank or reuse those previously withdrawn from circulation.

- Reserve on Deposits

= Free Gold

The coverage of FED notes by eligible paper seldom reached 60%. Free gold was then usually less than the value of "excess reserves" published by the FED, being equal to the total gold reserves minus the minimum gold cover for notes and deposits (40% and 35% respectively).

The problem with free gold was that each decrease in gold reserves not balanced by an increase in the amount of eligible paper (seasonally adjusted, the eligible paper consisted mostly of discounted paper) reduced FED's capability to issue notes.

In 1929, the FED began to loose discounted paper, as a consequence of the mounting crisis in the banking system. Gold began to flow into the country again after the strong monetary tightening in 1928, but free gold diminished, for the flow was not so abundant as in the early twenties.

According to the academic view, 400 million dollars was the minimum of free gold required to insure stability. Free gold had remained almost constant at 750-800 million dollars between 1924 and 1930, but fell rapidly between 1930 and 1931, sinking below 300 million in December 1931, when gold entering the country was not enough to replace the loss of eligible paper due to the contraction of banking activity.

Had free gold stability really been the FED's goal, the issue of FED notes would have been reduced. The decrease in free gold was in fact a sign of the FED's willingness to expand credit and aid the banking system. Otherwise, had the Federal Reserve Act been reformed previously, no problem of free gold scarcity would ever have arisen. Only in February 1932 did the Glass-Steagall Act make government securities eligible to cover new issues of Federal Reserve notes, a possibility of real support for commercial banking.

²⁸ The Gold Redemption Fund was a fund created to insure the convertibility of FED notes; it consisted of gold, representing 5% of the notes issued and covered by eligible paper (other than gold).

8 - The reserve ratio as a guide to credit and issue policy

The use of the credit-buffer and the management of currency composition allowed the FED to control the effects of gold, e.g. on the general price index, which remained stable and contributed to stabilise the dollar parity with gold. It was the stability of the dollar-gold parity, which allowed the dollar to start substituting the pound as leader of the inter-war gold system. By impeding the devaluation of the dollar against gold, the FED also prevented a loss of purchasing power despite the expected future gold outflow.

Otherwise, the FED's use of RRo as a guide to credit did not hinder the banking system's gigantic credit expansion. The "passive" behaviour of the FED in the face of the banking system's activity, which we suppose used the reserve ratio as a guide also towards credit, supports the thesis that the FED trusted the gold standard as a self-stabilising system.

9 - Shifting from the open market to the discount shoulder

The character of open market operations on government securities is also described by Brown in his monumental study of the interwar gold standard²⁹: "In 1922 the Federal Reserve System began to develop a technique of credit control later described by Governor Strong as shifting from the open market to the discount shoulder. This technique was to prepare the way for changes in discount rates and to make them effective by open market purchases and sales of securities. It did not contemplate making substantial inroads upon existing reserves, but relied for its effectiveness on the traditional unwillingness of American banks to be in debt. It was a policy of supplementing discount rate changes by changes in the composition of the portfolio of the Federal Reserve banks."

The effects of the FED's management of banks' indebtedness to stabilise the reserve ratio around the 70% apprehension point is proved by the correlated behavior of the curves of reserve ratio.

The long-run relation of free gold to the Federal Reserve ratio can be explained by the effect of the open market in government secu-

²⁹ Brown, 1940, p.260.

rities. After a gold inflow the FED purchased government securities, which caused a decrease in the quantity of discounted paper (eligible paper) and triggered off a decrease in the amount of free gold. Free gold increased, *ceteris paribus*, as gold stock increased and/or the amount of eligible paper increased, when FED deposits fell and Federal Reserve notes were withdrawn from circulation. Free gold fell, *ceteris paribus*, when FED liabilities fell and/or gold left the country and/or the amount of eligible paper making up the cover of FED notes decreased. Since the amount of discounts made up bank reserves, their withdrawal made the reserve balance fall; bank reserves were part of FED deposits, and their fall increased the reserve ratio³⁰.

From 1922 to 1930, the quantity of free gold fluctuated around 750-800 million dollars. The extent of the 1928 contraction is reflected in the peak reached by free gold in that year, which was due to the increase in discounting. The value of free gold between March 1930 and December 1931 fell from a little less than 1000 to 291 million, notwithstanding the increase in discounted paper and banker's acceptances coming into the FED's possession between September and December 1931. This indicated that the FED was expanding its credit far above the limits of security accorded by statute. Paradoxically, due to the slow withdrawal of gold certificates from circulation, the publicly announced reserve ratio value reached over 70% from the second half of 1930, thus showing the actual hurdles to credit support by the FED, created through its application of the described gold management strategy.

10 - Free gold as a measure of credit supply: 1930 and 1931

The scarcity of free gold in the early thirties was seen as an index of excessive monetary expansion³¹. In the 7th chapter of their US monetary history, Friedman and Schwartz discuss the hypothesis that the scarcity of free gold had prevented the FED from further extending its credit. Their conclusion is that free gold was a pseudo problem created by the followers of the "real bills doctrine" and by conservative thinkers who opposed further purchase of government

³⁰ A movement of both curves in the same direction means that the FED had not (yet) intervened in the open market after the change in gold stock.

³¹ Sprague, 1929; Anderson, 1930; Beckhart, 1931; Harris, 1933, considers the scarcity of free gold as a false problem, because discounted paper could always be obtained by means of a credit contraction.

securities. According to them, the FED's real problem was the ineptitude of its leaders.

However, a fundamental element to be considered, namely the possibility to use government securities to cover the issue of new Federal Reserve notes was first introduced in 1932, as we shall show in detail.

Back to free gold, since the banking system's reaction to an open market purchase prevented the FED from exercising direct control on bank reserves, as Friedman and Schwartz suggest, the problem caused in 1930-31 by the rapid reduction of free gold cannot be considered a false one. On the contrary, it is possible to link the contraction of the amount of Government securities kept by the FED in those years, with the FED's intention to raise the amount of discounts in order to avoid exhausting its free gold reserves. The fact that the FED had accumulated gold³² since 1928 instead of redistributing it, as central bankers had agreed to in 1927, should be explained by the necessity to provide coverage to banknotes without forcing banks to discount.

The problem of keeping enough free gold in order to assure monetary sphere equilibrium was underlined e.g. by Benjamin Anderson and Oliver Sprague, whose interpretation of the monetary policy is considered by Friedman and Schwartz to be dangerously influenced by the real-bills doctrine. In 1928, even Randolph Burgess, who has never been accused of being a "real-bills" partisan, expressed his fears about the FED's future ability to reach its goals in case free gold continued to decrease and gold flowed out as expected. Especially when, at the same time, the policy of monetary tightness required in fact a rise in the level of free gold³³.

A credit contraction caused by gold leaving the country was hard to impose if productive activity recessed. On the other hand, the rules of the Federal Reserve Act required a decrease in gold coverage to be compensated by discounted paper. The idea of a monetary statute reform was highly controversial. In January 1931, Beckhart expressed an opinion popular at the time³⁴: "That anyone would seriously consider this proposal, the coinage of government obligations

³² see Eichengreen, 1987; Fremling, 1985.

³³ Burgess, 1928.

³⁴ Beckhart, 1931, p.149.

into currency, seems inconceivable. One of the primary purposes of the Federal Reserve act was to do away with a government bond-secured note issue, though a departure was made in permitting the promissory notes of member banks secured by government obligations to be used as security for Federal Reserve notes."

Even when gold reserves had begun to register a strong movement downwards related to the Bank of England's exit from the gold standard system, in the Federal Reserve Bulletin issue of October 1931 the Board still asserted that the "buffer" ensured its control of the situation³⁵: "Gold exports and the conversion into gold earmarked for foreign account of a large volume of foreign balances previously held in the New York market, which were reflected in a net decrease of \$ 370,000,000 in the country's stock of monetary gold, had little effect, however, on the amount of free gold at the disposal of the Federal Reserve system, owing to the fact that the reserve banks met the demand for reserve bank credit arising from these transactions and from the increase in the demand for currency through the discount of paper and the purchase of acceptances, which are eligible as collateral against Federal Reserve notes. The decrease in the gold stock has therefore resulted in a substitution of eligible paper for gold in the collateral backing of Federal Reserve notes, with the consequence that the amount of free gold in the possession of the reserve banks has remained substantially unchanged."

The amount of discounted paper actually increased between September 1931 and February 1932. A solution to the problem of covering new issues of FED notes without causing a credit contraction in periods of gold outflow was a liberalisation of the Federal Reserve Act: the Glass-Steagall Act extended eligibility to Government securities.

This reform of the Federal Reserve Act occurred only in February 1932. At this point, the urgency to compensate the fall of free gold without further tightening the supply of credit overtook the Congress' fear of enlarging the discretionary power of the monetary authorities.

³⁵ p.555.

11 – The crucial year of 1928

1928 was the year in which the reconstitution of the interwar gold standard was completed, and gold flows acquired mobility. It is therefore crucial to the period under analysis.

The increased volatility of gold movements was expected to principally affect the US position, and consequently the position of the FED. The FED's opinion regarding gold was notorious: Strong and other personalities had often affirmed in the twenties that the inflow and permanence of gold into the country had to be considered transitory, since it would go back to its place of origin on the world's return to the gold system.

FED expectations cannot be considered "obvious", and were not accepted as such since they overlooked the consequences of a continued state of disequilibrium, and the effects of the consequent monetary policy on economic development. Otherwise, those expectations justify our supposition that FED regulated the effects of gold on the national economy while promoting the return to the gold standard.

American gold exports had already begun in the early months of 1927, and their continuance was encouraged by Benjamin Strong at a conference of central bankers held in New York in July 1927, attended by Norman, Schacht and Rist (substituting Moreau); the mild depression of the early 1927 allowed the FED to harmonise international with domestic goals³⁶.

The gold distribution process stopped in 1928, when domestic exigencies pushed the FED into tightening credit conditions by reducing its portfolio of government securities, and increasing its (banker's acceptances and) discounted paper³⁷.

³⁶ Brown, 1940, p.565.

³⁷ Parker Willis, in: "The Banker", 1928, underlined the dangers for the banking system arising from the gold outflow, since the FED would surely contract credit to defend its gold reserves. G.E.Roberts, "Gold Movements in and out of the United States and their Effects", in: Selected Documents of the Gold Delegation, p.47, affirmed: "The attitude of the reserve authorities and of bankers generally towards gold during these years was one of apprehension and anxiety. Far from being viewed as advantageous and desirable, they were regarded as abnormal, temporary, and therefore a menace to financial stability. Bankers, generally, viewed with misgivings the development of a structure of credit upon them, considering it probable that within a short time the reestablishment of Europe upon a gold basis, together with economic recovery, would result in the recall of a substantial portion of this gold, thereby possibly requiring a dras-

By the "buffer mechanism of credit control", a new gold flow into the country helped member banks to repay their discount debts, and when those were extinguished, to enlarge credit and deposits many times over. When gold flowed out, a strong credit contraction had to take place, since member banks were not allowed to remain permanently in the red with the central banks.

The events of 1928 are consistent with the pattern described: since gold flowed out, FED notes were issued in substitution of gold certificates; government securities were sold and credit contracted. Monetary contraction in the USA in 1928³⁸ opened an international contraction process³⁹; as a re-composition of the reserves portfolio took place among the countries joining the gold standard system⁴⁰, contrasting with the principle of making "economy of gold"⁴¹ which was agreed during the Economic and Financial Conference held in Genoa in 1922, many central banks dismissed their securities on dollar and increased their allegiance to gold.

The process did not end in a competition for gold, due to the fact that monetary statute reform in various countries permitted the management of monetary policy with a reduced quantity of (gold) reserves. Despite this, monetary contraction was a world phenomenon; USA and France were the sole countries able to increase gold reserves⁴² after 1929, thus contributing to the system's destabilisation.

12 - The 1932 reform and the gold "fetish"

Notwithstanding the Glass-Steagall Act's approval, FED action did not change very much, either in giving a more incisive aid to the banking system in crisis or in stopping gold accumulation. The importance of gold as a means of reserve was even further emphasised by the 1933 and 1934 monetary reforms.

tic contraction of credit in the United States. Competitive conditions practically compelled an expansion of credits, as additions to reserves occurred, but a wholesome prudence forbade them to incur continuing indebtedness at the reserve banks for the purpose of serving the speculative operations of the stock markets, by this time of increasing importance."

³⁸ Hamilton, 1988, shows that the "Great Contraction" began in 1928.

³⁹ Fremling, 1985.

⁴⁰ Eichengreen, 1987.

⁴¹ Brown, 1940, p.731-732; 737-749.

⁴² Eichengreen, 1987.

It is perhaps justifiable to think that the strong attachment to gold expressed in this era of monetary policy, especially by economic leaders, was largely responsible for the behaviour and performance of the FED during the Great Depression and for the depression itself.

The ability of the FED to absorb gold without creating inflation, damaged the economy when the strategy caused a monetary contraction during a recession, in the period between 1929 and 1931, and gave FED the responsibility for causing the Crash and Great Depression⁴³.

Indeed, after 1928 but especially in 1930-31, continued increasing its stock of gold was paradoxically the only chance the FED had to avoid the contraction of credit, since the statute rulings remained unchanged, a previous reform could have eased economic conditions in the early years of the Depression.

However, considering that the soundness of a country's credit situation was still generally measured by its gold reserves, and that there was such a strong belief in gold that it has been for a long time regarded as a fetish⁴⁴ by bankers and the public opinion, we are finally inclined to consider the FED's adherence to the "symbology" of the metal a form of swimming with the tide, and FED's accumulation of gold a means to defend the leader position the dollar reached in the twenties.

Since gold was not sterilised in the twenties, but its effects on the economy seem to have been controlled (until 1931) by managing currency composition and the amount of banks' discounting under the guidelines of the reserve ratio, the FED could have adhered to the rules of gold standard more closely than generally recognised.

This study confirms, however, also the distance existing between the gold standard rules followed by the FED in 1924-1931 from the one described in the manuals, since the final result of its policy was the defence and accumulation of gold reserves, thus the creation and maintenance of leadership positions.

⁴³ Eichengreen, 1987.

⁴⁴ Keynes, "Is There Enough Gold? The League of Nations Inquiry", 19 January 1929, in: Collected Works of J.M.Keynes, p.775-780.

Taking to the impossibility to emit money at demand, the monetary strategy described also explains why a contraction took place in 1928, and how it consequently led to panic and crash. This example actually represents the most excellent case of “curbing money supply”, clearly showing the destructive effects of inducing such a concept in the practice of central banking.

Conclusions

This case-study directly connects the meaning of (choosing) a monetary policy with the effects it exercises on the market. Bagehot’s critique applies to a policy of curbing money supply, causing absolute disruption.

Also the case for privileging good productive papers (along real bills criteria, as the FED did) solicits a bagehotian critique, Lombard Street offers enough evidence of the necessity to offer credit at demand, as the macroeconomic requirement to defend the *system’s trust*.

Case Study II: Bank of England, 1844 and after

The Bank of England’s monetary policy during the Gold Standard era represents the starting point for our analysis of the relationship between theory and practice.

The first experimentation in the Bank of England’s policy arose at the beginning of the “currency” versus “banking” debate, as also Bagehot’s work. The Peel Act, a major milestone in the history of monetary policy, was said to shape the Bank of England’s policy of the time and to represent the first major victory of the “currency” over the “banking” doctrine. It can be shown, that the teachings of the “currency” school had only a superficial impact on the Bank’s policy of the time⁴⁵.

The Peel Act divided the Bank of England into an Issue and a Banking Department. The Banking Department was legally and functionally subordinated to the Issue Department. The Issue Department

⁴⁵ The work of Andreades is fundamental to our results.

held the task of maintaining and protecting the country's gold reserves – thereby also acquiring the privilege of issuing currency. The Banking Department cared for currency circulation by granting credit to commercial banks. The Issue Dept. clearly reflected the influence of the currency school because it officially issued notes in accordance with gold coverage as set out by law. The formal subordination of the Banking Dept. to the Issue Dept. as a result of the Peel Act represented the victory of the "currency" school over the "banking" school. One result of this victory was that the quantity theory of money gradually emerged as the orthodox view.

Analysed under an historical view, the BoE's monetary policy leads instead to the conclusion that the Banking Dept. effectively ran the country's monetary policy of the time.

It is true that the Issue Dept. held in its vaults the gold reserves required to cover the issue of notes –historically a central bank's most important role– while the Banking Dept. only held reserves in sterling notes. However, the Banking Dept. was responsible for changes in the discount rate and historical documents support the hypothesis that convertibility was actually maintained through interest rate policy: in other words, the Banking Dept. was responsible for the nation's monetary policy. "Currency" and "Banking" doctrines fail to clear the significance of this policy: it can be reviewed with the help of Bagehot's concerns.

The link between the two departments was established via the Banking Department's management of the interest rate. Andreades clarifies the transmission mechanism between the two departments and the markets by reporting that the usual way to obtain credit from a London banker was through the sale of bills or other securities. This credit would be used to secure central bank money, which, in turn, would be used to buy gold from the Issue Dept. But the notes that enabled one to demand gold originated in the reserves of the Banking Dept. A rise in the demand for central bank funds forced the Banking Dept. to make a defensive move, very much in the form set out by Bagehot: a rise in the discount rate would be geared to the extent of a rise in the demand for money. This exercise of policy by the Banking Dept. prevented any absolute ceiling on money supply imposed by the Issue Department making

any impact on the market, where banks pulling down the shutters would have unleashed panic.

Through its possession of the nation's gold reserves, the Issue Dept. exercised control over the volume of currency issued. But as the Banking Dept. determined the central bank's key lending rate, it was able to use market mechanisms to circumvent an absolute cap: (a) higher interest rates forced commercial banks to reduce their levels of business, and (b) higher interest rates, in the short and medium term, would attract new domestic and foreign capital, thus relieving the strain on the credit and money market.

Thus the policy of the Banking Dept. showed bagehotian traits: as a result of the balancing mechanism that existed between the two Departments, every increase in the demand for notes would prompt the Banking Dept. to increase central bank lending rates. Stabilisation of the demand for money - and thus also convertibility - were achieved by interest rates adjustment, accompanied by suspension of the Peel Act in times of panic.

The significance of interest rate policy in the stability of the system is made clear in a number of documents.

Lindert⁴⁶ writes that the impact of the BoE's interest rate decisions was that an increase would bring a flow of short term capital into the country, put a stop to capital outflows from the London financial market and that the London banks would reduce their lending to importers of goods.

Keynes laid stronger emphasis on the significance of the close contact that existed between the central bank and the financial markets as an underlying cause of England's financial success. This was the Banking Department's sphere of influence⁴⁷: "The essential characteristics of the British monetary system are, therefore, the use of cheques as the principal medium of exchange, and the use of the bank rate for regulating the balance of immediate foreign indebtedness (and hence the flow, by import and export, of gold). [...] But foreign observers seem to have been more impressed by the fact that the Englishman had sovereigns in his pocket than by

⁴⁶ Lindert, P.H., *Key Currencies and Gold, 1990-1913*, International Finance Section, Department of Economics, Princeton University, 1969.

⁴⁷ J.M. Keynes, *Collected Works of J.M. Keynes*, p.828.

the fact that he had a chequebook in his desk; and took more notice of the "efficacy" of the bank rate and of the deliberations of the court of directors on Thursday, than of the peculiar organisation of the brokers and the London money market, and of Great Britain's position as a creditor nation. They were thus led to imitate the form rather than the substance".

Keynes views the British balancing mechanism in the light of Britain's position as a creditor nation on the international market. He reports that if a nation's financial market is not an international creditor then the central bank must itself strive for creditor status internationally. On this basis, he writes, a central bank can use interest rates as an effective way of securing not only a currency's external convertibility but also (by ensuring the stability of domestic money and credit markets) its internal convertibility. This is how it is explained: the Bank of England lends to financial middlemen who in turn lend abroad against bills or other forms of paper security. A rise in the central bank's lending rate forces these middlemen to reduce their commitments. In principle, to be able to carry out effective policy in any area, a central bank must be a short-term lender in the international financial market and at the same time to be so involved in foreign banking centres that it can independently change its position at short notice. The only alternative would be the holding of an enormous reserve of gold, an expense that would almost impossible to finance⁴⁸.

Apart from the central bank's monetary strategy vis-à-vis the outside world, which will not be further detailed in what follows here, an important aspect should be again underlined. The mechanism of coupling an increase in interest rates to an outflow of sterling reserves at the Banking Dept. because of a threatened "Budget" restriction by the Issue Dept. can be seen as a primitive but effective interlocking system to stabilise the demand for money and it thus corresponds precisely to the relationship between money supply and interest rate that Bagehot identifies as money market management.

⁴⁸ As we stress in Ch.2 of this paper.

Case study III: Bundesbank's Operations

The policy of the Deutsche Bundesbank 1970-95 is an example to compare current central bank practice with the monetary policy precepts proposed by Bagehot, in order to demonstrate a further thesis. It is worth examining whether and to what extent a stable money market can be achieved using only the discount tool (an open discount window and changes in the discount rate) or whether further instruments applied in the formation of monetary policy are nonetheless, consistent with the principles set out by Bagehot for money market management.

The Bundesbank's policy, like the policy of the central banks of many industrialised nations, is characterised primarily by open market operations. The fact that open market operations serve to react to the dynamics of the demand for money shows just how close the Bundesbank's practice is to Bagehot's principles.

So, the main tool in the Bundesbank's strategic armoury was not its discount, but rather its open market operations. This represents not merely a variant of Bagehotian policy, but, above all, a smart adaptation of the money market to the development of the local banking system. The fact that a good number of central banks exercise their influence on the money market more through open market operations and bonds interest rates than by the discount window and discount interest rate only underlines the fact that the discount window is replaceable as a monetary policy tool. Actually for many central banks, changing the discount rate has acquired the status of a mere tactical signal, while it is their open market securities business which reflects the genuine interaction of commercial bank demand with central bank supply and, thus, determines movements in the structure of interest rates.

Following Bagehot and not the neo-classical school means that stabilising the credit markets can't be reached by curbing its expansion, but by supporting its expansion in order to find adequate understanding of the whole system's needs⁴⁹. Successful central banks are developing - as their instruments of monetary policy - the use of those securities that fill the assets column of their bank-

⁴⁹ This is a methodological consideration and a somehow educational and psychological approach to economics and economic policy.

ing systems and which are therefore most widely traded also on the money market. E.g., the Federal Reserve conducts open market operations in federal securities, the Swiss central bank mainly uses foreign currency security swaps.

Back to the Bundesbank, up to the early 1980's its policy focussed on the use of the Discount and Lombard facility. Discount and Lombard rates were frequently altered, sometimes reflecting Germany's external economic situation. As access to the discount window was limited by quotas, changes in minimum reserve requirements and rediscount quotas often served as monetary policy instruments, above all at time when the banks were unable to meet their liquidity needs.

The restriction of money supply through quotas on discount facilities has been often circumvented by the mechanisms of the open market. In the Bundesbank's strategic considerations, the Discount and Lombard windows were used for special funding, rather than for the short- or long-term financing of liquidity needs, which are covered through open market operations. Open market operations were considered far better adapted than the discount window to cover financing needs, which are often very short notice.

The history of open market operations in Germany begins in April 1973 when the restrictive monetary policy of the time led first to a curbing and then to a suspension of the provision of Lombard credits. Open market operations seemed to offer a substitute to the Lombard window with the advantage that they were better suited to the Bundesbank's aim of controlling tightness on the money market. Germany's balance of payments on current account went into deficit in 1979 for the first time in 14 years: repurchase operations, which afterwards dominated the Bundesbank's open market activities, were then used to make liquidity (regularly) available to the banks. Up to that point in time, Germany's market structure had allowed the banks to meet their liquidity needs via foreign currency flows. Thus, there had been no apparent need for open market operations.

The technical provisions of the Buba's open market operations changed constantly since 1979 to meet the Buba's aims. A degree of stability in its strategic structure was first achieved in 1985. The

array of instruments available since then is the subject of the next examination.

1 -The instruments used by the Deutsche Bundesbank

The Discount and Lombard windows became "special financing" instruments⁵⁰: "The Bundesbank traditionally regards Lombard credit as a supplementary facility 'for the short-term bridging of a temporary liquidity requirement'. The Lombard and Special Lombard perform the function of a safety valve, as a tool that should not be used to make available large amounts of over long periods."

The Discount and Lombard rates were an expression of the country's general financial situation. Even though this tool lost its significance as a direct link to the money market, the overall structure of interest rates was measured by the Discount and Lombard rate. They functioned as a market signal: "Changes in the Lombard and Discount rates are a significant trigger for changes in bank lending rates." It was precisely its open market operations that allowed the Bundesbank to influence interest rates in a flexible manner and to satisfy liquidity needs on an ongoing basis. These are the well-known cornerstones of a Bagehotian strategy.

The Bundesbank published the following commentary on the switch from Lombard rate to open market operations to ensure flexible control of the market: "As the banks were practically always dependent on Bundesbank Lombard loans from the end of the 1970s to the mid-1980s, they came to regard these as a never ending source of central bank money. Tension and relaxation in the money market were consequently reflected first and foremost in differing recourse to Lombard loans, while the day-to-day money rate remained closely linked to the Lombard rate. Greater flexibility in money market rates appeared to be appropriate mainly because the German money and credit markets had become more closely linked with markets abroad. Such flexibility was not available by changing the Lombard rate. In addition, short-term and minimal changes in money market conditions offered a greater chance of

⁵⁰ The quotations in this paragraph refer to the Deutsche Bundesbank publication, *Die Deutsche Bundesbank, Geldpolitische Aufgaben und Instrumente*, Sonderdruck Nr.7, Selbstverlag der Deutschen Bundesbank, Frankfurt/Main, 5.Auflage, Februar 1989; p. 23ff.

not being seen straight away as a basic change in the monetary policy stance and thus of being misunderstood."

Mutual interaction between the various instruments affected the market via the key lending rates, i.e. via Discount and Lombard conditions. Below follows a discussion whether it is sensible to distinguish between "fundamental signals to the market" and instruments that influence the market day-to-day. As the Lombard window is in any case not intended to cover the banks' "normal" liquidity needs, it was the securities repurchasing (repo) rate that exerted most influence in the money market and, ultimately, on "basic" lending rates.

2 -Open market operations and money supply aims

According to the official documents, the Bundesbank viewed the implementation of open market operations as an effective means of influencing the money stock. "By introducing repurchase operations, the Bundesbank was able to close the financing gap that opened up between the permanent provision of liquidity and the extent of Lombard facility utilisation regarded as acceptable. It succeeded (..) in limiting recourse to Lombard finance and in restoring a market situation that was seen as desirable from a monetary policy viewpoint at any moment in time, one that reflects the growth path of central bank money supply."

From a monetary theory viewpoint, the eventual existence of money supply goals would highlight internal contradictions in the Bundesbank's strategy. The hypothesis of alternative significance of open market operations could easily get lost in the discussion on the influence of monetarism. We saw above that the strategy of the Bundesbank was not setting money supply targets. It was noted, furthermore, that open market operations – traditionally described in monetarist writings as the key instrument of money supply control – optimally served a "bagehotian" interest rates policy.

We focus attention on the Buba main aggregates "Central Bank Money Stock" and "M3". Central bank money stock was seen as a mirror image of the money stock of the economy, with minimum reserves viewed as a product of monetary expansion by the finan-

cial institutions. More akin to the philosophy of managing the volume of money, M3 was seen over the long term as reflecting the development of domestic product in nominal terms and of the overall level of prices.

Where money supply was officially said to be restricted, we found in fact no ceiling on central bank's issue of money. Moreover, interest rate policy find a link to inflation only in official statements. The connection of the Bundesbank's monetary policy to monetary orthodoxy is due, in our opinion, to the inability to find support in an alternative consistent monetary theory.

Since 1974, the Bundesbank constantly used the setting of money supply targets as a measure and indicator of "the purchasing power stability and of the tightness of money" and was unable to distance itself clearly from neoclassical theory in public discussion of its strategy. Close analysis of its strategy reveals the difference from orthodoxy and some Buba's Economics Department declarations confirm our interpretation⁵¹: "The fact that 'central bank money stock' can be confused with 'monetary base', a term that has become known from the monetarism debate has sometimes burdened public debate. The statistical differences between the two concepts are indeed small (..) of more importance are the differing interpretations of the two constructs. According to the thinking of one academic school, the 'monetary base' describes the original monetary policy impulse that is the starting point for monetary expansion. In contrast, 'central bank money stock', as defined by the Bundesbank, represents a broad definition of an important monetary volume concept: it is a provisional target volume that the Bundesbank can influence through its management of money market conditions."

The interaction with the banking system – which consists in regulating the creation of money by making bank reserves available on demand – that underlines most significantly the inability of a central bank to control monetary aggregates at will⁵²: "It would, however, be a mistake to assume that the Bundesbank could directly use its monopoly over the creation of central bank money to keep money supply growth in the very short term ... to precisely the

⁵¹ Ibidem, p. 26.

⁵² Ibidem, p.25.

path laid down in stated monetary targets. The Bundesbank cannot directly restrict the expansion of money supply at will by allowing excessive demand from the banks for central bank funds to go unsatisfied. Nor is it in a position, by creating surplus accounts for the financial institutions, to offset too-weak demand for central bank money with such precision as to ensure that monetary expansion at no time falls behind stated goals. Rather, it is in the nature of the complex process of money creation, in which the central bank, credit institutes and non-banks all play a part, that the Bundesbank can only apply indirect influence to ensure that money supply remains within the target corridors by make appropriate adjustment to interest rates and other terms.”

It is precisely the uncontrollability of money supply, i.e. the *necessity* to satisfy the demand for money on market terms, that shows the impossibility of orienting money supply according to changes in the level of prices, as orthodox theory teaches.

Case Study IV- Bank of England today

Our third example comments the present strategy of the Bank of England. Britain’s monetary policy is especially interesting because it does not envisage any quantitative control. For that reason, it best fits to illuminate an alternative theory of money market stabilization.

The Bank of England detached itself by the early 1980s from the numerous precepts for controlling money and credit volume that other central banks to a greater or lesser extent attempt to apply. The strategy of the Bank of England (BoE) actually dispenses with the obligation on commercial banks to hold minimum reserves. BoE explains the logic of minimum reserve obligation as based on the notion that commercial banks do not require central bank money and that central banks oblige commercial banks to hold funds with them as a control mechanism to keep money supply in line with the growth in the economy.

1 -Structuring the money market and setting the interest rate

The BoE generally lends out money through open market operations. Open market operations allow the Bank to test out the market's interest rate expectations and liquidity requirements. The commercial banks have no minimum reserve obligations; they are, however, obliged to hold an estimated 1.5% of their deposit liabilities in the form of non-interest bearing "operational deposits" with the central bank.

"Operational deposits" serve primarily as an indicator of the day-to-day liquidity needs of the banking system, they are different in both extent and function from minimum reserves. Above all, deposits of this kind signal to the central bank the tightness of liquidity on the money market and form the basis for decisions about interest rate adjustments. This procedure is widely viewed as a sign of the central bank's power as a monopoly supplier. In fact, it efficiently allows the central bank to monitor liquidity needs, creating an escamotage, a test lab environment, to look at money demand from a clearer and more privileged angle, allowing prevision.

The BoE writes about how it determines interest rates, that the object of the Bank's daily money market operations is to supply to, or withdraw from, the banking system enough cash to offset the daily flows between the central bank and the commercial banks collectively. Unlike central banks in other countries, the Bank of England conducts daily money market operations. Their immediate, technical purpose is to provide sufficient liquidity to meet the market need but their significance goes beyond this: the terms on which the Bank conducts such operations signal the level of interest rates which the authorities judge appropriate to current monetary conditions. The Bank's daily techniques provide considerable flexibility and allow its influence over short-term interest rates to vary in response to market conditions. Central bank intervention in harmony with the market represents the basic underpinning of a bagehotian approach.

The BoE seems to set its interest rate neither arbitrarily nor through money market manipulation. It estimates the banks' net reserve position, whether long or short, to establish the interest rate on the basis of the supply of funds required. It is the banks'

estimate of the banking system's reserve position to determine money market interest rates. Every morning the BoE announces its estimate of the net reserve position of the banking system for the day. Based largely on expected government transactions and the BoE's maturing stock of short-term bills, these estimates signal the amount of reserves that the BoE anticipates to be supplied in order to bring the actual balances of clearing banks to the level the banks are expected to maintain. Documents also explain that while relying on market forces to determine interest rates, BoE intervenes at selected times to influence the range within which rates move.

Although the practice shows a clear-cut strategy, the Bank of England is ambiguous in its pronouncements and interpretation.

2 – The practice and its theoretical interpretation

The theoretical description of its policies and the actual practice are at variance at the BoE as they are at the BuBa. However, the gap between practice and prevailing monetary theory is not recognised. This is our topic.

The debate about the effectiveness of quantitative controls demonstrates how controversial the theory of money stock control is from the standpoint of a central bank with a major tradition.

Foot, Goodhart and Hotson discussed the issue inside the BoE since 1979⁵³. The expressed opinion tackles the question of whether the control of the "monetary base" and of "high-powered money" can be theoretically underpinned and what the practical consequences its application would have. The authors come to a negative conclusion⁵⁴: "[..] Such conclusions follow from the fact that the more tightly controlled the banking system the greater the short-term risk of illiquidity for all concerned. In the longer term, when such a system was fully established, it would seem to exhibit a certain inefficiency - with more risk than strictly necessary, balanced by larger liquidity holdings - but otherwise it could conceivably be workable. Such an approach would, however, appear to carry a higher risk of disturbances to the banking system reminiscent in some re-

⁵³ Bank of England, Research Papers, May 1979.

⁵⁴ Ibidem, P.20.

spects of those in the United Kingdom in the nineteenth century and in the United States before the establishment of the Federal Reserve System. Even under a monetary base control regime, the Bank of England would have to retain the right to use lender of last resort facilities to forestall a banking crisis, and assistance might have to be extended to individual banks more frequently than in the past. In the short run, any sudden change to the new system, with a possibly large but unpredictable increase in the demand for liquid assets in response to the increased risk perceived, would make assessment and management of the overall economic situation more difficult."

It is emphasised that sticking to and controlling the monetary base merely leads to a preference for and the maintenance of greater liquidity, without the central bank being able, in the event of credit destabilisation, to withdraw from its "lender of last resort" obligation to supply credit.

In this context, the price of a merely formal pursuit of a fixed-volume monetary policy has to be measured against the resultant inefficiency of such a policy and the costs of maintaining higher reserves. Serious pursuit of this rule ("In the short run..") is viewed, moreover, as a looming threat of illiquidity for the banking system, where each bank seeks to make individual reserve provisions: the method of money quantity control is finally revealed as promoting instability.

The basic and essential potential for instability in the demand for money when money stock is fixed is anyway not explicitly acknowledged by the BoE in its theoretical literature, as usual. It typically recognises the "lender of last resort" function but not the necessity of an open-ended money supply as the requirement for stability.

The wide ranging debate in the United Kingdom on monetary control shows the BoE is as a bank persuaded that there would be an advantage in replacing its approach to setting interest rate according to money demand by the more direct control of quantity, but is also wholly convinced that no practical basis exists for the adoption of such a system. By raising a paradox finding no solution the BoE also definitively contributes to show the non-sense in quantity theory.

The gulf between practice and theory is wide and there is an urgent need for the theoretical basis of successful monetary policy to be spelled out, so that a successful monetary policy will not be left anymore both to tradition and to the discretion of single central bank managers.

Case study V: ECB and the Lender of Last Resort function

Can the ECB act as a lender of last resort? No, it can not. With the answer conceived by its founders, the new European Central Bank passed LOLR completely to its national (central bank) partners, since it was not recognised as a part of the money market management but of the banking supervision instead.

In the run-up to the Euro the separation between ECB system and national central banks on the matter of liquidity provision has been widely explored, and some economists expressed doubts about its effectiveness.

Under Bagehot's approach, a separation of this kind means that

- the ECB's policy goal has been completely separated from the goal of providing for the system's stability, which is the only adequate central banking goal in a capitalistic monetary economy; and that
- money has once again been separated from its credit foundation, and reduced to "currency", coin, barter.

We discuss the matter with reference to publications by the ECB on the theme, and especially on the basis of two fundamental documents presenting the ECB view about financial stability requirements: "Emu and Banking Supervision", by Tommaso Padoa Schioppa, member of the ECB Executive Board, and "The Future of Banking Supervision", by ECB President Willem F. Duisenberg, both published by the ECB.

Since the ECB just begun its activity, we will limit our investigation to the analysis of its declarations, precluding to action. Its declarations' meaning is extremely significant from the point of view of the gap between theory and practice of central banking, the central matter in this chapter. The separation indirectly indicates the

measure of the role assigned by EU-member states to the ECB per statute, and consequently signals the (key) functions resting on each single national institution.

By being the ECB statute so near to the orthodox view, the discussion about it directly introduces to the following chapters, revising the definition of money function and of the central bank's role in a bagehotian perspective.

1 -Separation of central banking and banking supervision

The element of policy regarding LOLR is pivotal in the decision about the dual separation of central banking and banking supervision in the new ECB system. This separation is both geographical and functional, and was already introduced at the start of EMU-Stage Three.

For member states participating, the jurisdiction of the ECB, i.e. the Euro area, no longer coincides with the jurisdiction of the supervisor, which has to be played by nationally chartered institutions. So Duisenberg⁵⁵ "(..) banking supervision is now entrusted to institutions that have no independent monetary functions (even if they are central banks) and the Eurosystem has neither direct responsibility for supervising banks nor for banking system stability."

According to the "separation approach" the function of banking supervision has been assigned to separate national institutions, sometimes also other than the national central banks: Padoa Schioppa⁵⁶ : "Following the recent adoption by the United Kingdom and Luxembourg of the separation approach, only two of the 12 countries represented in the Basle Committee on Banking Supervision (Italy and the Netherlands) have the Central Bank as the only authority responsible for banking supervision."

The arguments leading a growing number of industrialised countries to prefer the separation approach⁵⁷ : "(..) basically point to the conflict between controlling money creation for the purpose of price stability and for the purpose of bank stability."

⁵⁵ p.4.

⁵⁶ p.2.

⁵⁷ Padoa Schioppa p.3

The above quoted sentence best expresses an extreme form of orthodox monetary theory, which has been for centuries now the only theory reference for central banking, an allegiance impeding a new monetary theory to emerge and consolidate.

2 –The central bank’s goal

Padoa Schioppa⁵⁸: “The separation approach that was chosen for EMU has effectively been applied not only to the Euro area as a whole, but to its components as well. Indeed, even in countries where the competent authority for banking supervision is the central bank by definition this authority is, functionally speaking, no longer a central bank, as it lacks the key central bank task of autonomously controlling money creation.”

Controlling money creation has been confirmed as the most effective goal for central banking, in the tradition of the currency school approach.

Consistent with this choice, the ECB presents a de-powered concept of crisis⁵⁹ “The notion of a central bank’s lender of last resort function dates back more than 120 years, to the time of Bagehot. (..) Nowadays and in our industrial economies, runs may occur mainly in textbooks. They have little relevance in reality because, since Bagehot, many antidotes have been adopted: deposit insurance, the regulation of capital adequacy and large exposures, improved licensing and supervisory standards all contribute to the preservation of depositors’ confidence and minimise the threat of a contagion from insolvent to solvent institutions.”

As we know, Bagehot effectively argues there is no difference between solvent and insolvent institutions in a panic, and he mentions no “antidotes”, no insurance against panic, since inside the illiquidity crisis money simply disappears and can not be available to the insurer as also (not) to the (commercial) banker.

⁵⁸ p.4

⁵⁹ Padoa Schioppa p.12

Credit instability continues to be reduced to the insolvency problem, due to an incorrect definition of liquidity. The ECB case points right to the heart of this element of theory.

3 -Moral hazard

The expression of fear about any eventual "moral hazard" behaviour by the banks very frequently substitutes the crisis theme, when the problem of financial crisis is faced under observance of currency school principles.

Given the premises, we are not surprised when this argument appears in the words of the ECB President⁶⁰ : "Moreover, in the event of a financial crisis, the possible provision of emergency liquidity assistance, which is the responsibility of the competent national authorities, may have an effect on the common monetary policy, which is the direct competence of the Eurosystem. To limit central bank interventions and the associated moral hazard problems, it is necessary for crisis prevention mechanisms to be in good shape. Also for this reason, the Eurosystem needs to be assured of effective banking supervision and crisis prevention. In general, the crucial issue is that the risk management systems of individual institutions guarantee their safety and soundness, and the supervisors should assure themselves of this fact."

In a bagehotian perspective different problems arise:

- liquidity has been confused with solvency and reduced to a micro-problem;
- banking supervision has been misplaced, linked to a role competing with central banking, thus no monetary solution is given to crisis, crisis is given a "technical" solution;
- considering the argument of moral hazard is irrelevant and misleading.

President Duisenberg can further fear an excess of liquidity more than instability, because his reasoning follows orthodox theory, thus lacking any autonomous and consistent approach to financial instability. Orthodoxy ignores the crisis. Bagehot vs orthodoxy must not be read as a goal's conflict "financial vs price stability", since

⁶⁰ Duisenberg p.5

Bagehot's approach to money includes goods-price stability, precisely by considering it as a monetary problem. Only, the problem is solved at the roots of monetary essence and existence: through the stabilisation of money, i.e. of trust, as the priority.

By teaching the peculiar and unique features of the money function, Bagehot reveals that orthodox central banking principles cannot be applied in reality, they are only relevant as a very well structured construct of thinking, with no relationship to real central banking. The eventual application of this theory would lead to money disappearance, i.e. it eliminates money availability.

Since successful central banking relies on the reward for trust and liquidity, we can judge the ECB statute as an extreme example of the power of orthodoxy on the theory of central banking. But also perhaps, actually, as a proof of the reduced authority granted to the ECB by its founding members in the practice of European central banking, since the bank's statute does not allow any influence on the fundamental money mechanisms in the market.

4 -How credit matters for money theory

Thus, while successful central banking in practice accords to Bagehot's view, the orthodox theory of money, apparently living a copious life and preserving the highest academic position, looks vacant. Emptied of its practical sense, it loses its authority.

So does the ECB, apparently invested with the highest goal of controlling money creation. It looks ineffectual, while the banking supervision and the old lender of last resort function, actually representing the deepest involvement into the money matter, remain within the authority of national central banks and "affiliate institutions".

This chapter argues against any money supply control, clearly stating its menacing nature for the system's stability. We search for a new macroeconomics of money.

Bagehot's work incubates the cells for a new monetary view. While the currency-school defines price inflation as the main danger and

risk a monetary system can incur in and therefore pleads for curbing money supply, Bagehot's approach shows that method is only appropriate for non-monetary economies, taking monetary economies – when ever applied - to the ruin instead.

Financial stability is the need monetary economies expresses. The essence of Bagehot's thought is a vision of the financial fragility of our system. Far from conceiving any Apocalypse of the emergency, we start evaluating the role of credit in a general and modern theory of money, following money market management.

Internationalisation, complexity, growing markets, increasingly rapid dynamics, unstoppable spread and creation of new financial instruments ask for no "separation approach", no segregation of credit, and for a clear vision of its linkage to money instead. This requires a new regard towards the basic elements of monetary theory.

We need first a new definition of a monetary economy, able to create the frame for a new macroeconomics of money.

Second, a new definition of what money is:

- a) acknowledging the function of money,
- b) separating money from other liquid financial instruments,
- c) indicating a reference parameter for defining liquidity.

Third, consequent with the money definition, we need a definition of the central bank's role:

- a) identifying its position as a bank inside the market, both different from a commercial bank agent and from a pure government institution;
- b) investigating its goal(s).

This is our agenda for the next chapters.