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THE MONETARY ORDER

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THE MONETARY ORDER

1. Proposals for a free money supply

1.2. Introduction: the existing monetary order

Monetarists, though staunch supporters of laissez-faire and competition, have never questioned the government monopoly of the supply of base money and have always stressed the need for the monetary authorities to regulate the total money supply. Where they differ from economists of a more interventionist bent is in their opposition to discretionary policies and, conversely, their advocacy of following rules. This pertains not only to monetary policy but is characteristic for their view of the role of government in general (cf Friedman 1962 Ch. 2, on The Role of Government in a Free Society). In all this they, like virtually everybody else, have taken the existing monetary order for granted.

For our purposes we may describe the existing monetary order as a two-layered system, one layer consisting of the central bank or the monetary authorities and the other made up of commercial banks. The monetary authorities provide base money, supervise the banking system and act as lender of last resort. The commercial banks run the payments system, grant credit and accept deposits. These deposits are denominated in a unit of account which is tied to the government-supplied base money. Deposits are of various kinds, one of which functions as the means of exchange. The banks stand ready to supply currency, i.e., base money, to their depositors at par. If one wishes, one might discern a third layer, made up of non-bank financial institutions. These institutions provide their clients with non-checkable deposits and other financial instruments. They themselves hold deposits in the commercial banks and payments made by their clients to clients of other non-bank financial institutions take place through the intermediary of the commercial banks.

1.2. Alternatives for the existing monetary order

Latterly alternatives have been developed for the existing monetary order, which come from two directions. There are those who advocate more laissez-faire and competition than the monetarists ever dreamt of, in a system where banks perform very much the same functions as in the present system. A second group of people sketches the outlines of a another variant of a drastically deregulated system, where the difference between banks and other financial institutions becomes

blurred and money as such hardly exists. Unlike the first group they are, one feels, not so much driven by a wish to reform the present system but first of all by intellectual curiosity.

1.2.1. Competing Currencies

The attack on the present monetary order came from Friedrich Hayek, followed by Vaubel (many publications, e.g., Vaubel 1985). One of Hayek's main preoccupations has always been the ^{debasement, debasement} ~~debasement~~ of the currency which may result, and in his view hardly ever fails to result, from the government's power over the money supply. Governments are under constant pressure to increase the money supply in order to ensure full employment or to fulfil other wishes of pressure groups (Hayek 1978b p. 21). This cannot but end in inflation (which in Hayek's analysis causes distortions in the production structure that can only be remedied through a depression). In Hayek's eyes Keynesian macroeconomics is the main culprit and in a sideswipe at Keynes he describes him as a kind of reincarnation of John Law, though he does not want to blame him for the post-war inflationary policies carried out in his name, for which, in the British case, he tends to hold Kaldor responsible instead (Hayek 1978a p. 230). Governments cannot be trusted to provide people with trustworthy money. They "have incessantly and everywhere abused their trust to defraud the people" (Hayek 1978b p. 26). Money is "a tool of government for fleecing us and for 'managing' the economy" (Hayek 1984a p. 325; 1984b p. 31).

Hayek's solution is not the abolition of the right of governments to create money, but the introduction of competing currencies (hereafter denoted by CC) or, as Vaubel (1978 p. 90) calls them, parallel currencies. In such a system different money units function in the same geographical area. Hayek does not provide a detailed blueprint of a competitive system (Fischer, 1986 p. 434, calls Hayek's proposal, 1984b, "messianic, not analytic"). That would of course run counter to his philosophy of society, which holds that competition is incomparably superior to government planning as a means to find or invent the best solution to a problem (cf Hayek 1944 and, on the subject of the monetary order, Hayek 1984a p. 324; 1984b p. 31). Private firms should be allowed to create their own kind, or brand, of money, alongside governments. Besides, countries (first of all within the European Community) should leave their citizens free to use foreign currencies (Hayek 1978 p. 225, see on this subject also the detailed study by Vaubel, 1978). Hayek expects that currency competition would hardly affect retail transactions, but would most of all bear on the

willingness to hold money (Hayek 1978 p. 227). Competition between issuers will lead to the solution that best fulfils the wishes of the public, possibly even to the use of ounces of gold (ibidem). It is worth noting that Hayek, even though for most of his life he sung the praises of the gold standard, already toyed with this idea before the second world war (Hayek 1937 p. 77, see also Visser 1989).

1.2.2. New Monetary Economics

The other strand in the clamour for freedom from state interference, known as the New Monetary Economics (NME), envisages a system where money as we know it hardly exists. NME, with Black (1970) and Fama (1980) as its main originators and Greenfield and Yeager (1983) as its propagandists, draws a picture of a financial system where banks are completely unregulated, apart possibly from the imposition of capital requirements (of course, when one looks for them, predecessors can be found; see Cowen and Kroszner 1987). There are no reserve requirements and there is no central bank. Banks create deposits as part of their loanmaking business. The dividing line between demand deposits and other liabilities of the financial institutions gets blurred. Payments are made as in the existing system by writing checks or making remittances. Deposits are rather like shares in a money market mutual or an investment fund and therefore in principle have no fixed value in terms of the unit of account.

Banks have two main functions in this system. Firstly, they provide a book-keeping system whereby claims held on them by the public are transferred from one depositor to another, i.e., they provide a payments mechanism. Secondly, they manage portfolios of financial instruments, i.e., they are financial intermediaries. The unit of account may be determined by the government (on a non-coercive basis) and may be defined, e.g., as a certain amount of a good or a bundle of commodities. It could also be left to the market to agree on a unit of account. Note that only a definition is involved; there is no convertibility into the bundle of goods making up the unit of account involved. NME is quite different from a commodity reserve standard, it is meant to be a one-layer system and the goods making up the bundle consequently need not be storable. If the unit of account is defined as a bundle of a large number of goods, prices of individual goods may of course fluctuate, but the general price level in terms of the unit of account will be quite stable. The unit of account and the means of payment are entirely separated. For some kinds of payments, currency may be more convenient than deposits. The system could be completed by the government standing ready to provide currency against payment into its accounts with the

banks.

From the viewpoint of the NME, the usual views on money supply do not apply in an unregulated environment, if only because the quantity of money is not defined. If constructs such as the quantity theory are valid, it is only in a system with government regulation and because of government regulation (cf Hall 1982 p. 1552).

1.2.3. Similarities and differences between CC and NME

The competing currencies proposal or CC and NME seem to share some characteristics. In neither system there is prudential supervision by the monetary authorities or are the banks compelled to hold deposits with the central bank. Both are meant to be one-layered systems. Where they differ is that in a competing currencies system banks create deposits in their own unit of account, whilst NME proponents tend to highly value the informational advantages of using one common unit of account, even though the media of exchange may differ. Furthermore, under CC, unlike NME, there is a clear distinction between checkable deposits and other liabilities of the financial institutions.

Aside from these radical approaches a claim could be made for the abolition of government interference in a system that for the rest is quite similar to the existing one, with the government providing coin and private banks creating money virtually without prudential supervision, much like Scotland had from the beginning of the eighteenth century till 1846. We focus on CC and NME, but will refer to such a deregulated two-layered system where relevant.

2. More on the working of free-money-supply systems

2.1. CC

Under CC, the principles of a free market would be applied to money production as it is to any other private industry. The owner of a certain 'brand' of money, say the dollar, could offer them to the public all over the world and could sell licenses to produce and sell this product. This is unlike the present situation, where Eurobanks can produce dollars without the American monetary authorities having any say in it (Salin 1984 pp. 13-'4).

Money producers would be held back from creating too much money by the fear of depositors withdrawing their funds. But Hayek admits that banks face a problem

when trying to keep the purchasing power of their deposits constant. A purchasing power guarantee of sorts is involved. This implies that the banks must stand ready to supply the public in exchange for one unit of their own money with such an amount of other kinds or brands of money as would be needed to buy the bundle of commodities which defines that unit (Hayek 1984b p. 37 ff.). Friedman rightly observes that for that guarantee to be given, the banks should hold assets carrying a fixed purchasing-power guarantee, which is hard to imagine unless governments issue securities with a purchasing-power guarantee (Friedman 1984 p. 43). A peculiar problem could arise if depositors want to change large amounts of other brands of money for one particular bank's money. That bank would be saddled with the problem of finding sufficiently attractive investment outlets for the amounts received. If it did not freely accept the other kinds of money, that would drive up the price of its own money in terms of other monies, which would make loans supplied by that bank less attractive as it would raise the real rate of interest charged. In order to keep the purchasing power of the money they create roughly constant, banks would have to adjust their deposit and lending rates or to vary the margin between the buying and selling rates of other monies.

Hayek expects that such a system would lead to a number of monies that all have a relatively stable purchasing power and are also stable in terms of each other. If they are stable in terms of each other, that would be the result of the banks' attempts to keep the purchasing power of their monies constant, not of any agreement to maintain fixed rates. Consequently, there need be no fear of the working of Gresham's Law (cf Hayek 1984a p. 326, Starbatty 1982). 'Bad' money, i.e., money which depreciates in terms of goods, will not drive 'good' money from circulation, as it will depreciate in terms of 'good' money. It is quite possible that 'bad' money stays in circulation notwithstanding this depreciation, provided deposits pay a high enough rate of interest to compensate for the fall in purchasing power.

2.2. NME

In the NME system, there would be a common unit of account. The government would not itself create money, except perhaps currency to fulfil the need for small change. Its budget deficit would in its entirety have to be covered by borrowings from the public or the banks. It would conduct its financial affairs like any other economic agent through its accounts with the banking system.

Deposits can be seen as claims on or shares in the investment portfolio of a

bank. Fluctuations in the value of the bank's investments, expressed in the unit of account, are reflected in changes in the value of the depositors' claims. Greenfield and Yeager (1983 p. 308) feel that the financial institutions could provide the public with currency in the form of shares, though it is hard to see how they could adjust the circulating shares for losses and profits. Alternatively, financial institutions could issue debt instruments with a fixed value in terms of the unit of account (Fama 1980 p. 41). The investment portfolio of such an institution could consist of relatively riskless assets or, alternatively, other depositors would have to bear a higher risk.

2.3. Money growth and the price level

2.3.1. Money growth

In a competing-currency system, there are identifiable money assets. In order to keep inflation in check, no such thing as a Friedmanian money growth rule is needed, because money issuers will in their own interest try to maintain the purchasing power of their monetary liabilities. In a NME world, the very idea of a money growth rule, or of any other way of monetary control, is irrelevant, because the dividing lines between money and other assets are fluid (cf Yeager 1985 p. 103).

2.3.1. The price level under CC

An interesting question is whether in a deregulated system the price level would be determined. It is conceivable for the price level in a one-layer system to be indeterminate. Such was the case in the pure credit or inside money economy as described by Wicksell (1965) and Gurley and Shaw (1960 p. 253 ff., cf also Visser 1974 pp. 138-'40, 150-'1)), where banks can, by lending at rates differing from the natural rate, i.e., the equilibrium rate of interest at which the volume of savings equals the volume of lending, make the price level rise or fall without limit (apart from the lower limit of zero, of course). In a one-layer system, credit expansion is not restrained by a demand for currency from the part of the public. It is conceivable that competition between banks, with the public preferring deposits with a constant purchasing power, would suffice to prevent wild price fluctuations from occurring. If, though, deposits carry competitive interest rates, in the sense that the rate paid on deposits whose value falls in

terms of other 'brands' of money fully compensates for that fall (and there are no distorting taxes), the price level does indeed seem to be indeterminate.

2.3.3. The price level under NME

Under NME, deposits with banks are claims on a fraction of the bank's investment portfolio which will generally have a fluctuating but not systematically rising or falling value in terms of the standard bundle defining the unit of account.

McCallum (1985 pp. 35-'6) expresses the fear that, if financial institutions bring notes into circulation, they will be tempted to issue these to excess. Notes can hardly be imagined to carry interest. By issuing notes financial institutions have at their disposal a cheap means of acquiring interest-bearing assets. Prices, even those of the standard bundle, would rise in terms of the unit of account. Put differently, the unit of account would be at a discount in terms of the standard bundle. But is not the summed value of a bank's liabilities, expressed in the unit of account, equal to the market value of the bank's investment portfolio? Any excessive issue of banknotes with a fixed nominal value will be at the cost of the value of the deposits or claims on, i.e. shares in, the investment portfolio. Contrary to McCallum's view, it seems that an excessive note issue need not put the standard bundle's use as the unit of account in jeopardy. It may be expected, furthermore, that the depositors and shareholders of an over-expanding bank will correct its management or that depositors will withdraw their deposits, which will force the banks to shut up shop if they refuse to mend their ways.

2.4. Is a one-layered system conceivable?

A one-layered system as described above is unlikely to spring up under laissez-faire. Both under CC and under NME, financial institutions need a means of payment to settle net positions vis-à-vis each other. As for NME, Greenfield and Yeager (1986 p. 848) draw a picture of claims being settled at a clearinghouse with "issuers transfer[ring] not quantities of the standard bundle itself, but redemption property worth as many standard bundles as the number of units to be settled". But what makes up that redemption property? It may mean claims held by one bank on another, but banks will only be willing to open credit lines to other banks on a limited scale. It may also mean financial assets held by the remitting bank as part of its investment portfolio. The latter solution is suggested by Greenfield and Yeager (1983 p. 307), though they hardly address the

question seriously. But that might imply relatively high transaction costs, not least because one bank's preferred portfolio differs from another bank's preferred portfolio and negotiations are needed for each transaction. Problems would also arise because the prices of the securities fluctuate over a day and the parties involved could try to influence them (White 1986 p. 851). It is highly probable then that one type of asset evolves into a dominant money, be it a currency created by a monetary authority or gold or other commodities; and in that case we are back with a two-layered system. The dominant money will be demanded by the banks as reserves against deposits. As a dominant money arises precisely because banks feel a need for a means of exchange with a fixed nominal value, prices will be expressed in terms of that dominant money. The price level may fluctuate again, depending on the demand for and the supply of the dominant money. A stable supply of the dominant money does not guarantee a stable price level, though. Shifts in the proportion of transactions conducted with deposits relative to those conducted with currency may very well occur (Helpman 1983).

Under CC a dominant money is likely to arise for the same reasons as under NME. As a 'brand' of money with a stable purchasing power will be preferred, there is no question of an undetermined price level.

3. Claimed benefits of a free money supply

3.1. NME

Advocates of a free money supply claim that it does away with a number of the problems plaguing economies with a heavily regulated two-layered financial sector. In the NME case this is because money as we know it no longer exists, whilst the disadvantages of a barter system are yet avoided. Greenfield and Yeager (1983 p. 308 ff.) cite the following advantages:

- (i) There would be a stable unit of account, which has obvious benefits for borrowing and lending, calculation etcetera.
- (ii) The government would come under financial discipline. It could no longer resort to inflationary finance.
- (iii) Unrestricted competition between financial institutions would exert discipline on them and would provide the much-vaunted spur to innovation which in Hayek's view is what characterises a market economy, whilst wasteful attempts to get around regulations would be a thing of the past.
- (iv) The absence of base money, i.e., a one-layered system, would bring more stability to the financial sector. There would no longer be multiple contractions

or expansions of the money supply in response to changes in the base money supply. Nor would there be runs on banks on the scale seen before the introduction of deposit insurance (in this respect there would not be much difference with the present situation). Put differently, there would be no 'internal drain', i.e., no substitution of bank money into base money. Runs on badly-managed financial institutions could of course occur, but these would not spread to other institutions (again not much different than the existing situation, where the central bank fulfils its role as a lender of last resort in accordance with Walter Bagehot's famous advice to the central bank to lend readily in times of panic, cf Bagehot 1920 pp. 48, 298).

(v) With the disappearance of money as a clearly defined separate entity, macroeconomic monetary disorders would disappear as well. There could be no excess supply of or excess demand for money rocking either the general price level or the level of real activity.

3.2. CC

Hayek's competing currencies world lacks a common unit of account, but units of account could be stable. Individual banking firms may fail and its depositors may suffer a loss, but creditors holding claims on other economic agents expressed in the unit of account in which the failed bank's money was expressed, do not see the value of their claims impaired (Hayek 1984b pp. 40-'1). The credit system would not suffer, therefore. Governments would under CC come under financial discipline, too. If the government resorted to inflationary financed budget deficits, the money it created would rise in volume and fall in value and consequently run the danger of being driven from the market. Vaubel (1985 p. 550) believes that competition between central bank monies could help to abate inflation in still another way. People in inflation-ridden countries would hold their governments responsible for the fall in the value of money, both in terms of purchasing power and in terms of other currencies. For these effects to occur it does, however, not seem necessary to allow full-fledged currency competition. The third and the fourth points in favour of the NME system would go for the competing currencies case as well. Though Hayek does not expect a blurring of the boundaries between money and other assets, his system might conceivably be less prone to macroeconomic disorders from monetary sources than a two-layer system. Multiple money supply expansions and contractions in response to changes in the base money supply are of course absent. Substantial changes in the volume of any type of money in circulation will not have far-reaching consequences because

holders would fear a fall in the purchasing power of the money concerned or, in the case of a contraction, debtors would fear a rise in the purchasing power and in both cases a substitution by other types of money would follow. As for financial crises, the same claims as in the NME case can be made.

4. Objections to a free money supply

4.1. Economies of scale in the use and the production of money

On a very general level, a case can be made for the abolition of government regulation if the means of payment can be seen as in no way different than other goods. But that is a very big 'if'. In a way money as a means of payment resembles a telephone exchange, and the use of money as a unit of account resembles a language. Comparisons like these suggest that a kind of monopoly might be useful (cf Hellwig 1985 p. 572). This concerns external economies in the use of money. With more people using a certain type of money, the utility of using that kind of money increases. Increased use of a certain type of money tends to reduce its transactions costs, including information costs (e.g., Brunner and Meltzer 1971; Tullock 1975). It is much easier to have to use one language than several languages; anyone who has experienced the American telephone system will understand that it is easier to live with one network than with a higher number. More currencies mean more transaction costs, prominent among them information costs, the more so if exchange rates between the various currencies are not well predictable. These costs include the costs of investigating the solidity of the money supplier (Illing 1985 p. 124). People may be of course be interested in investing their wealth in financial instruments denominated in different units of account, in order to better spread their risks. When they are free to do so, as they are in a number of countries, that does not imply the use of various types of money simultaneously as means of payment (which Hayek admittedly did not expect).

Another question is whether there are economies of scale in the production of money. Such internal economies of scale would imply a natural monopoly. The disappearance of very small banks suggests there are, but probably only over a certain range. Nor do they seem to be very strong (see for empirical research Benston 1972, Gilbert 1983, Humphrey 1987).

In a completely deregulated system, another aspect comes to the fore. With no lender of last resort, economic agents will be more careful in choosing a financial institution with which to hold their deposits. Those institutions will

have to invest in creating a good name, in what Claassen (1984 p. 51) calls the quality of money, first of all by good behaviour, but bigness also helps to create confidence. That too acts as a restriction on competition.

4.2. Money and a government monopoly

Even if money were a natural monopoly or if economies of scale in the use of money would justify a restriction of competition, it does not follow that a government monopoly is called for. The government may instead regulate a private monopoly or auction a monopoly license. In a two-layer system as we know it the government of course only has a monopoly for the supply of base money. In a one-layer system a natural monopoly might induce the government to throw up impediments to other potential suppliers. However, we do, as Hayek and Vaubel stress, not know what an optimal type of money looks like, and a government monopoly denies the market the possibility to find out which solution is best (cf Vaubel 1984a pp. 46-'7). If the government does have a natural advantage in the production of money, that should become apparent in the market place, without restrictions on entry for other potential producers and without subsidies for the government money supplier (Vaubel, *ibidem*).

4.3. Instability

Another moot point is the claim that a lender of last resort is superfluous under free money supply. Is it really that far-fetched to imagine that a failure of one banking institution could lead to runs on others? Banks have an obligation to supply other brands of money in exchange for their own brand on demand. If banks hold claims on other banks, a failure would obviously undermine their solidity in the eyes of the public. Banks that do not hold claims on a failed bank might be affected as well. The result would be a scramble for currency provided by the monetary authorities, if that is available. In other words, a classical internal drain would occur; a typical case for central bank intervention. In a system without currency provided by the central government, however, the public would have no choice but to stick with their deposits, though they might try to substitute deposits held with a bank deemed to be in danger for deposits held by a safer one. A case can be made for the proposition that, if there is a danger of a panic spreading to many financial institutions, rational bank managers would decide to help their brethren in difficulty. This happened in Scotland under the very free banking system in force before 1846. When the Ayr Bank failed in 1772, two of the three big banks announced that they would accept the notes of the

failed bank, which helped to avert a panic (Gorton 1985 p. 270). For such measures to be taken, probably a small number of big institutions must exist, which each of them can to a large extent internalize the benefits from a rescue operation or that can easily act in concert.

With various currencies vying for the public's favour, there is a danger of another kind of instability. The confidence of the public as regards the future purchasing power of a currency may be weakened or increased by a multitude of causes. This may lead to erratic behaviour of the exchange rates between the currencies, like we have seen on international currency markets after 1973. Hayek, however, expects exchange rates under CC to remain quite stable and it is, indeed, quite conceivable that money suppliers seek to create confidence in their products by guaranteeing convertibility into another currency or other currencies at fixed rates. But this makes the emergence of a dominant currency probable, or a small number of dominant currencies, each one concentrated in a certain geographical area. In that case we are back with a two-layered system, which might consist of a few blocks of currencies, cutting across national frontiers.

Deposit money is created by a stroke of the pen, or by touching a few keys on a keyboard. Is there no danger of private money suppliers trying to expand money production to the point where marginal revenue equals the putative zero marginal cost, one might well ask. The answer is no, because the marginal cost of overexpansion, in terms of loss of confidence on the part of the public in the stability of the purchasing power of money, is very high. Banks then have only an incentive to overexpand if the monies produced by the different suppliers are indistinguishable homogeneous products (identical notes and coins). In that case they can reap the benefits themselves and shift the costs for the most part to others (but if every bank acts in this way, they will ultimately all suffer). The public will only be willing to hold a bank's liabilities if the bank has created sufficient confidence in its product. For this it must have a clean record of non-inflationary money creation and, especially at entering the business of banking but later as well, it must hold a supply of other means of payments and stand ready to convert the public's deposit holdings on demand into other kinds of money or financial assets or even bundles of commodities (cf Klein 1974 p. 434).

There remains the possibility that banks in a Hayekian world first create confidence, and next use the good name they have created to harvest a rich profit by suddenly expanding the volume of their deposits, such that a non-expected high rate of inflation follows. This phenomenon is called dynamic inconsistency. A bank will only act this way if the short-term profit expected from deceiving the

public outweighs the resulting long-term loss from eating into its 'brand-name capital'. With the public having the choice to demand other currencies at will, such behaviour can, however, never be long drawn out. The money issued by an over-expanding bank depreciates not only in terms of goods but in terms of other currencies and clients defect to other banks. Or, with fixed rates of exchange, other banks see their claims on the over-expanding bank increase and demand payment. The over-expanding bank is in this way forced into discipline or fails. In the latter case, depositors lose their money. There will always remain a principal-agent type of problem in the relationship between a bank and its clients (as stressed by Illing 1985 p. 125 and Summers (1983 p. 161).

4.4. Further objections

The separation of the unit of account and the means of payment under NME may not be to the public's liking. Claims on a part of a financial institution's asset portfolio vary in value, which is nothing else than that the value of one's balance with a financial institution fluctuates in terms of the unit of account. In other words, the public may prefer to hold demand deposits; which, as we have seen, the financial institutions could provide along with other liabilities if part of the public is willing to run higher risks. Another point, advanced by White (1984 p. 707) is that a payments system with demand deposits is probably much cheaper to run than a payments system where shares in mutual funds have to be transferred.

Finally, if there are more money suppliers, there is a greater danger of counterfeit, which creates higher social costs. In a NME world, where the importance of banknotes and coin is played down, this problem is more or less assumed away. In a competing currencies system the problem cannot be ignored, though it is doubtful whether it would be more serious than the present situation where bank branches accept foreign banknotes. After all, entry barriers would be quite high, because first the necessary trust must have been built up before an institution can create money on any large scale. The total number of money suppliers would, therefore, not be very high and some of them might choose to supply money denominated in a common currency.

5. Concluding remarks

5.1. Deregulation and inflation

It has been claimed that the devaluation of money is a result of governments pursuing ill-conceived short-term macroeconomic aims (apart from Hayek, see also Tullock 1975 p. 497). This in itself does not seem sufficient reason for a shift to NME or CC. Free financial markets imply competition in the sense that economic agents are free to choose any currency for their payments, investments and contracts. But competition between currencies might still remain within the boundaries of a two-layered system with government-created base money. The problem then remains of how to keep inflationary policies by the monetary authorities in check. If, as has been argued, the seat of the trouble is the short time-horizon of the policy makers, one solution is to leave monetary policy with people who have a vested interest in keeping inflation low. This is an argument in favour of having relatively independent central banks, as in Germany, Switzerland and the Netherlands. Central bankers generally are judged on their success in keeping inflation at bay. Moreover, their tenure generally is longer than that of cabinet ministers, so they are less likely to pursue expansionary policies and saddle their successors with the resulting problems.

From this point of view, there do not seem to be compelling reasons to forbid experiments with private financial institutions supplying money with a more stable purchasing power. Indeed, in many countries banks are free to do so. The private Ecu is a point in case. Experience suggests that such alternative monies will not play a great role. Even in the turbulent 1970s the public was not much interested in deposits denominated in units devised by private banks (Lomax 1983 p. 274). Freedom of choice for the public may help, though, to stimulate good behaviour by the government or at least to give economic agents the opportunity to shift to other currencies. Friedman (1984 p. 46) cites the case of Mexico, where the share of the US dollar increased from 5 per cent to 20 per cent within a short period of time as a result of inflation.

5.2. One layer or two

It is highly probable that under a free money supply of the CC kind a two-layered system would remain, not only domestically but internationally as well. In an unregulated system, both private and official money suppliers may try to impart confidence in the money they create by guaranteeing convertibility into a

dominant money with a proven low tendency to loose purchasing power, i.e., in a European context, for all practical purposes the Deutsche Mark. Besides, a wish to save on transactions costs would see to it that transactions between currencies would be routed via a third currency, just as in the present-day world, where the dollar still is the dominant vehicle currency (cf McKinnon 1979 Ch. 2). There would be no need to confer a monopoly on its suppliers. Whether they remain dominant depends on their good conduct. The possibility for the public to switch to another currency may act as a spur to governments of inflating countries to put their monetary house in order, as they loose seigniorage income from money creation if domestic money is crowded out, an important consideration especially for economically less-developed countries (Fischer 1982).

It is doubtful if a NME system would completely do away with a two-layered system either. Financial institutions have to make payments to each other and feel a need for a financial instrument with a fixed nominal value. It is also hard to conceive that the public would be willing to renounce the benefits of a means of payment with a fixed nominal value or renounce the right to convert bank deposits into currency. Again, a dominant money may surface and we are back with a two-layered system, which was the villain of the piece in the first place.

Free banking would not result in a system that differs significantly from the present one, because it would remain a two-layered system (cf Selgin and White 1987). That does not mean that central banks would spring up automatically. Banks might cooperate in running clearing houses, much as Ecu-banks have created their own clearing institution. Those clearing houses might evolve into a lender of last resort, but they would not conduct monetary policy. Some prudential supervision is conceivable too, as the clearing houses might only admit as members banks observing a certain minimum capital ratio.

5.3. Prudential supervision, the lender of last resort and monetary policy in a two-layered system

Free banking in the sense of absence of prudential supervision is a distinct possibility, as was shown by Scottish history for the case where a small number of relatively large institutions cooperate to ensure the stability of the system. It is, however, not clear what welfare gains that would create. There does not seem to be convincing evidence that banks can always completely do without supervision, cf the secondary banking crisis in the United Kingdom in the early

1970's and the 1981 financial crisis in Chile (Harberger 1986 p. 237, Corbo and De Melo 1987 p. 137), let alone the American banking crisis in the early 'thirties, when the Fed just let it run its course. This seems, however, more a problem in a fixed-rate world than in a flexible rate world. If banks do not have the obligation to change their liabilities at par in another kind of money, the value of their liabilities will fall without a liquidity crisis taking place, rather like a fall in the foreign-exchange value of domestic currency. As Hellwig (1985 p. 583) observes, economic theory has too little to say on these matters to warrant any firm conclusions on the question whether government regulation of the banking system and the production of inside money should be abolished.

History nevertheless suggests that a two-layered system cannot easily do without a lender of last resort. Kindleberger (1978 Ch. 11, 1987 pp. 294-'5) makes much of the role of the lender of last resort in providing stability to the financial system. In the international sphere, this implies a hegemonic power whose currency will probably function as a dominant money; in the national sphere it means a central bank or an institution set up by the financial institutions jointly. In a system where the liabilities of one institution are to be exchanged at par for those of another one, such an institution is next to indispensable. Where there is no obligation to maintain fixed exchange rates such an institution can help to prevent erratic exchange rate fluctuations. With a government currency most probably assuming the role of dominant money, one cannot bank on the self-interest of private bankers for maintaining the purchasing power of money (if that is and remains the overriding objective). Wherever a dominant money arises, it is imperative to conduct some form of monetary policy, as it cannot be assumed that the system automatically produces just the correct volume of dominant money to ensure price stability (or any other objective).

5.4. CC and NME: a final view

Experiments like those proposed by Hayek do look feasible. Given the increasing liberalisation of financial markets competition between various national currencies may well intensify. This can happen without a radical transformation of the present system, which is undesirable anyway. To take a leaf from Hayek's book, the present system is the result of a development spanning centuries rather than decades. It should be open to further evolution, but a radical transformation could only do harm. It seems likely that, with a move to a competing system, the public will prefer an existing currency with a stable purchasing power to a new currency created by a private institution. This, how-

ever, is no reason to prevent them from trying.

The world pictured by NME seems unlikely ever to emerge. Apart from being unrealistic in its assumptions about the preferences of the public, it seems theoretically flawed, at least in the version as presented by Fama (1980). In his model, anything can serve as the unit of account. The system would work as a Walrasian system in which the real sector determines relative prices and financial institutions have no power to influence the general equilibrium. Illing (1985 p. 116) argues in his critique of this model that perfect capital markets do not provide the right framework for analysing banks, just as the Arrow-Debreu intertemporal general equilibrium model leaves no place for money. With a perfect capital market, the public does not need the banks for providing finance (cf Hoover 1988 pp. 157 ff.). Debts can be settled by a direct transfer of financial instruments from debtors to creditors and even the payment mechanism provided by Fama's banks seems superfluous.

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