

1. The costs of hiring a worker or of the benefits of employment are more than money wages. They include the provision, by the employer, of medical insurance. This has become more expensive relative to all other goods and services and so has been an important factor holding down the growth in real money wages. The cost of medical insurance comes out of wages.

CHAPTER TWELVE

MONEY MATTERS

Monetary Policy

Reference has been made to monetary policy and the use central banks make of interest rate and money supply changes to influence demand. The interest rates that central banks control directly, are their own lending rates, that is, the rate of interest at which they are willing to supply cash directly to the banks. This is known as the discount or rediscount rate. This is because banks, when they raise cash this way, usually have to present the central bank with financial securities — typically, short dated government bills which will then be discounted for cash or which will serve as collateral for a central bank loan. The discount is the difference between the value of the asset at maturity, and the cash received today, which can be converted to a rate of interest or a discount rate. The central bank may also enter into a repurchase agreement with a borrowing bank. That is, agree to buy a security from the bank and sell it back later at a price agreed to now. This price then determines the repurchase or repossession rate.

The central bank also supplies cash to the system on its own initiative, by buying securities and foreign exchange from the

banks and other financial institutions and dealers in the open market. It may also take up a new issue of government securities in exchange for cash.

If, as is often the case, the central bank acts as banker to the government, the supply of cash to the private sector will also increase as the government spends the proceeds of tax revenues or debt issues. As the government writes its cheques, cash flows out of the government account into bank accounts with the central bank. If the government departments are just another deposit account with the private banks, then, as with any bank customer, the cheques written on one account, in this case the government account, end up as deposits in another private account, usually with some other bank. There is then no outflow of cash from the banking system. The banking system also loses and gains cash when there is either a net inflow or outflow of notes from or to the banks' customers, or when the central bank buys or sells securities, or foreign exchange.

A central bank is almost always able to force the banks to ask for facilities, or generally to force up short-term rates of interest, by selling securities to the customers of the banks from its own portfolio. If the intention is to relieve upward pressure on short-term interest rates, the central bank may buy rather than sell securities, and so enable the banks to repay their loans to the central bank, or build up their cash reserves. The close links between the central bank and the commercial banks, and between these banks and all participants in financial markets, means that short-term rates of interest generally follow the lead given by the central bank. Long-term rates may or may not follow, depending on expectations of inflation. If the rise in short rates is taken to mean less inflation over the long term, long-term rates may well come down, even though short-term lending may have become more attractive.¹

The origins of central banking

The essential power of the central bank rests in its monopoly of the supply of notes, granted to it by the government and by the deposits that banks are forced to keep with the central bank.

These deposits, together with the notes they hold, constitute the cash reserves of the banking system.

Central banks were originally given such powers over the money supply so that they would be able to act to prevent a financial crisis. This occurs when there is a crisis of confidence in the banks, or other financial institutions; and so deposit holders rush to the banks to demand their cash back. Banks, as are all borrowers who borrow short and lend longer, are vulnerable to a run for cash. A panic-induced demand to cash in deposits from one bank, can easily spread to all banks, even the most carefully managed ones. If so, the sudden attempts by all banks to get at cash, by calling in their loans and by selling other securities and assets which they hold, will cause a collapse in the value of all assets. These forced sales would have devastating effects on balance sheets generally, and so on the willingness and ability to spend. An economic crisis is bound to follow a major financial crisis.

A sudden loss of confidence in any financial institution or market will lead to withdrawals and forced sales of securities, forcing prices down. If the assets and liabilities are perfectly matched, as for example with a mutual fund that holds shares, then the value of the assets of the savers, which are the liabilities of the financial institution, decline at the same rate. Bankruptcy will not be threatened, but the decline in the wealth of the mutual fund holders may be very serious for the economy.

Central banks can prevent such an implosion of financial markets and their destructive influence on the real economy, by being able to supply unlimited supplies of cash when only cash will do to relieve the anxiety of depositors. This was the essential idea used to justify the establishment of central banks. The Federal Reserve Bank system of the USA was set up in 1913.² The first central bank, the Bank of England, was established as a private bank in the seventeenth century, when it was given a monopoly of the note issue in London. The Bank evolved its supportive central banking functions in the course of the nineteenth century, and so became the example other countries followed.

When deciding to protect the system as a lender of last resort, a

central bank still has to exercise judgment about the terms upon which the relieving cash is supplied to the banks or other financial institutions in trouble. It will help most easily when it believes a bank, through no fault of its own, has been subject to a run inspired by some false rumour and when such a run threatens the whole system. If the bank has got itself into trouble through unwise lending practices, it may be inclined to protect the depositors for the sake of stabilizing the system, but is unlikely to want to protect the shareholders of the failed bank. But the central bank may also want depositors in general to be reminded of the wisdom of being cautious with their savings, with the result that sound banking practices are encouraged and lead to their appropriate rewards. Thus there is always a fine line to be drawn by the central bank between supporting the financial system or an individual bank in a time of crisis, while not encouraging imprudent banking and lending generally by doing so. This means in practice that the depositors in big banks, and sometimes their shareholders too, are too numerous and politically important to be made an example of. Smaller banks are much more vulnerable. So, until they get big enough, small banks have to be above reproach if they are to survive. This makes it much harder for them to compete with the big battalions for the public's cash.

Sometimes, as with the Savings and Loans crisis in the USA in the Eighties, the problems can get too big even for the money issuing powers of the central bank. The government's tax base was used to rescue depositors in the Savings and Loan banks, at a cost once estimated to be as much as US\$200bn. These S&Ls are the equivalent of building societies or mortgage banks, in other countries. In the USA, in addition to the support and surveillance function provided by the Federal Reserve Banking system, a system of compulsory deposit insurance protects small depositors against banking failures. It should be appreciated that regulation of banks in the USA has prevented the formation of a large branch banking network such as is found almost everywhere else. In the USA, the banking system consists of an extraordinary number of mostly small, deposit-taking banks.

The US government, in fact, had to rescue its own deposit insurance system from bankruptcy, because of the large numbers of failures of Savings and Loan banks. They failed, because they

borrowed short at variable rates and lent long at fixed rates. As a result, when the inflation of the seventies, coupled with the deregulation of deposit rates, forced up short rates dramatically, it largely bankrupted the system. If banks could match the maturity structure of their liabilities and assets, they would be less exposed to risk. They would also then offer lower returns to their shareholders.

In addition, there were many examples of abuse of the system, on the "heads I win tails you lose" principle. Many S&Ls undertook reckless and sometimes fraudulent lending.³ If the gamblers succeeded, the owners would benefit. If they failed, the depositors were protected anyway. With none of their wealth assumed, correctly, to be at risk, the insured depositors did not have to concern themselves with the lending practices and solvency of their banks.

Power and power corrupted

Central banks, with their power to supply cash, can clearly help stabilize the system. But such power over the supply of money can obviously be abused by governments. Governments can avoid raising taxes, or raising interest rates to finance their expenditure, by getting their cash cheaply from the central bank — that is to say, by having the central bank print notes, or create deposits, in exchange for government bonds that offer an artificially low rate of interest. The conventional approach to the danger of governments inflating the money supply, is to attempt to entrench the independence of the central bank so that they can say "no" to governments and to higher inflation.

Another alternative, though one without any ground-swell in its favour, would be to allow competition in the issue of notes. If private banks were able to issue notes — as they once did, and did so prudently — and therefore avoided over-issuing their own notes, which it would be in their interest to do, it would be possible to substitute private for public money. If banks over-issued, they would have to convert their own excess notes into cash, or somebody else's notes. If the government were then to over-issue, the official currency would be devalued against pri-

vate moneys. The rate of exchange of government into private money would decline. Such devaluations would perhaps have political consequences and discourage excesses by the government bank. More importantly, the availability of good substitutes for an inflating official currency would minimize the damage it causes. In times of high inflation, economic actors do turn away from domestic to foreign money, as both a way of transacting business and making contracts.

This is a form of competition between moneys usually inhibited by exchange controls. Clearly, a government that will resort to inflation is a government that will try and force its citizens to hold its own paper. Again, it comes back to the decisive political influences. Freedom from exchange control to hold and use a foreign currency, and freedom to issue substitutes for government money, may inhibit governments from resorting to printing money. But if governments are determined to issue money, because sound financial practices are too politically difficult for them to follow, nothing will stop them from doing so other than politics itself.

The transmission of monetary policy to the real economy

Central banks use interest rates to control the supply of money. They regard both interest rates, being the price of their cash, and the supply of cash and money, including bank deposits, as important for spending decisions. They may also indicate annual money supply targets that the bank is meant to achieve, by way of appropriate adjustments of interest rates. The typical money supply target is set by the central bank with the short-term outlook for the economy and inflation very much in mind. Higher growth targets are likely to be set if the economy needs help and lower if inflation is seen as the problem. If, then, actual money supply growth rates threaten to breach the target range, short-term interest rates will be increased. If money supply growth rates are tending to fall below the target, this would then call for lower interest rates to encourage demands for bank and other credit, and for cash. The threat to the money supply target may then be used as a leading indicator of interest rate changes.

The influence of interest rates on spending, through the cost of borrowing and the reward for saving, is perhaps obvious. The direct influence of money on spending is perhaps less so. Cash, or its close substitutes, cheque deposits at banks, are considered to be part of an appropriate mix of assets – part of the wealth portfolio. As they do with other components of their portfolio, households and firms will choose to hold just enough cash, or its equivalent, not too much and not too little, to facilitate their transactions in the market place for goods and services and for financial securities. Should the central bank introduce more cash into the system than they wish to hold, they get rid of the excess supply of cash in two ways. They either buy more goods and services, or they buy more financial assets. If they choose the first option, they affect the suppliers of goods and services directly. If they exchange their, now excess, money holdings for extra financial securities, they effect their prices and yields and investment and consumption demands indirectly, as discussed previously.

For this reason, changes in the supply of money have proved to be a very good leading indicator of the state of the economy and inflation. Any sustained increase in prices anywhere is associated with more money. Without an increase in the supply of money, increases in demand for goods that drive up prices cannot be sustained. Again, cause and effect must be clearly separated. If total demand rises because economic actors are getting rid of excess supplies of money, then given the limits placed on increasing the real supply of goods and services, prices must rise.

The rise in prices rations out the available supplies to those most willing to pay the price and so eliminates the excess supplies of money. With higher prices, firms and households need to increase their working stock of cash and so increase their demands to hold money accordingly. The process of rising prices would then end there, unless still more money is introduced into the system. If so, the process of rising prices continues. The opposite holds for a deflation, when prices in general are falling. If economic actors wish to hold more money, they will have to spend less in order to do so, and prices will fall until they are satisfied with their holdings of cash. Again it is not the quantity of money, but the real, or purchasing-power-adjusted quantity of money that counts. If the authorities wished to avoid falling

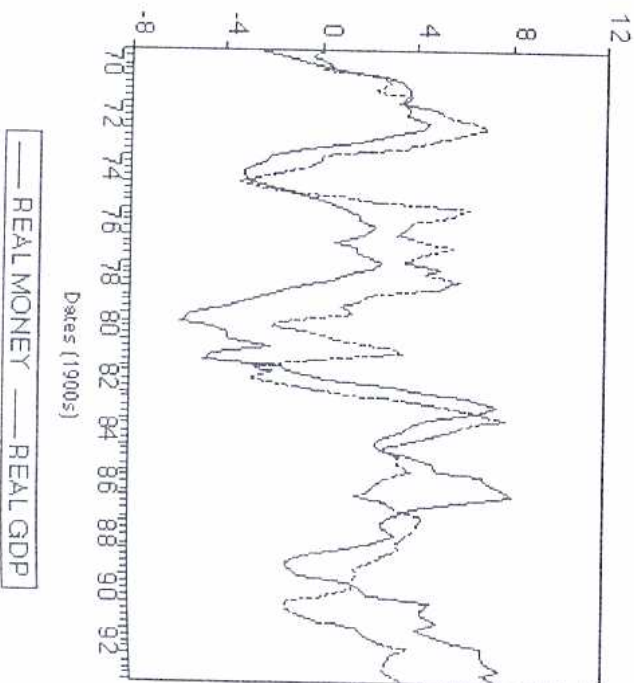
prices, when the demand for money is increasing, they could supply more money to the system in order to satisfy the increased demands for money.

Money as a leading indicator

The relationship in the USA between the growth in the real money base, known as $m0$, and the real economy, is indicated in Figure 21. As may be seen, the turning points in the real money cycle often lead the turning points in the business cycle. Real money supply growth leads the economy out of the recession of 1981, and it falls back before the economy out of the recession of 1983. The turning point, signalling a recovery in 1990, was preceded by strong growth in real money in 1989 which was interrupted in late 1990. The recovery in the real money cycle then again resumed strongly in 1991 and 1992 and clearly helped to pull the economy firmly along with it in 1993. The great concern in early 1994 was about the inflationary potential of what became a very strong economic recovery which, it was assumed, could not

Fig. 21

GROWTH IN REAL MONEY($m0$) AND GDP



continue at that pace. The brief set-back in money supply growth in 1990, indicated in the graph, can be held responsible for the hesitant recovery that dates from late 1991. The one recent period when the real money cycle would not have served as a good leading indicator of the state of the economy was in 1986. Then, economic growth rates declined, despite the previous recovery in the money cycle that began in 1984, and which only reversed itself in early 1987. It is perhaps of interest to note that the decline in real money growth in 1987 was interrupted briefly when the Federal Reserve Bank increased the supply of cash to counteract the stock market crash of October 1987. This was classic central bank intervention, but, as may be seen, was not enough to reverse a strong negative trend.

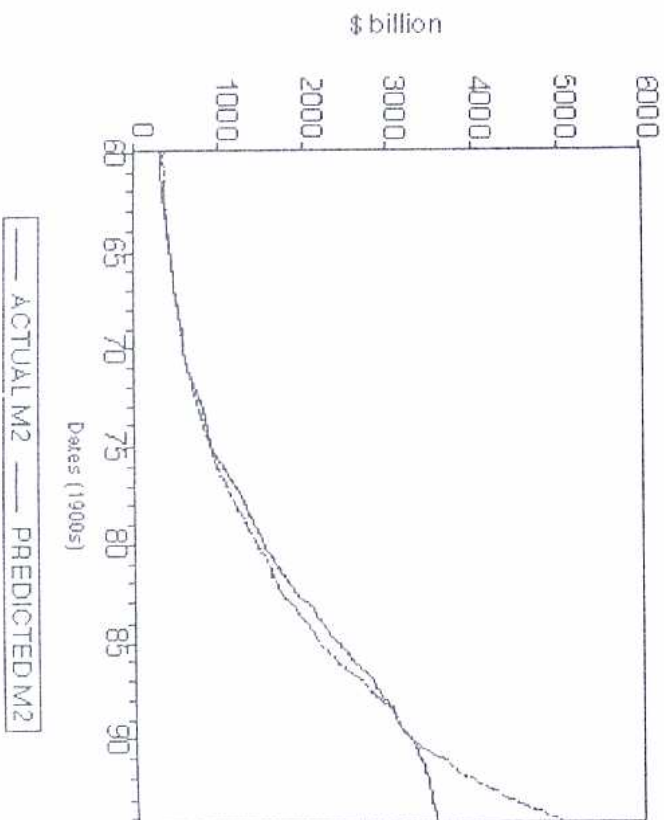
Given the involvement of central and other banks in the money supply system, the money supply shock that gets the money cycle going may well originate with the customers of banks, rather than with the central bank. Customers may wish to borrow more from their banks. The banks may then wish to satisfy them and will in turn borrow more cash from the central bank. If the central bank fails to anticipate this greater demand for cash, and so does not raise interest rates far enough, money supply growth will then accelerate in response to extra demands for cash from the banking system. It is quite possible for the central bank either to underestimate or overestimate the strength of the economy and so the demand for credit and, by not adjusting interest rates soon enough, this will reinforce the forces pushing the economy up or down. Then when the economic truth is known, the subsequent adjustment of interest rates, necessary to restore stability, will have to be a larger one.

Should the central bank be too optimistic about the state of the economy, interest rates would be set too high and the money supply would grow too slowly for the good of the economy. It should be recognized just how important it is that a central bank makes accurate forecasts of the state of the economy. If it is unable to do so, then its policies may prove to be highly destabilizing. It could be adding too much money when the economy is performing unexpectedly well, and too little should the central bank have forecast higher growth rates and demands for bank credit than in fact materialized.

We have concentrated the discussion here on the narrowest possible definition of money, being cash in the hands of the public or the banks. Bank deposits are a substitute for cash. The supply of commercial, or clearing bank deposits, is closely linked to the supply of cash made available to the system by the central bank. The supply of deposits can grow faster or slower than the supply of cash if the public comes to prefer notes to deposits or the other way round. Deposits may also grow faster or slower relative to the supply of cash if the banks reduce their own demands for cash or if the central bank allows them to do so by reducing the cash reserve requirements of banks. There are times, therefore, when a wider definition of money, one that includes bank deposits, may provide a better predictor of the state of the economy than the supply of cash, the so-called m_0 . This is defined as the notes issued by the central bank which are held by the non-bank public and the cash reserves, over and above those held as compulsory reserve requirements, held by the banks.⁴ There are wider definitions of money, m_1 , m_2 or m_3 , which are much larger than m_0 because they include different categories of bank

Fig. 22

PREDICTING WIDER MONEY FROM NARROW MONEY



deposits;⁵ they may behave somewhat independently in the short run and give better predictions of the state of the economy. They may capture what is happening to the demand for money as well as the supply of money.

In Figure 22, we show the results of an equation that estimates m_2 for the USA, using m_0 as the independent or explanatory variable to predict m_2 . As may be seen, the fit is generally very close, though by the end of 1992, actual m_2 had fallen below the levels predicted by m_0 . As a result, in 1992, m_2 did not predict the recovery of the economy in 1993. Had close attention been paid to the trend in m_0 over this period, the strong recovery of the economy would not have come as a surprise. m_0 would have provided a very good leading indicator.

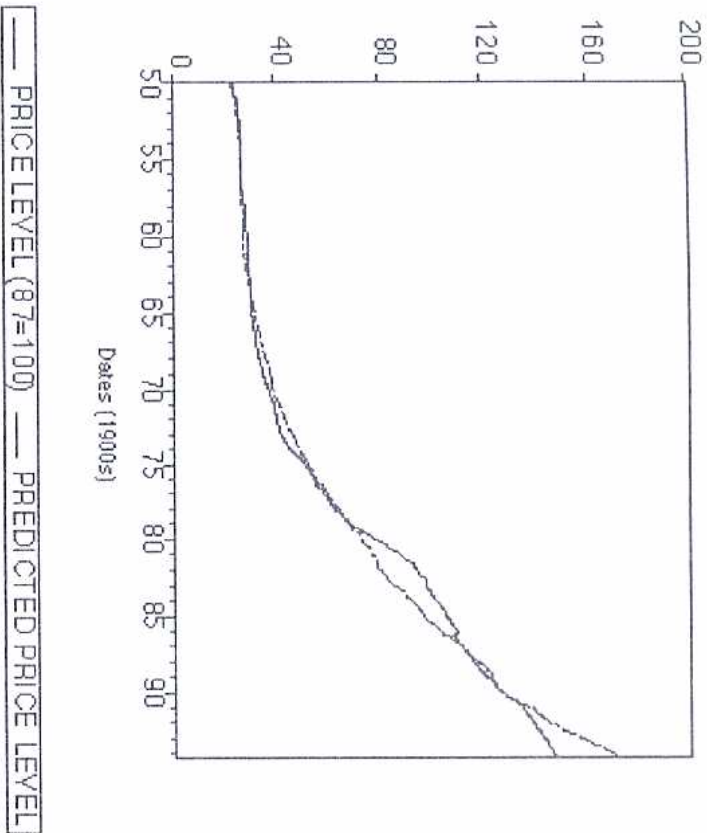
Any shift in the preferences of the public for shorter, rather than longer-dated deposits, will affect the relationship between the different m 's. For this reason, m_3 may grow faster or slower than m_1 over any period, which will have no implications for the wider economy. The supply of narrow money would be a better predictor in such circumstances. Also, the banks may themselves wish to take on fewer (more) deposits and undertake more (less) of their activities off balance sheet, should regulations or circumstances change. The cash or capital reserve requirements of banks may make it less or more profitable for them to do so. Banks may act as agents rather than principals. When relatively more or less lending and borrowing is done off or on the balance sheets of banks, then this is called disintermediation, or reintermediation. Such shifts will affect the measures of money and so also disturb the links between money and economic activity.

Similarly, if the extra demands for cash come from foreigners who wish to use US dollars rather than, say, roubles, then any given increase in the supply of dollar notes – the largest part of narrow money by far – or in m_0 will be less inflationary than otherwise for the US economy. As indicated, it is the excess of the supply of money over the demand for money that matters for prices or output, and not the supply of money itself. Economy watchers need to be aware of both sides of this important equation.

In Figure 23, the results of a regression equation for the USA,

Fig. 23

USING NARROW MONEY TO PREDICT THE PRICE LEVEL



that estimates the level of prices as a function of the level of the narrow money supply, is shown. As may be seen, the fit is a very good one, with an R squared of over 0.98. It may also be seen that using narrow money as a predictor of inflation would have led to underestimates of inflation in the early Eighties and overestimates in the early Nineties. Thus we need to predict changes in both the supply of and demands for money. The difference between supply and demand for money will bring either more or less inflation, or more or less output growth. Depending on the state of the economy, and inflationary expectations, a condition more or less of one or the other will arise. If the economy is already operating close to full capacity, then much of the impact of the excess supplies of money, and so extra spending, must be on prices and wages. If the economy has excess capacity, then output and employment may increase ahead of prices and wages.

The natural rate of unemployment

Much attention in economic analysis has been concentrated upon measuring the so-called *natural rate of employment*, or output. That is the rate which, if exceeded, will mean the onset of inflationary pressures. In the longer run, the rate of inflation will largely reflect the difference between the actual growth in the money supply and the potential growth in the economy. In other words, the demand for money to hold is likely to grow in line with the real economy. Thus, an economy with more growth potential can tolerate a more rapid increase in the supply of money without igniting inflation. Any improvements in payments technology, for example the wider use of bank cards as alternative methods of payment, or easier access to bank machines, which enable people to carry less cash or firms to manage their cash more effectively, will gradually reduce the demand for money. The rate at which the money supply should then be allowed to grow in order to put neither inflationary nor deflationary pressure on the economy, would then have to be adjusted accordingly.

Supply and demand once more

In the short run, for the reasons indicated, if such changes were not completely anticipated, changes in the money supply itself may effect prices or real output or some mixture of them. While the size of the money supply and the level of prices will always be highly correlated in all countries, the time lag between changes in money supply and changes in the level of prices is likely to be variable. In small, open economies, capital flows may cause the nominal exchange rate to change, which in turn will influence the inflation rate independently of money supply growth. That is, in the short run – over which price level changes are measured – *supply side shocks* may be responsible for changes in the price level. Money supply changes influence the level of demand in the economy directly. There are also independent forces, for example a drought or a flood, as well as an oil price shock or an exchange rate change, that reduce the supply of goods and push up prices. And so the supply side effects may predominate for a while. But in any long-run view of the causes

of inflation, the long run being longer than two years in this case, inflation may be regarded as always and everywhere a monetary phenomenon.⁶ That is, prices generally will not be able to rise in a sustained way unless the money supply continues to increase.

There is a common confusion about the links between productivity and inflation. Clearly, any improvement in the productivity of the labour force or capital stock will mean more output, more supplies. Were other forces acting on prices to remain unchanged, the price level, and so inflation rates, would fall. In such circumstances, any increase in productivity would cause prices to rise at a slower rate. Given the nature of things, however, the scope for productivity increases are limited. If the productivity of the labour force is improving by 2 to 3% a year, an economy is doing very well. But inflation may be anything from zero to an infinite amount, because there are no technical limits to how fast a government can print money. Unless government restrains itself, no feasible quantum of increases in productivity or efficiency are going to make much difference to high inflation rates – that is to say – those above 5% per annum. Wishful thinking about productivity will not get rid of inflation. Only the right kinds of monetary policy will do that – which of course takes the right kind of politics.

1. In the USA between 1980 and 1992 the correlation statistic for monthly changes in short and long rates was .67. That is to say, on average, short and long rates move together nearly 70% of the time.
2. It is strongly argued that the Federal Reserve System hopelessly failed its most important test, which was to prevent the collapse of the US banking system after the great New York stock market crash of 1929. A third of all US banking deposits

were lost between 1929 and 1933 as bank after bank folded. This loss of wealth clearly contributed to the great depression of the thirties. It also made the surviving banks very cautious lenders, concerned more with building up cash reserves than lending them out. See Milton Friedman, *The Great Contraction, 1929–1933*, Princeton, Princeton University Press, 1965.

3. Fundamentally, the system broke down because inflation and short-term interest rates rose. The controls on short-term deposit rates, which had protected the S&L's against competition, had to be abandoned in the face of rising, market-determined short-term interest rates. One way for the S&L's to avoid slow strangulation was to take higher risks for higher returns.

4. It should be emphasized that subtracting cash held as reserve requirements by the banks is adjusting in part for the demand for cash reserves by the banks. If this adjustment were not made, then when the cash reserve requirements imposed on banks were increased, this would show up as an increase in the supply of M0 and could be misinterpreted as monetary expansion. Again, it is the excess supply of money that counts.

5. The larger the subscript, the wider the definition of money. For example in the USA, m1 comprises the sum of currency, travellers cheques, demand deposits and other checkable deposits. m2 is m1 plus overnight repurchase agreements and overnight Eurodollars, money market mutual funds and money market deposit accounts and savings and small time deposits. m3 is m2 plus large time deposits, term repurchase agreements and term Eurodollars.

6. This phrase I associate with Milton Friedman, the most eminent of the modern monetarists who are literally those who, like myself, think money (money supply) matters – though the term is applied more widely to those who argue the case for market forces, rather than government intervention. Not all market loving economists are monetarists in the narrow sense described here. For a review of Friedman's latest work on money see his *Money Mischiefs, Episodes in Monetary History*, New York, Harcourt Brace, Javanovich, 1992.