CENTRAL BANKS: BEHAVIOUR IN A CRISIS

1. INTRO

"The Asian crisis (that erupted in July 1997) resulted in a region wide economic meltdown with drastic currency devaluations, widespread insolvency… shattered financial markets, sharp depreciation of asset values, economic downturn and surging unemployment." (Chen 1999) Chen goes on to say, "The unprecedented scale, depth, and severity…". (Italics added) But how can we know that? There is no doubt that in 1997 and 1998 there was considerable turmoil in financial and related markets, in different parts of the world. And there are continuing problems in many countries at the present time. These types of problems all tend to be classified as "financial crises". A typical response to such events is to assume that there are things wrong with these markets and then to call for closer supervision and tougher regulation. Thus for example, in the September 1999 issue of the IMF Survey we read: "The financial crises in East Asia in 1997-98, followed by those in Russia and Brazil in 1998-99, have underscored the need for changes in the global financial system that will reduce the risks posed by institutional weaknesses and volatile capital flows… Strengthening financial systems through better financial market supervision and appropriate mechanisms for managing bank failures…" (p.3). Knee-jerk responses in the US to recent corporate scandals have been to appoint new kinds of accounting regulators.

2. CRISES

It is important to distinguish among the different types of crises and define them carefully, before embarking on any prescription for their alleviation or avoidance. In the last decade or so there have been all kinds of problems: asset booms (in, for example, stock markets and property) and collapses in these; capital flight and currency crises; debt crises - - recurrent financial crises from the inability to service borrowing - and perhaps some debt deflation; bank failures; and genuine financial crises. None of these is new in economic history, and neither is it likely that they will disappear. In some cases problems in a banking system have led to currency depreciation. But it can just as easily go the other way, with perhaps doubts about the fiscal position leading to worries over the currency hence to capital flight and on to problems in a banking system. One type of problem does not however, lead inevitably to another. This should surely direct attention to possible deficiencies in different parts of the system rather than to attempt to change the system as a whole. Such an approach should consider the extent to which they go together, and ideally establish what the causal links are, direct attention to the fact that financial crises need to be carefully defined and when they are, their solution can be set out. Some define crises rather widely to embrace almost any large change in prices. Yet if wealth holders choose to behave in a certain fashion and, for example, speculate

on currency movements, they may profit hugely but they must be prepared to bear the costs of the risks as well. That is a problem for them but not a financial crisis.

Which of these different types of crises matters for the central bank? Doubtless it is sensible to look at them all. There may be some value in watching them as indicators of other activity. But in fact it is only a financial crisis that the central bank can make a serious attempt at preventing, alleviating, or curing. Some of the others may trigger red alert but the central bank is not in a position to take action.

Take for example asset prices. Do asset price falls matter? It may appear at first glance that they do. Since banks are concerned with asset prices by virtue of the fact that they lend on collateral and that collateral is frequently property. They are therefore potentially vulnerable to asset price change. However, "correct" prices are not knowable and equilibrium impossible to determine. Forecasting is out of the question. While in principle it may be correct for the central bank to allow for such price change in its behaviour in practice it cannot be done. Much is currently being written on this subject but long-run empirical studies suggest asset prices do not matter. For example, in a study of US stock markets (1830 – 1988) Wilson, Sylla, and Jones (1996) reported that there was no support for the hypothesis that stock market crashes caused banking panics in the period 1866-1813. And interestingly, in the same study they found that volatility of stock market returns had not increased over time.

A related concern with falling asset prices is that they may produce debt deflation. Where this occurs does it matter? In a specific study of the relationship between collapsing asset prices and financial instability in the U.S. Eichengreen and Grossman found that the resulting debt deflation did not matter in the great depression in the sense that it added nothing to the explanation of the severity of the depression to the widely discussed effects of money. In fact when a wide range of debt deflation experience was analysed across countries and time (see Capie and Wood 1997) the striking feature that emerged was that it was difficult to find significant macroeconomic consequences of fluctuations in asset prices.

What about currency crises? A consensus has emerged over the last decade or so among most economists that pegged exchange-rate systems cannot work without capital controls. But capital controls cannot be enforced in the modern world. So the solution to the exchange-rate problem is to have a floating system. In spite of the problems attaching to floating exchange rates most countries seem to want to us them and operate an independent monetary policy. The latter is currently an inflation target. There will from time to time be the extreme inconvenience of a rapidly changing exchange rate. (In the late 1990s sterling's real effective exchange rate moved by more than 25 per cent.) There will be countries who choose to escape the uncertainty which that brings who may opt for a currency board or perhaps a monetary union, but in the main floating rates should become the norm. However, the main point is that if there is an exchange-rate problem (in the sense

of a rapidly changing price) there should be an exchange-rate solution.

3. WHAT IS A FINANCIAL CRISIS?

To return then to the one kind of crisis that matters to central banks - the financial crisis. A financial crisis is best defined as the circumstances in which there is a threat to the money stock. Banks in fractional reserve systems take deposits and make loans and by doing so they multiply the stock of money. When they fail, or take steps to reduce their assets, they reduce the stock of money. But in the economy wages and prices are generally "sticky"; that is, they do not adjust quickly, and that being the case a fall in the stock of money has a damaging impact on the real economy – output falls. If one bank fails there is a danger of suspicion spreading that the system as a whole is less sound than it might be. That could lead to others failing, as depositors remove their funds. This brings the danger of a major collapse in the stock of money and hence of a severe recession in the economy. Avoiding financial instability of this kind is a key concern for public policy. So a financial crisis is where there is a threat to the money stock and it can be detected by changes in the way in which the public holds its money and in how the banking system keeps its reserves. This means that the failure of one institution is not in itself a financial crisis.

There have been genuine financial crises, of the kind just defined, around the world since the beginning of modern monetary economies with fractional reserve banking systems. In eighteenth century England they were frequent. In the nineteenth century they continued. Their typical pattern was that a boom would develop to a point where bank reserves were seriously threatened. Interest rates would rise and that would choke off the wilder activity, but it also raised doubts over whether cash could be obtained. If such fears arose panic would develop.

Nevertheless, there continue to be different schools of thought on financial crises. Some take a narrow focus and emphasise the banking system and at the other end of the spectrum there are those who are prepared to consider price movements in almost any asset. Schwartz (1984) made a useful distinction here, between what she called 'real' as opposed to 'pseudo' crises. She wrote, "A financial crisis is fuelled by fears that the means of payment will be unobtainable at any price and, in a fractional reserve banking system leads to a scramble for high-powered money. It is precipitated by actions of the public that suddenly squeeze the reserves of the banking system.... The essence of a financial crisis is that it is short-lived, ending with a slackening of the public's demand for additional currency" (p.12). In other words this is quite different from the failure of one financial institution, and it helps to distinguish between financial crises and other crises. It also contrasts with a disinflation which is likely to be long and drawn out. Thus many of the phenomena of recent times that have been called financial crises have been pseudo crises: stock market collapse, property price collapse, Britain's leaving the ERM and the price of sterling slumping, and the failure of Barings (1995), to take just some at random. A

financial crisis occurs when the stability of the banking system is threatened. It is only in that circumstance that the use of money threatens to disappear and the financial structure is threatened. Not only is this distinction between real and pseudo helpful for directing attention to what actually happened, and what the ramifications might have been, it is useful too for concentrating attention on the solution. The solution, which we return to at greater length in a moment, is for the lender of last resort to provide the system with immediate and sufficient liquidity to allay the panic.

In times of panic, or of events that might be believed to lead to panic, from wherever that derives, the public will take the precaution of holding higher amounts of currency than deposits. They do this for fear that the financial system will fail and that their institution will be part of that and that they therefore lose their deposit. The currency ratio will therefore rise sharply. In the same way banks who see problems ahead will try to safeguard themselves from prospective difficulties and will hold higher cash reserves to try to satisfy the demand from their customers. The reserve ratio should therefore rise noticeably. The combined effect of the change in the two ratios is to greatly diminish the money multiplier and so produce a collapse in the money stock. When the authorities see the threat of such a pattern evolving they can supply all the monetary base necessary to keep the money stock on an even keel. When it is known that they will do this that in itself helps to allay the panic.

4. How should the CB act?

The central bank should act to avert a panic by acting as the lender of last resort. The lender of last resort is a very useful concept when clearly defined. However, it is a term that invites interpretation, is sometimes misunderstood or on occasion distorted. In its most useful form it means the ability to provide funds on any scale and to do this quickly and decisively. It is the fact that central banks have the power to create high-powered money that allows them to be the lender of last resort. The purpose of a lender of last resort is to ensure stability in the financial system, to avert panic by taking appropriate action.

This was all set out a long time ago by several commentators but most notably, Henry Thornton, and Walter Bagehot. Henry Thornton has been described as the father of the modern central bank. His classic monograph Paper Credit (1802) is the source of his principal ideas. Joseph Schumpeter called it the Magna Carta of central banking.

The essence of central banking for Thornton is contained in the following quotation:

"To limit the amount of paper issued, and to resort for this purpose, whenever the temptation to borrow is strong, to some effectual principle of restriction; in no case, however, materially to diminish the sum in circulation, but to let it vibrate only within

certain limits; to afford a slow and cautious extension of it, as the general trade of the kingdom enlarges itself; to allow of some special, though temporary, enquiries in the event of any extra ordinary alarm or difficulty, as the best means of preventing a great demand at home for guineas; and to lean to the side of diminution, in the case of gold going abroad, and of the general exchanges continuing long unfavourable; this seems to be the true policy of the directors of an institution circumstanced like that of the Bank of England. To suffer either the solicitations of merchants, or the wishes of government, to determine the measure of the bank issues, is unquestionably to adopt a very false principle of conduct." (Paper Credit, p. 259.)

This is a remarkably clear statement given its date, and the state of development in the money market. It describes the ideal daily operation of a central bank. But how should the bank behave in a crisis? Thornton accepted the danger of the failure of one bank leading to the spread of fear and possibly panic and the failure of many banks - a common occurrence in the England he was describing, that of the late eighteenth century when there were hundreds of small banks. "If any one bank fails, a general run upon the neighbouring ones is apt to take place, which if not checked in the beginning by a pouring into the circulation a large quantity of gold, leads to very extensive mischief." (Paper Credit p 180.)

Thornton even allowed that several institutions could fail but that the central bank may nevertheless not feel the need to save them:

"It is by no means intended to imply, that it would become the Bank of England to relieve every distress which the rashness of country banks may bring upon them: the bank, by doing this, might encourage their improvidence. There seems to be a medium at which a public bank should aim in granting aid to inferior establishments, and which it often must find it very difficult to be observed. The relief should neither be so prompt and liberal as to exempt those who misconduct their business from all the natural consequences of their fault, nor so scanty and slow as deeply to involve the general interests. These interests, nevertheless, are sure to be pleaded by every distressed person whose affairs are large, however indifferent or even ruinous may be their state." (p 188.)
Thornton placed the emphasis on responsibility to the market and not to an individual institution with the central objective is to prevent the collapse of the money stock.

Bagehot was the great developer and expounder of these views in the nineteenth century. He first wrote on this subject in 1848 in the first article that he published. He was writing first of all about the previous year's financial crisis and commenting inevitably on the Act of 1844. His article is remarkable for one so young (he was only 21 at the time) and is worth quoting at length.

The currency argument is this: “It is a great defect of a purely metallic circulation that the quantity of it cannot be readily suited to any sudden demand; it takes time

to get new supplies of gold and silver, and, in the meantime, a temporary rise in the value of bullion takes place. Now as paper money can be supplied in unlimited quantities, however sudden the demand may be, it does not appear to us that there is any objection on principle of sudden issues of paper money to meet sudden and large extensions of demand. It gives to a purely metallic circulation that greater constancy of purchasing power possessed by articles whose quantity can be quickly suited to demand. It will be evident from what we have said before that this power of issuing notes is one excessively liable to abuse because, as before shown, it may depreciate the currency; and on that account such a power ought only to be lodged in the hands of government.... It should only be used in rare and exceptional circumstances. But when the fact of a sudden demand is proved, we see no objection, but decided advantage, in introducing this new element into a metallic circulation." (Bagehot in Stevas vol. 9 p. 267) (This could surely be extended readily to a currency board in the current context.)

These remarkably clear statements are still valid today. What emerges from this is that the lender of last resort is there because, first it is the ultimate source of cash. It can therefore provide all the required liquidity. The liquidity should be provided to the market as a whole and the lender should not bailout individuals. The ideal way to do this is to act anonymously. Additionally, there should be no commercial rivalry that would deflect it from its task.

It is important to stress that it is the peculiar position of the monopoly note issuer and holder and provider of the ultimate means of payment that allows, almost obliges, it to behave as the lender of last resort. That is the only institution that can supply without limit (but at an increasing price) the ultimate means of payment. It is the knowledge in the markets that supply cannot run out which serves to assure the market and allay the panic. And if this position is made known in advance the picture is complete.

The bank should not try to rescue any one institution. Besides, it is worth pausing to consider what could reasonably be meant by “bail-out”. Central banks in general do not have the capital resources to salvage single-handedly an institution of any significant size - significant in the sense that it could have damaging consequences for the rest of the system. And if the central bank were to discount inferior assets of an individual institution in difficulty, then if these assets were marked to market the central bank would be seen to be damaging its own capital/asset ratio. If this in turn required government assistance in the raising of more capital, the central bank would in effect have taken a fiscal decision, something it should surely not be doing. Thus, all the central bank can really do is oversee or organise a rescue operation, perhaps putting pressure on others to subscribe new capital.

Another problem is said to arise over the size of some financial institutions. It is sometimes argued that one particular institution is too large to be allowed to fail. Too big to fail is a cost benefit concept. Generally speaking for banks of a certain

size the benefits of saving them - to the rest of the system and the economy as a whole - are reckoned to outweigh the costs of them failing. However, while the costs of failing are relatively short term and susceptible to some calculation, the benefits to the system of the salutary lesson of allowing them to fail must be seen as very long term and almost impossible to measure. But the likelihood is that the benefits of allowing failure will outweigh the costs. A substantial benefit is likely to be improved prudent behaviour on the part of other institutions.

How can the ideal operation of the last resort be achieved? It is possible that a key element in this story is that anonymity is highly desirable in the execution of the lender of last resort function. The lender of last resort supplies funds to the market in times of need. It does not supply individual institutions. In its proper form it should not engage in bailing out firms of any kind be they banks or non-banks. Therefore, if the operation could be carried out where the identity of those seeking funds was not known to the Bank that would be ideal. This was achieved by a particular mechanism in England and similar approaches have been recommended for other countries such as the United states.

A central bank assumes the function of lender of last resort when it accepts responsibility for the banking system as a whole and that should override any residual concern with its own profitability. It is the appreciation of how they should behave in a crisis, rather than any individual act of rescue, that should date the acceptance of the role.

5. THE ROLE OF REGULATION / SUPERVISION

Is there any room left for regulation or supervision? The principal functions of the central bank are to provide for monetary and financial stability. Monetary stability is more easily taken care of via some relatively straightforward operating procedure. Financial stability is more complicated. For one thing there is no measure of financial stability or instability. And it is concerned with extreme and uncertain possibilities. Nevertheless, as we have argued it can be accomplished by means of the lender of last resort. That is aided by a well-behaved banking system and it is preferable if banks have learned how to behave appropriately and recognise the potential costs of poor behaviour. Yet, for a variety of reasons calls for regulation are diverse and frequent and persistent.

It is never straightforward to say from where regulation derives. There is a long-running debate in economics over whether it is ideas that dominate or interest groups in the shaping of regulation. Where it was once innocently accepted that regulation was the outcome of politicians concerned about consumer welfare there has been a big switch to the view that it is largely the product of firms who set out to improve their own position by limiting the competition - rent-seekers. Resulting regulation is unlikely to be ideal policy.

Even if we accepted for the moment that regulation was the result of well-meaning government would it necessarily be the optimal policy. The reasons given for introducing regulation are almost invariably plausible: health, physical safety, financial security, and so on. But in spite of heavy regulation these are not always achieved. Countless examples can be given but here are just two from the non-financial world. In the US, airline regulation was extensive to provide maximum passenger safety. When the industry was deregulated new firms entered and airline profits fell, as would have been readily predicted by an economist. But safety improved. Accidents per passenger mile fell. In other words less regulation brought greater safety. Another example can be found in what was formerly the most highly regulated economy in the OECD - New Zealand. They too deregulated what had been extremely heavily regulated transport sector. The quality of transport services improved hugely and the costs to the consumer fell. Thus regulation can have the perverse effect of delivering the opposite outcome to that desired.

An example from the financial world can be found in the United States following the great depression of 1929-33. One of the knee-jerk responses to these events was to introduce deposit insurance. But the negative role that played in the savings and loans collapse forty years later reminds us of the far reaching effects that such regulation can have.

Even if regulation delivered the outcomes desired we must consider at what cost it is achieved. If the costs exceed the benefits then it is clearly not worth it. Even if we simply considered the costs of compliance it would become clear that they were such as to damage the financial system. But moving beyond that there are the costs of limiting competition, or distorting appropriate portfolio diversification. An example of the latter can again be found in the US where regulation prevented banks from branching and so left them exposed to the particular vagaries of what were often highly specialised local economies. That produced frequent bank failures which in turn called forth more bank regulation leading to other unforeseen difficulties somewhere later down the line.

And on the question of costs the other calculation to be made is who bears the cost. It usually turns out to be the consumer.

The British experience from the middle of the nineteenth century until the outbreak of the Second World War is testimony to the benefit of light regulation. Banks were allowed to look after their own affairs. There were no financial crises in that period and the system proved to be extremely robust.

Should there nevertheless be supervision? If the Central Bank is to be an effective lender of last resort there may be a case for it having special access to the key information of the banks. But that is about as far as it goes.

What I have argued nevertheless requires a central bank to have the necessary

reputation to be able to carry the policy through. Reputation is not quickly or easily acquired. Substitutes for reputation can perhaps be approximated in independence coupled with transparency and accountability.

6. WHAT TO DO AFTER THE CRISIS PASSES

Once a crisis is over some plan for extracting the extra cash injected should be implemented otherwise the excess money will be translated into inflation. There was no such plan in Britain in 1914 nor was there in the subsequent years, and this is part of the explanation for the extent of the inflation experienced in the course of the next few years.

In 1914 London suffered its first financial crisis for a very long time – possibly for a long as half a century. 1914 was different though. It arose as a direct result of the war, there was no preceding boom, and it was comparatively short-lived. When war became a probability in late July, selling speeded up on the Stock Exchange, exchange rates became more volatile, and foreigners were unable to make remittances to the London acceptance houses. Banks in London started calling in loans they had made to the stock market.

The root cause of the crisis was a failure of remittance. London was a massive creditor to most of the rest of the world and that included the enemy. British stockbrokers were owed money by foreigners, but in late July foreign stock exchanges were closing, moratoria were being declared, and debts became irrecoverable at least for the foreseeable future. The London banks had lent money to the brokers "on the margin". That is they had called for securities as collateral for the loans to an amount 10 per cent to 20 per greater in value than the loan. When security prices began to fall that margin was eroded and the banks, not unreasonably, began to call in the loans. The brokers sold more securities in order to repay the loans but of course in the process drove security prices down further and so on. This is a well-known pattern in such circumstances.

In late1914 there were serious problems for the British banking system and the Bank of England's response was appropriate. But the failure was to extract the extra monetary base when the crisis passed and inflation inevitably followed.

The clearest case of crisis which called out for the authorities to inject high powered money was in the great depression of 1929-32 in the U.S. There were several waves of bank failures and what was required was for the authorities to increase the quantity of high powered money. The currency deposit/ratio rose sharply, and while it is true that the authorities raised the amount of base money, it was nevertheless hopelessly insufficient and the broad money stock fell precipitately. In the forty-three months from September 1929 to March 1933 that marks the depression, bank deposits fell by $18,044m or 42.4 per cent. In just four months from October 1930 to January 1931 the currency/deposit ratio moved from 8.7 per cent to 9.9 per cent.

But over the whole period the currency/deposit ratio rose from 8.6 per cent to 22.7 per cent and the banks' reserve/deposit ratio rose from 7.65 per cent to 11.87 per cent. These are dramatic changes which meant the money multiplier fell from a high of 6.7 to a low of 3.6 between these dates. Some idea of the scale of H to be injected can therefore be guessed at. In recent paper Bordo, Choudri, and Schwartz (1999) argue that while for most countries the gold standard prevented the authorities raising H, this was not true for the U.S. where there were huge gold reserves. At the two critical points, October 1930 to February 1931 and from September 1931 to January 1932 the Fed could have prevented the banking panics *without endangering convertibility*.

The lesson of the great depression was not to allow such a collapse again. When the prospect appeared to threaten, in 1987 when the stock market collapsed after a long boom, the Federal Reserve immediately injected the required amount of monetary base and when the danger of financial crisis passed they took out the extra liquidity.

7. CRISIS MANAGEMENT

There were occasions when the Bank organised the rescue of an ailing institution. For example, the classic case was Barings in 1890. There had been a boom in Argentina in the mid 1880s and that country's credit rating had been improving from that point. Capital flowed in. Poor harvests in 1889 and problems servicing debt contributed to the resulting coup in July 1890. There was some default. Barings had underwritten large bond issues and it became clear that they were liable for large amounts.

Barings was a huge financial institution and the government pressed the Bank to provide support for Barings, along with other leading banks. The Bank in turn asked the government for a guarantee. Suspension of the 1844 Act was discussed but Lidderdale (the Governor) rejected that idea lending further weight to the view that this was not a liquidity crisis but rather one firm in difficulty. The Bank arranged a lifeboat operation. But this does not qualify as lender of last resort action. At most it might be described as an aspect of crisis management – operating to keep the system on an even keel and prevent anything that looked like a disturbance to the calm that had long prevailed in the system.

CONCLUSION

The role of central banks is surely clear. After providing for long-term monetary stability by for example, adhering to a specified growth rate for the money stock, or to targeting price stability, their key function is to avoid the sharp fluctuations that result from crises. They should do this by behaving as a lender of last resort of the kind described. Other problems such as excessive exchange-rate volatility should be tackled by other means and by other institutions.