

NATIONAL CENTRAL BANKS IN A MULTI-NATIONAL SYSTEM

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“The thing which has been is that which shall be; and that which is done is that which shall be done; and there is no new thing under the sun.” Ecclesiastes 1:9

Introduction

Central banks with one important exception remain national, but commercial banking has become increasingly international. The aim of this paper is to explore the problems this creates for central banks. To do so we first consider the functions of central banks, so as better to understand which of their functions may be impeded by the internationalisation of commercial banking. In summary, their two core functions are monetary stability and financial stability. We explore in turn what can be meant by each of these concepts, and consider the effects on them of internationalisation. That prepares the way for examination of what can be done, and for what perhaps should be done, to deal with how internationalisation of commercial banking affects or impedes the carrying out of these central bank tasks. These matters cover the first six sections of this paper. We then turn to how the internationalisation of financial markets may impinge on central banks. That examined, we move on to the historical precedents which may help in judging the conclusions so far reached; for, as we shall argue, the current objectives of central banks are in fact well established ones going under new names. That historical discussion prepares the way for the concluding section of the paper.

Monetary Stability

Monetary stability, where that is an explicit central bank function, is currently defined as a low rate of change, invariably zero or above, of some specified measure of the price level. Not all central banks have such a clearly specified objective – the US Federal Reserve for example has its objectives specified in very general terms – but even when there is no such explicit mandate there is the expectation that something regarded as price stability or a reasonable approximation to it will be sought. Whatever is specified, what invariably seems to be in mind is Alan Greenspan’s much quoted definition of price stability - a rate of change of prices so low that no-one bothers about it in their day to day transactions.

Now if a central bank is not in charge of the monetary policy of its country – as the central banks of the Eurosystem are not – then that central bank lacks the traditional central bank tool to control inflation. Such a central bank cannot set monetary policy for

its country. It can, as banks in the Eurosystem do, participate in setting policy for the currency area as a whole but that can at best produce the desired outcome for the area as a whole. Only by chance does it produce the desired outcome for an individual country within the area.¹

But that is not a difficulty caused by the internationalisation of commercial banking. Can we identify any problems caused by that? The answer is that fundamentally there are no such problems. A national central bank is by definition the only supplier of base money in its nation, and therefore ultimately has control of monetary policy and therefore, still more ultimately, control of inflation. There may be operational difficulties caused by internationalisation, but these are as much likely to be the result of the internationalisation of financial markets as of that of commercial banking. These problems are the ones created by the rapid movement of large amounts of funds from one currency to another. If the exchange rate is floating there can be substantial transitional effects on the exchange rate, which can make the control of inflation difficult both by affecting inflationary expectations and by making the actual interpretation of price changes more difficult. (There are also financial stability implications; these are considered below.) Meanwhile, if the exchange rate is pegged, the central bank has to respond to these flows so as to ensure that their effect on domestic monetary conditions if permanent is trivial, and preferably is only transitory. This raises issues about central bank operating procedures and about how to define and then measure the minimum sensible domain for a currency but these are beyond the scope of this paper.²

Accordingly, our conclusion on the interaction of the task of maintaining monetary stability with the internationalisation of commercial banking can be brief. Internationalisation causes no fundamental problems for central banks in seeking to carry out that responsibility.

Financial Stability

What of financial stability? As is revealed by the numerous views quoted in Allen and Wood (2006) there is no universally accepted, precise and rigorous, definition of financial stability. Happily for our purposes we do not need one but can make use of the version of the concept outlined in that paper.

To quote: “We begin by proposing a definition of financial instability....Thus we define episodes of financial instability as episodes in which a large number of parties, whether they are households, companies, or (individual) governments, experience financial crises which are not warranted by their previous behaviour, and where these crises collectively have seriously adverse macro-economic effects....This is our preferred definition of financial instability. As indicated above, we would define financial stability as a state of

¹ To an extent this is like the situation of a national central bank, in that there can be quite substantial inflation divergences within a country.

² Recent advances in the Optimum Currency Area Literature, Frankel and Rose (1998) for example set out some conditions after allowing for the fact that economies adjust to new regimes and hence reactions by both the private sector and the authorities change with the regime and in the light of experience with it.

affairs in which financial instability is unlikely to occur, so that the fear of financial instability is not a material factor in economic decisions taken by individuals or businesses.” (pp159 – 160)

It is worth emphasising at this point that the above definition deals with prevention as much as with cure; central banks should not only be able to respond to a crisis, but most of the time prevent them happening, so that “...the *fear of instability* is not a material factor...”. That emphasis on making clear that crises will be nipped in the bud, not just have their consequences ameliorated after they have occurred, is both important and long standing in this area.

Banks can fail because of loss of liquidity or of loss of capital. In this paper these are dealt with in that order, as that is the order in which policy towards banking problems evolved. Failure is itself a somewhat ill-defined concept. Banks can fail in the sense that they have to close their doors because they cannot meet their obligations and they, their creditors or the authorities file for insolvency. They can also fail in the sense that they no longer meet the regulatory requirements laid down and the authorities decide to terminate their licence. Two features of bank failure are worth highlighting at this point. The first is that a bank can be unable to meet its obligations not because the value of its assets does not cover its liabilities but because it cannot gain access to sufficient liquidity at a viable price to make its payments. The second is that in the event of failure in the regulatory sense it may prove possible to keep the banking business alive by transferring the assets and liabilities to another bank that is regulatorily compliant. These two features of bank failures lie, in turn, at the heart of the next two sections.

Failure through Loss of Liquidity

Concern with the role of the central bank in maintaining financial stability developed first in the particular context of a shortage of liquidity caused by the outbreak of a war – a clear-cut example of financial instability in the sense of Allen and Wood (op cit). The problem arose in 1793. In that year war broke out between France and Britain. This caused immediate problems in the British Banking system. These problems were described, and the solution hinted at only four years later by Francis Baring.

“The foreign market was either shut, or rendered more difficult of access to the merchant. Of course he would not purchase from the manufacturers;... the manufacturers in their distress applied to the Bankers in the country for relief; but as the want of money became general, and that want increased gradually by a general alarm, the country Banks required the payment of old debts...In this predicament the country at large could have no other resource but London; and having exhausted the bankers, that resource finally terminated in the Bank of England. In such cases the Bank are not an intermediary body, or power; there is no resource on their refusal, for they are the *dernier resort*.”³

³ A few words on the nature of the British banking system of the time are useful. There were numerous banks. Country banks operated outside London, settling among themselves but having London banks with whom they dealt and from whom they could borrow, and the London banks meanwhile had access to the

To put that narrative into modern terminology, because they were unable to sell abroad, merchants did not buy from manufacturers, who then became short of cash and so went to their bankers to borrow so as to meet their already-incurred obligations as they fell due and to withdraw cash to make immediate payments. It is of the nature of a fractional reserve banking system that bankers do not hold sufficient cash to meet every possible claim upon them so the banks got into difficulties when, as the shortage of cash became widespread, more and more of their customers tried to make withdrawals. The bankers then went to London, but for the same reason the London banks could not accommodate them all, so the London banks in turn sought to borrow from the Bank of England. As Francis Baring observed, at that point only the Bank of England could help. What could the Bank of England do, would it help, how would it help, and is such action or the possibility thereof still useful today? The answers to the first three of these questions were provided by Henry Thornton in 1802, and some additional points were in the second half of the nineteenth century added to his answers by Walter Bagehot, in a series of essays and in what is perhaps the most famous of all books on banking, *Lombard Street*.

It was characteristic of Thornton, as both Hayek (1939) and Hicks (1967), these most notable of commentators on him, observed, to embed his theoretical discussion in institutional detail.⁴ These details should be outlined. There were at the time he wrote many banks in England, all except the Bank of England constrained by the six partner rule. Some of such small banks even when as carefully managed as unlimited liability might be expected to compel inevitably failed from time to time.

“If any bank fails, a general run upon neighbouring banks is apt to take place, which if not checked in the beginning by a pouring into the circulation of a very large quantity of gold, leads to very extensive mischief.” (Thornton, 1802, p. 182)

This “pouring in” was the role of the Bank of England.

“...if the Bank of England, in future seasons of alarm, should be disposed to extend its discounts in a greater degree than heretofore, then the threatened calamity may be averted.”(Thornton, 1802, p. 188)

Very important for our subsequent discussion, Thornton made explicit that his recommendation was and should be compatible with letting individual banks fail.

“It is by no means intended to imply that it would become the Bank of England to relieve every distress which the rashness of the country banks may bring upon them: the Bank by doing this, might encourage their

Bank of England. The Bank of England itself was still not a central bank, but it was the government’s bank as well as conducting normal banking business with the private sector, both banks and non-banks.

⁴ This point was also made by Francis Horner (1802) in his review of Thornton’s book, where he commented, with some measure of truth, that Thornton’s method of exposition did not always make for the greatest possible clarity.

improvidence...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 scant and slow as to deeply involve the general interests.” (Thornton, 1802, p 188)

Why such “relief” would stop a panic run for cash was stated explicitly by Walter Bagehot in 1873.

“What is wanted and what is necessary to stop a panic is to diffuse the impression that though money may be dear, still money is to be had. If people could really be convinced they would have money..... most likely they would cease to run in such a herd-like way for money.” (Bagehot, 1873, pp64 -65)

Only the Bank of England could provide the necessary cash, as it was for all practical purposes the monopoly note issuer.⁵ When it supplied cash in a crisis, when no-one else could, it was acting as the lender of last resort. So much for 19th century theory; what was the practice, and did it work as theory expected?

In Britain practice developed along the lines theory prescribed with remarkable rapidity. Sterling returned to its pre-war gold parity in 1821. In 1825 there was a substantial drain of gold abroad, and there was in consequence a shortage of currency. A panic developed and there were runs on banks. To prevent a wave of bank failures the Bank of England, on 14th December, suddenly widened the category of securities on which it would make advances.⁶ Doing so stopped the panic.

Next came a truly major episode. In 1866 Overend and Gurney, a bank which had expanded rapidly and which by the 1850s was some ten times bigger than the next biggest bank in the system, failed. Understandably this caused a “terror and anxiety” (Bankers’ Magazine, June 1866, p.15). But after a brief hesitation the Bank of England gained permission to issue notes free of the constraints of the gold standard, and the panic gradually subsided.

One could go on to describe the failure of the City of Glasgow Bank in 1878, and that of Barings in 1890; but what is important about these episodes in the present context is that by then there appears to be confidence that the Bank of England would nip any crisis in the bud, and there was no panic.⁷ (Barings is important in another regard, and we return to the 1890 Barings failure subsequently.)

⁵ Other banks had the right of note issue, but those which had that right fell in number through the century, and, more important and indeed crucial, only the Bank of England could be freed from the constraints of the gold standard and issue without stint should a crisis necessitate that.

⁶ It can not be described as being rash in doing so – the category it then lent on for the first time comprised government securities, previously regarded as unacceptable. Whether this may be regarded as the start of a slide towards debt monetisation is a subject for another study.

⁷ The City of Glasgow Bank case is particularly interesting as it emphasises the difference between liquidity and credit losses. As there was unlimited liability and the shareholders were able to cover the losses to creditors and depositors under the insolvency procedures the contagion related mainly to liquidity losses although Caledonian Bank had to close its doors until the position was clear as it was a shareholder.

So in Britain classic lender of last resort action, flooding the banking system with cash so as to alleviate both shortage and fear of shortage, was sufficient to prevent banking crises. The same lesson can be drawn outside Britain; experience in both France and Italy confirms that such action prevents crisis and maintains banking stability.

Does this matter today? Surely it does. Consider first recent Argentinean and East Asian experience. In April 1991 Argentina fixed its peso against the US dollar. Inflation fell, fiscal discipline was restored, and private capital flowed in. But the banking system remained undercapitalised, and the central bank could not, because of the currency board system in conjunction with own modest reserves, act as a liberal lender of last resort. And a successful lender of last resort must be capable of being a liberal one. The banking system was therefore both fragile and without access to a lender of last resort. The fall of the Mexican peso in 1995 triggered a run on Argentinean banks; there was, inevitably in the absence of a lender of last resort, a sharp monetary contraction followed by a sharp fall in GDP and rise of unemployment. Similar problems emerged by a different route, but again allowed by the absence of lender of last resort, in East Asia. The collapse of the Thai baht turned attention to Indonesia, Malaysia, and the Philippines. It was observed – perhaps it should have observed been earlier – that banks had been lending extensively in domestic currency and funding this by borrowing in foreign currency which they then converted to domestic. Demands for foreign currency could of course not be met by any lender of last resort, so severe banking and economic problems followed. (Whether this episode makes a case for an international lender of last resort we discuss below.)

The Argentinean case, however, plainly reveals the continued usefulness of traditional LoLR.

Does such usefulness remain in developed economies? Some – for example Charles Goodhart (1999) – maintain that classic LoLR is no longer necessary in such economies, since capital markets are so developed that solvent but illiquid institutions can always get funds. There are it seems to us two slight difficulties with this claim. First, in some circumstances, rare admittedly but certainly not impossible, it is not true. Recollect when the computers at the Bank of New York failed in 1985. That bank was central in the market in US government securities. The problem was that it could not identify and receive payments for government securities so it was being debited by the Fed for the securities but getting no inflow from the purchasers so it had to start borrowing on a huge scale, creating a hole of nearly \$24bn in the space of an hour and a half before it managed to halt further transactions. This was rapidly draining the US banking system of liquidity, so the Federal Reserve Bank of New York essentially “opened the discount window” and supplied whatever was demanded. This was a classic LoLR operation, albeit not for a classic reason. The other problem with the claim that LoLR in the classic sense will never be needed is the belief that solvent institutions can always get funds. Solvency is not always easy to discern. A most illuminating example of this is examined when we consider the years of the gold standard, but a clear statement of the general difficulty was provided by Ralph Hawtrey in 1932.

“It is not ordinarily possible to examine in detail the entire assets of an applicant for a loan. Demonstration of solvency therefore cannot be made an express condition of the loan, at any rate at a time when the need for cash has become urgent.” (Hawtrey 1932, pp126 – 127)

Determining solvency takes time, and further, whether or not a firm is solvent depends on assumptions about the future. For example, if it gets the loan it may be solvent, and if not, not, as it may be forced to liquidate assets at distress prices to meet some of its liabilities.⁸ That is why classic LoLR lending takes place on security, rather than being unsecured lending granted on a calculation of the borrower’s solvency.

To summarise so far on threats to financial stability arising from loss of liquidity, we have argued that is a problem which can be dealt with by classic Lender of Last Resort action – by the relevant national central bank lending freely on security to the affected banking system. We must therefore next consider whether that desirable solution is a feasible one in a system of international banks.

Internationalisation and Classic Lender of Last Resort

So long as the country concerned has a floating exchange rate there is almost nothing to discuss. In the face of a sudden, crisis – driven, surge in the demand for liquidity the national central bank supplies it. Whatever the nature of the banking system, the funds stay in the country. The argument is exactly the same as that which demonstrates monetary autonomy in the presence of a floating exchange rate, an argument dating back to David Hume in 1752 and never yet challenged. In essence, any attempt to ship the funds overseas may affect the exchange rate, but in the absence of official intervention by the central bank (in effect offsetting its own monetary policy action), cannot affect the money stock. The exchange rate may be affected; but while that can complicate the monetary stability task of the central bank it does not in this context impinge on the task of maintaining financial stability.

Does that conclusion change when the exchange rate is pegged? It is evident that it does not for classic LoLR evolved in the days of the gold standard; but why it does not needs exploration.

Normally one would expect a monetary expansion simply to flow out across the exchanges, as described in the classic Hume reference mentioned above. But if there is a crisis-driven monetary expansion, what is happening is that there is an increase in the supply of money matching more or less exactly the increase in demand for it. In principle, that is to say, there is no *excess* supply of money at all. Hence is the paradox of being able to change the supply of money while not possessing monetary autonomy resolved – at any rate in principle. Does the presence of international banks affect or

⁸ This is why it is important to be clear what is meant by the advice that a Lender of Last Resort should lend freely *at a high rate*. The rate should be above that prevailing before the crisis (for a brief discussion of reasons for this see Rockoff (1986), but *not* at that rate which would prevail in the absence of lending – not least because that latter rate could well be infinite.

complicate the matter? That may be a change from the gold standard period, albeit a change in degree not kind, for as observed below there were international banks then too.

Suppose there is a panic in country A. The central bank responds by supplying cash. Might international banks ship the cash overseas, thus not allowing the cash injection to alleviate the shortage? The answer is that they might, and if the exchange rate were pegged they could. But why should they? If a particular bank were not experiencing a cash drain it could and surely would lend domestically, so long as it had confidence in the security of the system as a whole and in the collateral it was taking, for the interest rate would be higher relative to abroad than before. And if a bank were caught up in the panic, it would be concerned to survive, and so would not seek to ship funds abroad to another part of the bank.⁹

A currency union may be regarded as a special case of a pegged rate system, and a currency board another. Further, currency unions can be divided into two types. There is one such as the Eurosystem, where the national central banks survive and contribute to policy making at the newly created system central bank; and then there is the one where the national central banks vanish, and are replaced by one “union” central bank. All three varieties of pegged exchange rate systems require discussion. As before, we first analyse the situation without regard to the internationalisation of commercial banking, and then see what difference that can make.

If we have what may be regarded as a traditional currency union, there is only one central bank, with no other bank retaining any central bank responsibilities. In that case, the situation is either capable of being regarded as one country with no international banks – if there are no banks with significant business both inside and outside the union – or as one country with international banks if there are banks working both inside and outside the union. Either way, as argued above, there are no fundamental problems for traditional LoLR actions.

That case does not match the most important monetary union of modern times, the euro area. Here the national central banks remain and participate in decision making. In principle this is no different from the case just discussed – if, that is, one maintains that the various nation states of the euro area are no longer countries from the monetary point of view. That is certainly defensible, but it may overstate the degree of financial integration between them. A better way to view the situation might be to think of the euro area as a country with a single central bank whose branches have substantial autonomy. Each of the areas (countries) served by one of these branches manifestly has financial links to every other such area, but these links are less close than those within the area (country). If this is accepted, then again there are no fundamental problems in carrying

⁹ At this point bank structure requires consideration. An international bank can have branches, subsidiaries, or other forms of representation spread across the world, and these can be capitalised independently or not. This raises the possibility that in some cases a part of the bank might be allowed to fail so as to save the rest. The reputational effects of doing so could well be such as to make the action pointless, but this matter is better discussed when we examine failure through loss of capital, in which context the issues are more obvious.

out traditional LoLR policy. There would of course have to be co-operation between the ECB and the national central bank whose area was most affected, if there were such a bank, but that could surely be taken for granted.¹⁰

Last in this section we turn to currency boards. It has frequently been claimed that a currency board because it simply imports its monetary policy and has no independent control over domestic monetary conditions cannot conduct LoLR operations. First, it is important to reiterate that LoLR is not intended to change monetary conditions, but rather to maintain them close to unchanged in the face of a surge in demand for cash (or its equivalent, deposits at the central bank). Hence if a currency board can inject liquidity there is no reason to expect it simply to drain overseas as excess liquidity would do – for it would not be excess. But can a currency board inject liquidity? As Charles Goodhart (1999) has pointed out, if a currency board is holding excess reserves, as prudence suggests it should, then it can inject liquidity to the extent of these reserves. Currency boards have done so in the past. Another possibility is the kind of situation which prevailed in some British – dependent currency boards. The banks in these were simply branches or subsidiaries of British banks, and therefore had ready access to the London money markets, and if necessary the Bank of England, so sterling could be obtained whenever necessary to bolster the issue of currency in the currency board’s area.

We can thus divide currency boards into two categories – those which for one of the reasons described above can inject emergency liquidity when needed and those which can not. Boards which cannot are plainly at risk unless like Estonia their banking systems are foreign owned and liquidity problems would be solved through the parent..

So in summary it would appear that internationalisation of commercial banking does not impede a national central bank seeking to carry out a classic lender of last resort operation so as to stabilise the banking system in (not, observe, of) its country. Bank internationalisation does not expose countries to financial crises arising from sudden increases in the demand for liquidity. It may, however, produce problems of *implementing* LoLR policy. These are discussed below, under the heading of “Preventing Problems”.

An International Lender of Last Resort?

The East Asian crisis prompted some calls for an international lender of last resort. As the above discussion makes clear, such an organisation defined in the classic sense cannot exist. It would need to be a body which could issue any currency in the world, on demand and without stint, whenever there was a surge in demand for it. There can be little doubt that few countries would permit their currencies to be thus dispensed.

What is usually meant by the term though is an extension of the lender of last resort concept to include the provision of bail out capital. That proposal has come in for substantial criticism. A leading proponent of the idea is Stanley Fischer – see his 1999 paper. Leading critics are Charles Calomiris (e.g.1998) and Anna Schwartz (e.g.1999).

¹⁰ As could presumably the speed of that co-operation. Rapid action is essential in an incipient crisis.

It is unnecessary for us to become involved in that debate at this point, beyond noting that there might well be substantial problems in finding agreement over who would provide the capital. As will emerge below, it seems likely that ensuring the rapid provision of sufficient capital, even on a scale sufficient to support a bank rather than a country or group of countries, is not an easy task. Those interested to pursue the international lender of last resort discussion further will find the above cited papers a stimulating introduction to the subject.

Failure through Loss of Capital

Banks can fail because of loss of capital. Governments have to decide what to do about this – how much effort they wish to spend on reducing the chances of such failures, how drastically they wish to intervene to head off incipient failures, how they wish to structure the financial system to limit the costs and exposures, how they wish to insulate those directly affected (as creditors and debtors), through deposit insurance and specific resolution methods, and those who are indirectly affected through contagion and the need to recontract failed transactions. All failures may affect public confidence in the financial system, but concern tends to focus on the larger institutions whose functions are central to the system and where a sudden cessation in trading would have a serious impact.

Many of the problems associated with failure through loss of capital require government action. Laws may need to be passed if sufficient powers have not already been granted to the central bank. If capital is required to deal with the problem, then in the absence of a private sector provision the government must use taxpayers' funds to provide that capital; central banks are invariably too small to provide capital sufficient to deal with banking sector problems of any significance. But central banks have responsibility for financial stability. Any problems caused by internationalisation are therefore central bank problems although the bank may well require government assistance to deal with them.

Advice on how to structure a national system is highly developed and practice, in the United States in particular where failures have been relatively common, has responded to try to construct a system where the incentives to restrict losses are compatible across the parties involved.¹¹ However, as soon as we look across borders the various countries' national systems are ill matched. Indeed in many cases they are explicitly contradictory. If each country attempts to minimise the losses in the event of a cross-border bank within its own jurisdictional powers it will almost certainly be doing so at the expense of losses in another jurisdiction.¹² While the European Union has been alert to these problems and has tried to construct the arrangements for handling failures so that the cross-border bank

¹¹ The phraseology used is loss 'minimisation' but clearly this is in practice with respect to an acceptable level of risk taking. Risk taking and hence loss making is an essential part of a successful banking system; the key is good risk management rather than risk avoidance per se.

¹² This principle, known as 'territoriality' is discussed at length in Baxter et al. (2004). The contrasting alternative is universality – treating the banking group in a single composite proceeding in one country (or at least with the local proceedings attached to the main proceedings). In practice many large banks will be subject to some uneven combination of the two.

is treated as a single entity under the Winding Up Directive¹³ and all creditors and debtors within its jurisdiction are treated equally according to priority, irrespective of their nationality or residence there are major gaps in the system (Hadjjemmanuil, 2003).

Outside the EU the problems are greater because there is no explicit drive to try to create an effective single financial market. Even in Australia and New Zealand, between which countries *economic* integration is more developed than in the EU, each country is currently trying to make sure that it can apply as near a national approach as is possible so that it can control the impacts on its own country. This to some extent destroys the point of cross-border banking if regulatory requirements restrict it to being essentially the linking of a set of largely independent national banks within an international group. The economies of scope, scale and knowledge transfer could be inhibited to the disadvantage of the customers and shareholders alike. While it has been argued that in practice the banks have found that there is relatively limited benefit in running their Australian and New Zealand operations together (see Tripe, 2004, for an analysis) this has not been the finding in Europe and banks such as Nordea in the Nordic region and Raiffeisen in central Europe and the Balkans have been running increasingly integrated operations.

The central bank is placed in a difficult position when there are cross-border banks – it has the responsibility for financial stability within its jurisdiction without necessarily having the means of achieving it. The position is particularly acute for a small country. If much of its banking system is foreign-owned then it may effectively be dependent upon the decisions of the authorities in other countries both for the avoidance of problems and for their resolution. If on the other hand, like Switzerland, it is home to large multinational banks whose main operations are abroad, it may not have the resources to handle a major failure on its own.¹⁴ (Sweden is facing the prospect of having both problems with being the home country for Nordea which has the large majority of its operations abroad and host to Danske Bank which is growing to systemic proportions.)

The problem is least acute when organising the effective *supervision* of a cross-border bank by the various authorities involved. The United States has already shown that it is possible to coordinate the activities of different supervisors (Bliss, 2007) and the supervisory committees that are required under the new Basel 2 arrangements help ensure that supervisors set up structures for sharing information and cooperating. These arrangements under Basel 2 probably do not go far enough to achieve adequate co-operation even in the EU and Vesala (2005), Mayes (2006) and Mayes et al. (2007) advocate the formation of a college of supervisors and the construction of a single database on the group to which all have access. Then at least the national authorities can be reasonably informed. We explore possible structures in the next section.

¹³ Directive 2001/24/EC of 4 April on the reorganisation and winding up of credit institutions OJ 2001 L 125/15.

¹⁴ In Switzerland for example the authorities have announced that there will be a cap of 4bnCHF on the payout associated with any single institution, thus limiting the liability of the insurance fund but leaving open the prospect of some residual disturbance to the financial system at home and abroad.

However, cross-border cooperation becomes much more difficult once positive action is required by the authorities, either to head off a failure, which we consider next, or to handle one, to which the present discussion is devoted.¹⁵

Clearly the better the system is at ensuring prudent behaviour and the earlier it manages to handle emerging problems then the fewer will be the failures that do have to be handled and the smaller their size. This will make problems of burden sharing and decision making easier.

While the Basel Committee lays down a set of criteria for determining the minimum adequate capital, whether under Basel 2 or the original proposal it does not except in very general terms lay down rules for behaviour for when banks become undercapitalised. This has been addressed most clearly in the US by the requirements of prompt corrective action (table 1) by which successive falls in capital below the required level trigger an increasingly harsh list of required and discretionary actions to bring the bank back to adequate capitalisation and to prevent management from worsening the position or extracting value from the company for their benefit or that of their shareholders at the expense of the creditors.

A key ingredient of the US system is that although the Federal Reserve System supervises many banks and bank holding companies it is not the institution that handles bank failures. That is the responsibility of the Federal Deposit Insurance Corporation (FDIC). The central bank manages its own exposures through the terms of its liquidity assistance. As a collateralised creditor it will be well placed in any resolution but will not direct it. It must therefore be confident that the regulatory structure will deliver financial stability. Furthermore, it is the FDIC not the Federal Reserve that makes the recommendation that a bank may present a systemic problem if it is resolved under the normal procedures – the ‘systemic risk exemption’.¹⁶ While the Federal Reserve, the Treasury and the Comptroller of the Currency have to agree for this exemption to be invoked, the central bank is not the leading player. However, the systemic risk exemption has not (yet) been invoked so its operation remains somewhat hypothetical.

In other countries the central bank plays a larger role but it is clear that any national arrangement that relies on confidence by one party in the mandate and likely actions of another independent agency is going to be difficult to replicate at the international level.

Cross-border institutional structures

There is a clear distinction between the sorts of arrangement that can be made within the EU or other groups of countries that are actively engaged in economic integration and

¹⁵ This is similar to John Pinder’s (1968) observation that it is much easier to arrange negative aspects of integration among countries, e.g. removing barriers and agreeing not to act against each other, than positive aspects, where harmonised legislation and new behaviour patterns need to be agreed.

¹⁶ Stern and Feldman (2006) argue that the Federal Reserve should try to ensure that banks are never allowed to become sufficiently large or dominant in markets that they are deemed systemically important and hence ‘too big to fail’.

more general international co-ordination. Neither the IMF nor the Basel arrangements under the auspices of the BIS show any particular inclination to try to create supranational organisations to deal with cross-border banks. Indeed the advice from the Basel Committee is straightforward (1996). Countries need to work together and the presumption is that they would do so under the leadership of the lead regulator in the home country. This means that different countries and authorities would need to co-operate and work together across different jurisdictions rather than within a single one.

This is a recipe for difficulty and it is really only the arrangements being set in place by the New Zealand authorities or something similar that make sense in this regard.¹⁷ New Zealand effectively requires that the cross-border nature of banks should not be such as to cause a problem – effectively trying to outlaw the difficulty. They have two simple requirements:

- Any bank that has functions which the authorities deem systemically important must structure itself in such a way that there is a viable local organisation that can operate separately and ultimately be taken over and run by the authorities without a break in business in the event of its failure
- There must be specific legislation in place that allows the authorities to step in if a bank becomes inadequately capitalised and impose a resolution of the problem if the bank cannot do so voluntarily.

The first of these is described largely as an ‘Outsourcing Policy’ (RBNZ, 2006) as it relates to the bank’s ability to keep operating in the event of the failure any of its ‘suppliers’ to deliver their services. Clearly this covers computer systems, ability to access the payment system, access to collateral and other essential services but it also covers decision making. The requirements are set out in Box 1. Since all the banks with systemic functions in New Zealand are foreign (Australian) owned their parents are of course major suppliers in this sense, and the New Zealand operation must be able to continue even in the event of the failure of the parent. It is therefore also a requirement of the New Zealand system that these banks be locally incorporated and have a local management team who can actually run the business and directors who are liable for the prudential operation and disclosure statements.

This immediately distinguishes the New Zealand situation from that in the EU/EEA as there one of the features of the single financial market is that a bank that is licensed in one member state can operate as branch in another member state without any local prudential hurdles and subject to the supervisory control of the authorities in the home, not the host, country.¹⁸ This same responsibility of the home country extends to undercapitalisation and failure and hence to deposit insurance.¹⁹ The New Zealand

¹⁷ The New Zealand arrangements have a fortunate neatness as the central bank, the Reserve Bank of New Zealand is responsible for banking supervision and the administration of failed banks. However, such arrangements could also be put in place where there are multiple authorities in a country but they would need an explicit legally enforceable agreement to do so.

¹⁸ Branches are required to adhere to the host country’s conduct of business rules and also to legislation covering employment, health and safety etc. like any other local firm.

¹⁹ There is a provision for a branch to top up its deposit insurance to the host country level through the host country’s deposit insurer (reduction to the local level could only be achieved by local incorporation).

system is thus a means of making separate jurisdictions work. It is particularly necessary in this case as Australia applies domestic depositor preference and New Zealand depositors would be lower ranked – thus possibly receiving very little, even nothing, in the event of a substantial failure. The position is exacerbated as neither country has deposit insurance, although Australia is exploring that option.

Box 1

The Reserve Bank of New Zealand's Outsourcing Policy

The arrangements must be such that:

- The bank's clearing and settlement obligations due on a day can be met on that day
- The bank's financial risk positions on a day can be identified on that day
- The bank's financial risk positions can be monitored and managed on the day following any failure and on subsequent days
- The bank's existing customers can be given access to payments facilities on the day following any failure and on subsequent days

However, such an outsourcing policy alone is not sufficient. If a bank becomes insolvent (or its net worth becomes negative) the authorities need to be able step in and take over the bank without delay. They need to be able to make a satisfactory estimate of the losses, assign those losses, and without a break open for business again under a public guarantee against any further loss. In intervening the authorities do not take on any of the losses themselves. It is only in subsequent operation that there is any exposure for the taxpayer. The New Zealand system is also unique in this regard although other systems, including the bridge bank arrangements in the US, have equivalent effect (Mayes et al, 2001; Mayes, 2006).²⁰ Under the New Zealand system a statutory manager is appointed by the courts. This manager determines which aspects of the bank need to be kept running, and after the loss assessment, applies it to the creditors of the bank in reverse order of priority until the bank is returned to solvency/positive net worth. This 'Bank Creditor Recapitalisation' gives the creditors a claim on the bank equivalent to a debt-equity swap. These claims may well prove tradable, especially when a capital injection is obtained to get the bank out of statutory management and back into normal operation. The shares of the previous shareholders will become worthless if the bank fails, although if eventually the creditors can be paid off and there is any residual after costs they could receive a compensating payment. They would not, however, be able to get the ownership of the bank returned to them.

The bridge bank concept in the US has similar characteristics but there the principal creditor, the FDIC (Federal Deposit Insurance Corporation) becomes responsible. The legal personality of the existing bank is terminated, the insured deposits and such other parts of the bank as the FDIC transferred to a new bank chartered by the Comptroller of the Currency, according to the principle of what the FDIC thinks will minimise its losses. Since banks are often parts of groups in the US, the FDIC has sometimes turned each

²⁰ The difference lies in the existence of deposit insurance where the authorities agree to compensate insured depositors for their losses.

subsidiary into a separate bridge bank rather than forming a single bank for the whole group.

It is clearly difficult to translate this arrangement into something that can be operated for cross-border banks unless each of the operating units can be carved off the group in the manner required in New Zealand. Ironically if the cross-border bank chose to operate entirely through branches (as has been proposed for Nordea under the European Company Statute, ref) then such a scheme could be administered by the home country authorities. As in the US they would be the insurer of the deposits across the whole group. Where the arrangement is more mixed, some national authorities may be prepared to see subsidiaries close because they are not of systemic importance, while others would wish to apply the bridge bank or an equivalent technique. This can apply equally to some host countries and to the home. For example, if none of the subsidiaries in a particular host country were of systemic importance to it, it would be unlikely to have any direct interest in participating in the financial support of a subsidiary (or the parent) in another country even though that may be of systemic importance there. It would only have regard to the spillover from such a systemic problem to its own jurisdiction or to the need to obtain matching support from the other countries for other international bank whose operations it does regard as systemic. Clearly if a branch of a bank that the home country did not regard as systemic were deemed systemic by the host country there would be a serious conflict of interest. The host authorities would have no means of keeping the whole banking group going and the home authorities might be unwilling to do so on another country's behalf if it does not minimise their own losses.

This implies that some joint arrangement needs to be established, but one that can operate swiftly according to some predetermined guidelines. Protracted committee discussions where unanimity among the countries is required at the time are not appropriate for a crisis. Some body has to have responsibility, adequate access to funds and technical expertise and the power to act, in many cases under the aegis of a court. This implies that if there is no supranational executive body and no international court to refer to then it will be under some national jurisdiction even if the consequences run over a group of countries. The pre-determined guidelines, while they cannot address every detail, need to have principles as to how systemic concerns will be addressed in any of the jurisdictions. If the parent organisation is taken into a bridge bank then clearly this effective change of ownership needs to apply to the subsidiaries even though they are subject to different jurisdictions and authorities. Similarly if the parent is allowed to fail but systemic subsidiaries become bridge banks again their needs to be a clear arrangement between the host authority that is effectively assuming ownership and the receivership estate in the home country. The pricing of such deals is likely to be controversial. If a new organisation is to be carved out of branches then the agreement will need to be even more complex but this latter route seems unlikely unless the branch is very free-standing.

Goodhart and Schoenmaker (2006) emphasise that burden sharing among the countries involved needs to be established in advance according to some simple rule such as the distribution of assets or deposits. It is inevitable that the cause of a problem is likely to be relatively concentrated, the actual losses unevenly distributed and the systemic need for

action asymmetric. Not only would an argument at the time, particularly over who is to blame and therefore over who should pay, render prompt solution impossible but it contravenes the whole idea of insurance where those who are lucky enough not to be affected provide the compensation to those who are.

However, in most European countries it is pointless to pursue this discussion at present as they do not have the power to step in and take over the bank from the shareholders in this manner. They either have to have the bank declared insolvent and hence almost certainly see its operations stop or they have to provide some sort of bailout, whether a loan or a guarantee or a combination thereof. Since the first route is unlikely to solve the problem of keeping systemic operations going, the latter route seems more likely. The drawback is that then there is a burden to be shared among the countries.

In the US the authorities can step in when a bank is still solvent but critically undercapitalised if the leverage ratio falls below 2% and the bank does not take action within a period of (90 days) that solves the problem to the satisfaction of the FDIC. While stepping in while the bank still has positive value entirely gets round the problem of burden sharing, it seems unlikely that such an intervention would be permitted under European law (Hadjimmanuil, 2003). The problem therefore is to intervene as soon as losses appear and to take strong action to turn the bank round as soon as capitalisation falls below regulatory requirements – Prompt Corrective Action (PCA). This we deal with in the next section. However, it is worth noting at this point that Eisenbeis and Kaufman (2006) have an ingenious suggestion for enabling PCA in cross-border banks. They argue that applying the European Company Statute should be sufficiently attractive that systemically important cross-border banks will want to opt for it. Then they suggest that since the bank will have a new legal personality it will need to reapply for banking status and hence the authorities in the home country can insist that being subject to coordinated PCA is condition for granting this new licence. This gives a single cross-border system and adequate powers of intervention all in one step. The drawback is that no bank has yet found the Statute sufficiently attractive even without the powers of intervention to adopt it, which makes the idea that they would adopt it with such powers unlikely.

Even within the EU there is considerable variety over how the responsibility for the functioning of the financial system is allocated, both with respect to sectors – banks, insurance companies, financial markets, payment and settlement, pensions and other institutions²¹ - and functions – prudential regulation, crisis prevention and management, conduct of business. As a result there is a wide variety of authorities with overlapping mandates that have to get together to work out how to handle the problems. The EU with the ESCB, CEBS, CESR and CEIOPS²² has decided to cut the cake four ways but the authorities in the member states do not map neatly into this (Masciandaro et al., 2006; Eisenbeis and Kaufmann, 2006). To this is added considerable variety in powers and

²¹ Indeed there is continuing discussion about the range of non-bank institutions to be covered: building societies, investment funds, finance companies, sharebrokers, custodians, hedge funds,

²² The EU system is littered with acronyms: ESCB European System of Central Banks, CEBS Committee of European Banking Supervisors, CESR Committee of European Securities Regulators, CEIOPS Committee of European Insurance and Occupational Pension Supervisors.

approach, despite the unifying framework of EU legislation. Elsewhere without that unifying framework the variety is even larger and the major institutions that have to be handled run right across many of the boundaries as set out in the various chapters on Large Complex Financial Institutions in Evanoff and Kaufman (2005).

While it is always tempting to want to cut through this complexity and advocate the setting up of the central bank as the sole prudential authority for all financial institutions²³ as in Ireland, the Netherlands and New Zealand, in practice central banks have to deal with the complexity and accept that they will have to handle their responsibilities in co-operation with other usually independent entities whose mandates may well be somewhat contradictory. This inevitably means that a network of explicit and implicit agreements and arrangements has developed. While within individual countries these can have full legal force, although they have frequently taken the form of softer 'Memoranda of Understanding', internationally they tend to rely on soft law and hence will be difficult to enforce and the difficulty of obtaining recompense even greater. The Maastricht Treaty setting up the ESCB and the ECB is very much the exception; there the law is clear.

As we have noted a supra-national organisation becomes most important when it comes to either PCA or intervention on insolvency. It is probably possible to organise co-operative arrangements for satisfactory supervision and exchange of information even if these are not the theoretically optimal arrangements (Schoenmaker and Oosterloo, 2007). Provided that the ordinary insolvency procedures are thought adequate then current arrangements could work. As soon as intervention for systemic reasons is required then there is a prima facie case for new institutions. They could take the form of a designated resolution agency to handle the problem. Since the number of banks across the world which have systemic implications outside their domestic is relatively limited it might be possible to handle this on a case by case basis.²⁴ The resolution agency would presumably be based in the home country but with the ability to draw on resources in the host countries. Since such failures are likely to be small and perhaps even nonexistent there seems little justification for setting up much in the way of an enduring organisation. It would probably form part of the home country's existing resolution arrangements. The FDIC model is probably not the right way to envisage this unless all banks are to be treated in a similar manner to the US. Most insolvencies will be primarily national affairs to be sorted out by national authorities.

The position in the EU is somewhat easier to envisage as there a new European level organisation to handle resolutions in these 30 or so banks identified by Schoenmaker and Oosterloo (2007) might make sense. It could be labelled EDIC (European Deposit Insurance Corporation) or European Resolution Agency. Various ideas have been advanced as to whether it should be independent or linked to the ECB (Di Giorgio and Di Noia, 2003; Masciandaro, 2004; Schoenmaker and Wierds, 2004) but there is no need for a grand organisation, merely a framework that can leap into action when problems appear. The trigger for action would come from the supervisory process. However, it will need to have a noticeable permanent staff if like the FDIC it is to be actively involved in

²³ Such an authority could also include conduct of business as well as prudential

²⁴ Schoenmaker and Oosterloo argue that there are only around 30 such banks in the EU.

the supervision of these 30 or so large banks. For this system to work either the bank needs to be headquartered in the EU or its EU operations need to be a viable unit (or group of units) separate from the parent. Outside the EU the role of host countries will inevitably be smaller and require great confidence in the home country authorities. If that does not exist then the likely response is likely to be the inhibition of cross-border arrangements at least to the New Zealand extent.

Preventing problems

Key to avoiding problems with cross-border banks lies in the actions to reduce the potential causes of problems, both macroeconomic ones and those specific to the bank, and in those actions that are taken to reduce the impact when problems are imminent. The macroeconomic actions will normally be purely national in character and not represent any deviation from the concerns of monetary and exchange rate policy that we have already dealt with. Concerted pre-emptive action across countries, taken to preserve macroeconomic stability, are the exception rather than the rule, except of course in the case of the euro area and other multi-country currency zones.²⁵

The central bank normally needs to act when there is a problem of liquidity rather than solvency. The question then arises whether there are cross-border aspects to liquidity provision that cannot be handled by the national authorities acting separately. To some extent the problem may be easier where each country has its own currency as central banks normally only take collateral in their own currency. However, where a country has a currency board, first of all it may be rather difficult for the currency board to make any collateralised advance. In any case the collateral would presumably have to be in the backing currency.

Even so there is a danger of the bank trying to shop among regimes to find the best terms that it can then use across the whole range of its operations. The major weakness that triggers the need for emergency assistance may be in another market from that of the central bank being approached for funds. In the absence of co-ordination among the central banks, one central bank that thinks that the solvency problems are worse and hence that collateral values are impaired may hope that the others will make advances against collateral so its own risks are reduced. It therefore seems inevitable that requests for emergency lending require consultation and information sharing across the range of central banks involved – even if, as in the Eurosystem, the responsible national central bank steps in, takes the risk upon itself, and informs the others of what it has done after the event.

However, in recent years as part of maintaining financial stability central banks have developed a concept of macro-prudential risk management, which forms part of the pre-empting of problems. It is not immediately clear what this term embodies except that it refers to risks that are not related to individual financial institutions. To some extent it is simply delineated by the content of published ‘Financial Stability Reviews’. Thus it

²⁵ The other multi-country currency areas, such as the franc zones, are not similar in character to the euro area.

clearly involves the assessment of macroeconomic risks, including market risk and exchange rate risk. It includes the assessment of risks from the structure of the financial system and how it is regulated. It includes risk from concentration of activity by financial institutions and the development of new products, i.e. risks only apparent from the aggregation of actions each of which appears individually prudent to those taking them. However, information and associated cautioning form only a part of the response. Central banks take direct action to reduce and manage risks through monetary policy, provision of payment services and insurance and altering the structure as well as indirect pressure on other agencies and government to address the risks. Further, skilled as they are central banks can not foresee everything – some events may be intrinsically unforeseeable, and other problems involve uncertainty rather than risk. Not every failure is preventable.

Nevertheless, prevention is important. The key ingredients to preventing problems are

- Having a clear and credibly workable exit strategy for failing banks that does not involve a bail out of the existing owners or creditors – this way there is a strong incentive to owners and creditors to avoid failure
- Having a framework for ensuring prudential capital and risk management standards such as those recommended by the Basel committee
- Ensuring that the structure of financial markets limits the risks – such as avoiding excess concentration, ensuring that the regulatory authorities have clear mandates and compatible incentives, ensuring that there are properly functioning routes to market discipline
- Ensuring that macro-risks are addressed and markets and institutions properly informed
- Ensuring that crisis management tools are in place and thought to be effective
- Ensuring that prompt action is taken to resolve any problems that do emerge in individual banks.

We have already noted that the requirements for prompt corrective action in the US provide strong incentives for banks to recapitalise voluntarily as problems worsen, for the alternatives, of increasingly harsh mandatory requirements from the FDIC and ultimately takeover and possibly liquidation, are clearly less attractive. The same applies in Mexico where in some respects the mandatory requirements are harsher (Labrosse and Mayes, 2007). Most countries have requirements for action and powers of intervention but on the whole they are neither mandated in the US manner nor so clearly time limited. If the treatment of cross-border banks is to be effective it is clear that it has to go beyond coordinated supervision and include coordinated intervention according to rules agreed beforehand without the pressure of an incipient crisis. While it would help agreement if these rules were widely promoted, say by the Basel Committee, it is nevertheless possible for the colleges of supervisors to agree them and set them out as a written agreement.

Clearly someone needs to be in charge in just the same way that there is a lead supervisor for the coordinated monitoring of the banking group. However, here there can be an institutional mismatch. In the US there is a resolution agency, the FDIC, that seeks to minimise its losses by its actions while the bank is in trouble but not yet facing insolvency or takeover. This separation of the responsibility for efficient resolution from

the responsibility for monitoring to ensure compliance means that there is much less danger from forbearance. Without such separation, intervention can be thought to imply supervisory failure. If some countries have a deposit insurer with strong powers, charged with minimising its losses, while others have deposit insurers that simply pay out on the say so of the supervisory authority, the pressure for action and the nature of it will vary from country to country and make agreement more difficult. Where there is either implicit insurance or even no insurance the position is even more complex.

LaBrosse and Mayes (2007) argue that in many countries the structure of the deposit insurance system is such that the countries either implicitly intend or will find themselves forced to issue a blanket guarantee if a large institution gets into difficulty. As Kaufman (2006) points out, if depositors are going to be protected adequately enough for them not to run on the bank, they need to know that they will have continuing access to their insured funds with only a small break if any. The prospect of substantial delays is not plausible, yet in the EU the Deposit Insurance Directive only requires a payout within 90 days of establishing the existence of the liability and even then the 90 days is extendable twice if there are problems in identifying the extent of the insured deposits and the beneficial owners. It thus seems likely that, as was found in the Nordic crises, some other means of offering people continuing access to their accounts will be required, whether through blanket guarantees as in Finland and Sweden or through takeover of the banks as in Norway. If the authorities cannot step in to form a bridge bank or pass the deposits over to another bank to provide continuing services, then the alternative is liquidation and a payout by the insurer. Unless there is an interim dividend, the insurer is going to have to cover the full value of the payout for some time, requiring either the ability to borrow or very extensive funding until the rest of the banking system can refinance it.²⁶

This likelihood of serious difficulties in intervention on reaching zero net worth, or what other intervention point is used, and the moral hazard from the expectation of a bailout being forced in these circumstances to avoid an interruption in business emphasises the importance of PCA. The rules for such PCA need to be at least as specific as in the US, there need to be designated authorities in each jurisdiction who will carry it out and a clear leader to organise and co-ordinate the action. While a 'collegial' approach may be the best way to agree the plans and discuss progress it must be possible for the lead organisation to act even in the event of disagreement. As a consequence the PCA rules need to be set out in the form of a legal agreement amongst the designated authorities. Furthermore the participating authorities may have to change their own national regulations if they lack the powers to do what PCA requires or if cross-border and national banks will be treated unequally.

Cross-border financial markets

Central banks have been playing an increasing role in international financial markets and in the payment and settlement system. Inside the EU this is understandable as they have a

²⁶ If the insurer is publicly financed then the problem is rather different but it still leaves the government to make a choice over whether it wishes to offer some sort of bailout or guarantee that involves less expenditure up front or a repayment of depositors, which is itself expensive to administer.

positive duty to encourage a Single European Payments Area and the development of efficient European securities markets. It is by no means clear that the central banks need to act as the provider but in the case of inter-country payments in euro this was taken as a given, with the setting up of TARGET and its more recent development into TARGET2 with a wider range of services and more restricted range of platforms.

However, getting progress through the private sector in securities settlement has proved difficult for two main reasons. First of all it is a network industry and there needs to be a single system in which all can participate. No one wants to be a first mover, make a large investment and then find the industry goes in a different and incompatible direction. Agreement is needed and central banks can be catalytic in getting the parties together. But the second reason limits the efficacy of this. There are relatively few major players in the industry and an expectation that there may eventually be only one main securities market in the EU or at least just one or two dominant systems as in the US, with the NYSE, Nasdaq and DTCC. Clearly each incumbent would like to be the survivor and strategic positioning in the interim will lead each of them to try to get an advantage over the others.

The response has been for the Eurosystem to suggest that it will itself set up the system, based on the TARGET platform and labelled TARGETSecurities. While this in part may be an incentive for the market to come up with its own solution, it is largely a response to a problem that is specific to Europe with its single currency running across a number of jurisdictions. There is a clear tension between the role of the central bank in ensuring the existence of an efficient financial infrastructure with open entry and adequate resilience and actually being the provider of some or all of the system.

Much of the rest of the world does not face the same difficulties although it is generally the case that it is much more difficult to conduct transactions across borders than within them. Nevertheless it is still necessary to have some means of ensuring that the national authorities provide adequate supervision of institutions that are providing key cross-border services. SWIFT is an obvious case in point as is CLS in the foreign exchange market. Here it seems to have been possible to get a team of regulators led by the home country to put together a satisfactory approach so that there can be confidence that the cross-border system works to a satisfactory standard and provides against operational and other risks to an extent that engenders general confidence.

In cross-border financial markets the role of the central bank is small and largely limited to the concerns of financial stability. Major failures in the cross-border system would have important domestic consequences. The problems international financial markets present for national central banks depend on how central banks see their responsibility to these markets. If they see themselves as obliged to stabilise them (the “Greenspan put”) then for most countries the case is hopeless. We do not therefore have to consider whether central banks should so view their role. However, if they feel they have a national role to stabilise financial prices, whether in securities markets or real estate, this will have implications for international markets if only because of their interconnection. To some extent this stabilisation will come not just from the operation of monetary policy

but from the rules that govern lending and securities market operation. To some extent it is possible for investors to get round national constraints by operating in more than one country.

This does not mean there can be total neglect of financial market linkages between countries. As is traditional, should a market collapse trigger problems within a banking sector the central bank should stand ready to supply liquidity. (Wood, 1999) Further, financial markets can transmit problems. See for example the East Asian crisis. Note though that they transmitted problems only to countries with unsound banking systems. It would therefore appear fair to say that those international markets do not create problems for central banks, but that they increase the incentives to ensure that the domestic banking system is prudently run. Ensuring that has been seen as a central banking responsibility so long as – indeed, by some arguments before – central banks existed. Observe Thornton's (1802) insistence that unsound banks should be allowed to fail in a crisis. When that is known to be central bank policy most banks will seek to be prudent.

Some Historical Evidence

The gold standard was in many ways a monetary system like that of today. Central banks had two obligations – maintaining convertibility and maintaining financial stability. The system can, indeed, be interpreted as a monetary rule. (See Bordo and Kydland, 1995) As Capie(2002) argued, accepting the two obligations of the standard were what defined a central bank. Further, there were international banks. Of course the importance of these varied from country and from time to time, but they were an important part of the British banking system by the last quarter of the 19th century – British banks had an extensive presence overseas. Much of this presence was in British colonies, and these were, as noted above, on currency board systems based on sterling. But not all the overseas presence was of that form. Britain also had fairly important banking connections with South America, and it is from there that an illuminating episode comes. This episode is the Baring crisis of 1890.

Barings was a bank of great reputation, albeit one that was by the last quarter of the 19th century losing out in its traditional European business to more alert firms such as Rothschilds. To redeem its fortunes it went to new territories, particularly to Argentina. And that was where the difficulties arose.

In April 1890 the Argentinean government found difficulty in repaying its debt; and the national bank suspended interest payments on *its* debt. This precipitated a run on the Argentinean banking system, a run which was in July followed by a revolution. Barings had lent very substantially to Argentina, and faced what seemed likely to be heavy losses. It revealed its difficulties to the Bank of England on November 8th.

The Bank was horrified, as it feared a run on London should Barings default. A hurried inspection of Barings suggested that the situation could be saved, provided that current and immediate obligations were met. A consortium was organised, and capital, initially £17m, was injected. The news leaked by 15th November, and there was some modest

switching of bills of exchange into cash, but no panic and no run on either sterling or the London markets. Barings was in due course liquidated and then refloated as a limited company under new management.

Various features of this are of interest, not least the absence of panic in the London money market. But of particular relevance at this point is the demonstration that injection of capital to an international bank can be readily engineered, even in a fixed exchange rate system, provided that the providers of capital are willing. Willingness in this case was produced not by any set of rules, or indeed by coercion, but by an awareness that cooperation would produce mutual benefits. In this case the benefits were believed to be the continued importance of London as an international financial centre. This may suggest that in designing rules for the preservation of financial stability across national boundaries heed must be paid to national self interest, both political and financial.

Conclusion

The internationalisation of banking does not prevent national central banks taking classic lender of last resort action when it is necessary to do so. Hence liquidity problems can be handled in the traditional manner. But where capital is required problems are much less tractable, and pessimism is hard to resist. Complete separation, or the ready possibility of it, as New Zealand requires, produces an environment where stability can be maintained. But the price may well be high in terms of efficiency gains foregone. Clear mutuality of interest, as was displayed in London when Barings failed in 1890, can ensure provision of capital. But what can ensure clear mutuality of interest across national boundaries? Much can be done to help prevent problems, but problems requiring provision of capital are inevitable. The conclusion, a pessimistic one, therefore appears to be that the internationalisation of commercial banking although in many ways capable of being handled by national central banks does create for them a problem which is by its nature one they can not, and never will, solve. In the EU we can expect that this will ultimately lead to the development of new transnational body or the assigning of powers to an existing institution such as the ESCB. Outside the EU the solution is less obvious.

References

Allen W. A. and Wood G.E.(2006) 'Defining and Achieving Financial Stability', *Journal of Financial Stability*, 2(2), 152-172.

Bagehot, W (1873) *Lombard Street*, London: John Murray.

Basel Committee on Banking Supervision (1996) *The Supervision of Cross-Border Banking*, Basel, October.

Baxter, T.C., Hansen, J and Sommer, J.H. (2004) 'Two Cheers for Territoriality: an essay on international bank insolvency law', *American Bankruptcy Law Journal*, 78(1), 57-91.

Bliss, R.R.(2007) 'Multiple Regulators and Insolvency Regimes', in D G Mayes and G E Wood, eds (2007), pp.132-154.

Bordo, M and Kydland, F. (1995). 'The Gold Standard as a Rule', *Explorations in Economic History*, 32(4), 423-464.

Calomiris, Charles W.(1998) 'The IMF'S Imprudent Role as lender of last resort', *Cato Journal*, 17(1), 275 -294

Capie, F (2002). 'The emergence of the Bank of England as a mature central bank', in D. Winch and P.K. O'Brien eds. *The political economy of British historical experience 1688–1914*, New York: Oxford University Press.

Di Giorgio G., and Di Noia C. (2003). 'Financial Market Regulation and Supervision: How Many Peaks for the Euro Area?', *Brooklyn Journal of International Law*, 28, 463-493.

Eisenbeis, R.A. and Kaufman, G.G. (2006) 'Cross-Border Banking: Challenges for Deposit Insurance and Financial Stability in the European Union', Federal Reserve Bank of Atlanta Working Paper 2006-15.

Evanoff, D and Kaufman, G, eds. (2005) *Systemic Financial Crises: Resolving Large Bank Insolvencies*, Singapore: World Scientific.

Frankel, J. A and Rose, A.K. (1998). 'The Endogeneity of the Optimum Currency Area Criteria,' *Economic Journal* 108, July 449:1009-1025.

Goodhart, C.A.E. (1999) "Myths about the lender of last resort". Henry Thornton Lecture, City University. Reprinted in F.H. Capie and G.E. Wood, eds. *The Lender of Last Resort*, Abingdon and New York: Routledge.

Goodhart, C.A.E. and Schoenmaker, D (2006) 'Burden sharing in a banking crisis in Europe', *Economic Review* 2, 34-57, Sveriges Riksbank

Hadjjemmanuil, C (2003) 'Bank Resolution Policy and the Organization of Bank Insolvency Proceedings: Critical Dilemmas', pp.272- 330 in Mayes and Liuksila (2003)

Hayek, F.A.(1939) "Introduction" to the 1939 edition of Thornton (1802).

Hawtrey, R. (1932) *The Art of Central Banking*, London: Longmans, Green, and Co.

Hicks, J.R. (1967) "Thornton's 'Paper Credit'" in *Critical Essays in Monetary Theory*, Oxford: Oxford University Press.

Horner, F (1802) "Thornton on the Paper Credit of Great Britain". The Edinburgh Review 1(1)

Kaufman, G (2006) 'Using efficient bank insolvency resolution to solve the deposit insurance problem' *Journal of Banking Regulation*, 8(1), 40-50.

Masciandaro D. (ed.) (2004) *Central Banks and Single Financial Authorities in Europe*, Cheltenham: Edward Elgar.

Masciandaro, D, Nieto, M and Prast, H (2006) "Who Pays for Banking Supervision? Principles, Practices, and Determinants" (April 2006). University of Bocconi Monetary and Financial Economics Working Paper No. 169

Mayes, D G (2006) 'Cross-border financial supervision in Europe: Goals and transition paths' *Sveriges Riksbank Economic Review* 2, 58-89.

Mayes, D G, Halme, L and Liuksila, A (2001) *Improving banking Supervision*, Basingstoke: Palgrave.

Mayes, D G and Wood, G E (2007) *The Structure of Financial Regulation*, Abingdon and New York: Routledge.

Mayes, D G, Nieto, M. and Wall, L.A. (2007) 'Multiple Safety Net Regulations and Agency Problems in the EU: Is Prompt Corrective Action Partly the Solution' Bank of Finland Discussion Paper

Pinder, J. (1968), 'Positive Integration and Negative Integration: Some Problems of Economic Union in the EEC,' *The World Today*, 24/3, 89-110.

Reserve Bank of New Zealand (2006) 'Outsourcing Policy', BS11, Wellington, January.

Rockoff, Hugh (1986), "Walter Rockoff and the Theory of Central Banking" in F.H. Capie and G.E. Wood, eds., *Financial Crises and the World Banking System*, London: Macmillan.

Schoenmaker, D and Oosterloo, S (2007) 'Cross-border Issues in European Financial Supervision', in D G Mayes and G E Wood, eds. (2007), pp. 265-285.

Schoenmaker, D. and Wierds, P. (2004), 'Survival of the Fittest: Competing Models for Financial Supervision in Europe', *Current Politics and Economics of Europe*, 13, 31-46

Schwartz, A (1999) "Is there a need for an international lender of last resort?", *Cato Journal*, 19(1), 1-6.

Stern, G.H. and Feldman, R.J. (2006) 'Managing TBTF by reducing systemic risk', *The Region*, June, 18-21, 46-49

Thornton, H. (1802) *An Enquiry into the Nature and Effects of the Paper Credit of Great Britain* Reprinted 1939, London: Allen and Unwin.

Tripe, D (2004) 'Efficiency in Integrated Banking Markets – Australia and New Zealand', mimeo, Massey University.

Vesala, J., (2005), "Prudential Supervision and Deposit Insurance Issues Raised by the European Company Statute", Colloquium on the European Company Statute, ECB, Frankfurt, 23 February.

Wood (1999) "Great Crashes in History: Have They Lessons for Today?" *Oxford Review of Economic Policy*, 15(3), 98-109.

Table 1 Summary of Prompt Corrective Action Provisions of the Federal Deposit Insurance Corporation Improvement Act of 1991

Description	Mandatory	Discretionary	Capital Ratios (percent)		
			Risk Based Total	Tier 1	Leverage Tier 1
<i>Well capitalised</i>			>10	>6	>5
<i>Adequately capitalised</i>	No brokered deposits, except with FDIC approval		>8	>4	>4
<i>Undercapitalised</i>	Suspend dividends and management fees Require capital restoration plan Restrict asset growth Approval required for acquisitions, branching, and new activities No brokered deposits	Order recapitalisation Restrict inter-affiliate transactions Restrict deposit interest rates Restrict certain other activities Any other action that would better carry out prompt corrective action	<8	<4	<4
<i>Significantly undercapitalised</i>	Same as for undercapitalised Order recapitalisation* Restrict inter-affiliate transactions* Restrict deposit interest rates* Pay of officers restricted	Conservatorship or receivership if fails to submit or implement plan or recapitalize pursuant to order Any other provision below, if such action is necessary to carry out prompt corrective action	<6	<3	<3
<i>Critically undercapitalised</i>	Same as above Receiver/conservator within 90 days* Receiver if still critically undercapitalised after four quarters Suspend payments on subordinated debt* Restrict certain other activities				<2

* Not required if primary supervisor determines action would not serve purpose of prompt corrective action or if certain other conditions are met.

Source: Board of Governors of the Federal Reserve System adapted from Eisenbies and Kaufman (2006)