

**Institutional Separation Between
Supervisory and Monetary Agencies**

By

**Charles Goodhart
and
Dirk Schoemaker**

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Charles Goodhart is a Professor of Economics at the London School of Economics and is a member of the Financial Markets Group. Dirk Schoenmaker is a Research Officer on the ESRC funded project on Financial Regulation at the LSE Financial Markets Group. Any opinions expressed here are those of the authors and not necessarily those of the financial Markets Group. Financial support from the ESRC as part of the Functioning of Markets Initiative is gratefully acknowledged.

ABSTRACT

The paper investigates whether monetary policy and banking supervision should be separated, or not. It starts with a historical evolution of the Central Bank's micro-function (banking supervision). The role of the lender of last resort and the introduction of deposit insurance is discussed. There is currently a diversity of institutional arrangements, but the differences are found to be greater in appearance than in reality.

The main argument for divorcing the monetary from the bank regulatory authority is that the combination of functions might lead to a conflict of interest. This conflict can arise in different ways. The most important instance is that interest rates are held down because of concern with the 'health' of the banking system, when purely monetary considerations suggest higher rates. It is argued that this conflict between 'regulatory' and 'monetary' objectives depends to some extent on the structure of the banking and financial systems (i.e. whether banks are dependent on wholesale or retail markets for short term funding).

A first argument against separation is the role of the Central Bank in the payment system, in particular with respect to preventing systemic risk. The different payment arrangements are analysed. In so far as the Central Bank as lender of last resort is likely to support a failing participant, it is assuming the risks and effectively becoming the implicit guarantor of the system. Although Central Banks implement risk reduction policies, some risks originate beyond the

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I INTRODUCTION

The early history of Central Banking led to the functions of monetary management and the role of Lender of Last Resort being combined within the nascent Central Bank (see Goodhart, 1988). Where established, (e.g. in Sweden, UK, France, Italy), the Central Bank was the government's bank, and, until the latter part of the 19th century, generally the largest bank within the economy. As such, it was assigned the overall responsibility, explicitly or implicitly, for maintaining currency convertibility into specie, the prime function of macro-monetary management until 1913.

Because of its role and power, the Central Bank had the finest credit standing in the country. Consequently, when all other channels were closed, desperate financial institutions would turn to the Central Bank as Lender of Last Resort. Much of the best writing, and thought, about the role of the Central Bank, (e.g. Thornton, 1802; Bagehot, 1873), was concerned with the appropriate responsibility of the Central Bank in this role.

Bagehot (1873) wrote Lombard Street in the aftermath of the Overend Gurney crash (1866) when there was some suspicion, at least, that the unwillingness of the Bank to support that House was due to commercial rivalry. While it was accepted that the Central Bank should only attempt to assist those banks which could expect to be (or to regain) solvency under normal (non-panic) conditions, the point was clearly made that a Central Bank should seek to act for the public good, and not simply as a private competitor for business; see, for example, Chapter VII of Lombard Street; especially the final two pages.

Indeed, it was the willingness of Central Banks to take the lead in bank rescues during the late 19th century that helped to establish their role as a quasi-official monetary authority. The Bank of England's rescue of Baring Bros, 1890, is probably the best known, but both the Banque de France and the Banca d'Italia were similarly involved in crisis management and bank rescues. Thus, from an early date, the functions of macro-monetary policy and of micro crisis management were jointly carried out within the Central Bank.

Yet this latter function, of crisis management, was limited in scale and scope. It was limited in scale, because the amount of Central Bank's shareholders' funds, (the shareholders in the Bank of England being in the private sector until nationalisation in 1946), which could be applied, and possibly lost, without causing a scandal and a public outcry, was strictly limited. Hence the Bank of England, and most other Central Banks in such circumstances, acted (and continue to act) in most such circumstances where the sums at risk are considerable as a *primus inter pares*, organising and leading a joint rescue party of the relevant group of banks. Except in cases involving relatively small amounts, the Central Bank has rarely been able, or willing, to act on its own. In that respect the rescues orchestrated by the Central Bank, but largely financed by the other associated commercial banks, are not dissimilar to those arranged by a collectivity of commercial banks acting jointly in a Clearing House, as used to occur in the USA, see for example Timberlake (1984). The difference is that the leader of the orchestra has been allocated that role in advance, and is in a non-competitive position vis-a-vis both those institutions to be putatively rescued, and those being asked to put up the money. Again, the analogy of such a rescue mechanism with those organised by the IMF for the continuation of commercial bank lending to certain LDC borrowers is obvious.

Not only was the potential scale of Central Bank crisis management limited by the size of its balance sheet, (NB, it could generate cash without limit by its open market operations, but the size of losses it could absorb was limited by the size of its free capital), but the scope of its regulatory and supervisory involvement was also, at least initially, restricted. At any rate until 1914, (and to some large extent thereafter, and still), Central Banks saw themselves primarily as banks, albeit of

a rather special kind, rather than as official agencies, or public sector bodies. While it was regarded as appropriate for them, as for any other commercial banker, to assess the quality of the paper offered by other banks on the market, and to use standard, generally available, techniques for assessing (potential) counterparties' credit-worthiness, the idea that the Central Bank should have a formal duty to inspect and to give regulatory orders to the other commercial banks would have been anathema both to those banks and to the Central Bank at any time prior to 1914.

Consequently the adoption of a Lender of Last Resort function did not imply any large scale exercise of supervisory or regulatory operations. Until the secondary (fringe) banking crisis in 1973/74, the supervisory functions of the Bank of England were largely limited to ensuring that the central money market, through which additional liquidity was channelled, would be in good working order in all eventualities. To this end one senior official in the Bank, the Principal of the Discount Office, undertook relatively strict supervision of the handful of comparatively small Discount Houses who were the central institutions in that market, and somewhat looser supervision of the merchant bank members of the Accepting Houses Committee, whose acceptances (bills) were traditionally the main instruments traded in that market, along with Treasury Bills. Until the first Banking Act (1979), there was no formal mechanism for the regular supervision of banks, though banks had to apply, to a variety of official bodies, for initial recognition to undertake various functions, and also had to apply to the Clubs involved to be accepted as members, e.g. the Finance Houses Association. The Bank of England would often be consulted in such cases, but this hardly represented regular, formal supervision.

Given, then, that from around the 1880s until 1914, there was some implicit guarantee that (potentially solvent) banks would be saved by an organised rescue, whereas there was virtually no formal system of supervision and regulation in most countries with Central Banks, how was moral hazard avoided? Part of the answer was that the likelihood of rescue remained highly uncertain. Investors were aware that bank failures could, and still did, occur. Moreover, since any rescue was likely to be a joint exercise, even if orchestrated by the Central Bank, the bank to be rescued needed to be a member in good standing of a club of banks that would be prepared to rally around to provide help. Those outside the club, e.g. British building societies before 1914, could expect no such help, (as was also true of Trust Companies in New York in the crash of 1907). The need to be a member of a specific club, with certain accepted rules of conduct, (which rules were, however, not always in the interests of the general public), in order to stand much chance of a concerted rescue, again acted to contain moral hazard. The other club members, being in the same line of business, would be as likely to spot aberrant, and excessively risky, behaviour as quickly as any external supervisor, (in part because they knew that they might be asked to share the cost of rescue), and would be expected to make their views clear to the Central Bank if later asked for support.

In effect, this was largely a system of self-regulation, through cartelized banking (financial) clubs, under the leadership of the Central Bank. This system subsequently ran into increasing difficulties for a variety of reasons. First, deregulation and fierce (international) competition led to a collapse of the cartelized banking clubs with their restrictive practices. This tended to lead to some diminution in the willingness and ability of the system to apply mutual surveillance, but much more important has led to far greater reluctance of the members of a club to use their own funds on the rescue of competitors. The Bank of England had great difficulty in persuading other banks to share in the rescue of Johnson Matthey Bankers in 1984. Where deposit insurance is financed primarily by the contributions of the member financial institutions, there are great difficulties in obtaining any agreement on the appropriate coverage, or premium charges, to be applied. The break-down of the dividing lines between the previously distinct clubs, the resulting fuzziness of the structure of the financial system, has made any self-regulatory system that much more difficult.

In addition, this fuzziness poses major problems for the effective regulation of the emerging

financial conglomerates. The question can be raised whether separate regulators for banking, securities and insurance activities (perhaps with a lead regulator, like the Bank of England in the UK for institutions which are jointly supervised by the Bank of England and the Securities and Investments Board) are still effective. One of the rationales for mergers between banks and insurance companies is a better match of assets with liabilities than can be obtained in the individual cases (banks have largely long-term loans and short-term liabilities, while insurers carry mostly marketable securities against long-term liabilities). Moreover, some banks are looking for alternative sources of funding as the availability of 'cheap' (i.e. almost non-interest bearing) retail deposits is decreasing. Another rationale can be found on the marketing side: the retail outlet of banks, which is becoming less and less important for banking business, can be used for selling insurance products.

These rationales for merging show that the bank and insurance parts are not likely to stay separated, not even in a holding structure with legally separated subsidiaries, but will try to integrate to reap such benefits. Furthermore, in a holding structure the decision making power may be found at the level of the holding company, rather than at that of the subsidiaries. To 'level' the regulators, they might have to join forces and to supervise both at the subsidiary and holding levels. A single agency for bank, securities and insurance supervision might be the answer rather than intensified cooperation (see, for example, the complex, and to date fruitless, attempts of bank supervisors (BIS) and securities supervisors (IOSCO) to establish common capital standards for securities activities). Denmark, Sweden and Norway have already merged agencies for overall regulation and supervision (see Appendix 1a).¹ An argument can be made for placing such a combined regulatory agency outside the Central Bank,² e.g. to avoid expectations of Lender of Last Resort assistance for the entire financial conglomerate rather than only for the banking subsidiary.

Second, the scale of funding necessary in many cases (e.g. Scandinavia, Japan) has gone far beyond the sums which the Central Bank can provide from its own resources, or which the other commercial banks (financial institutions) are able, and/or willing, to provide themselves. Consequently there has been no alternative in many cases but to resort to the deeper pockets of the tax-payer (as in the USA for the banks, 1932/33, or the S&Ls recently; and as in Scandinavia in the last few years, and in Japan with the RTC). When the government has been providing the funds, either directly to rescue the banks, or indirectly via institutions established to support the banking system, it is likely to wish to have a final oversight in the operation of the regulatory system. He who pays the piper, calls the tune. As the rescues are increasingly being financed by the tax-payer, so the responsibility for supervision and regulation of the system - in order to avoid excessive calls on such tax-payers' funding - has been passing more and more from Central Banks to separate agencies established under the aegis of the authorities.

Indeed, in our view the question of where the final responsibility will lie for supervision and regulation of the banking system will depend on the essentially mundane issue of who pays if, and when, things go wrong.

¹ In the Netherlands, where the prohibition of bank-insurance mergers was lifted in January 1990, the Central Bank (responsible for banking supervision) and the Insurance Chamber signed a protocol to establish a working relationship in co-ordinating supervision of bank-insurance conglomerates. See OECD (1992, p.79-87) for recent developments in the field of cross-sector supervision.

² See also the Maastricht Treaty (Council and Commission of the European Communities, 1992): In Article 105, Para 6, it is explicitly stated that the (European) "Council may, acting unanimously ..., confer upon the European Central Bank specific tasks concerning policies relating to the prudential supervision of credit institutions and other financial institutions *with the exception of insurance undertakings*." (emphasis added)

There is one strong body of academic thought that argues that there should be no such protection of insurance for depositors, apart perhaps for some limited co-insurance for the small depositor, and/or that such protection should be limited to depositors of a sub-set of (narrow) banks, whose asset portfolio would be constrained to holding only safe assets. They argue that the protection (insurance) of depositors (almost inevitably) is mis-priced and hence generates so much moral hazard that the need for rescues is largely self-inflicted. In practice, however, (as documented in Appendix 3, which presents our cross-country survey of bank failures), the authorities have been manifestly unwilling to follow such academic promptings. In the majority of cases, 62 out of 90, the failing bank has been rescued, and in the remaining 28 cases of liquidation, in 17 the depositors suffered no loss (6), or no substantial loss (11). In any case, our remit in this paper is to discuss whether there should be a separation between the Monetary and the Supervisory Agencies, not whether the latter should be abolished *sine die*. It would take us too far from our main subject to reopen the general issue of whether bank regulation, and rescue, is desirable or self-defeating. Our maintained hypothesis is that it will continue to be done. The question directly at hand is, if so, should it be undertaken in house in the Central Bank, or in a separate purpose-built institution.

There is no generally accepted answer to this question. In Appendix 1a we provide a listing of monetary and supervisory agencies. In about half the cases the functions are combined within the Central Bank; in about half the cases they are separated. In several cases, e.g. France, the precise division of responsibilities is somewhat blurred, see notes to Appendix 1a. There are no immediately obvious characteristics distinguishing countries with combined, from those with separated functions. The German tradition has historically been for separation, while the British was for combination. Countries more closely under the influence of Germany in this respect (Austria, Switzerland, Scandinavia, possibly USA) have separate bodies, while countries with UK links (Australia, New Zealand, Hong Kong, Ireland, but Canada is an exception) combine them.

A feature of the last decade has been the rapid expansion of deposit insurance schemes to new countries. Of the deposit insurance schemes reported in Appendix 1b, 13 out of 22 have been established since 1980, or are in preparation. Furthermore, the European Commission has made a proposal for a Directive to require all EC countries to introduce a common scheme of minimum insurance levels for (most) depositors,³ beyond which individual member States can extend protection levels, if they so wish. This current expansion of deposit insurance schemes may appear, on the face of it, surprising in view of the well publicised problems of the FDIC and FSLIC in the USA, the evident role of the resultant moral hazard in the USA in the S&L debacle, and the growing chorus (especially in the USA) of academic condemnation of (mispriced) deposit insurance.

In part, the recent practical popularity of deposit insurance, at least in official quarters outside the USA, has been achieved since the organisers have learnt from that experience not to allow 100% unlimited insurance, but to require some form of co-insurance and/or to put an effective ceiling on the size of deposits to be protected. Moreover, the purpose of such (European) deposit insurance is somewhat different. It is not intended to stop bank runs, but to provide some limited consumer protection. Indeed, one purpose of the latter is to make it easier for the Central Bank, (and/or the supervisory agency involved), to enforce a closure of a delinquent bank with less of a subsequent public outcry. The authorities in the UK (Bank and Government) have, properly, remained adamant that the losses of depositors in BCCI, beyond those deposits specifically covered by the scheme, should not be recompensed in whole, or in part, from official sources.⁴

³ The European Commission has set the minimum at 15,000 ECU in its proposal. A concession to member states, which prefer some kind of co-insurance (notably the UK and Ireland), is made in allowing member states to guarantee at least 90% of deposits up to the 15,000 ECU level (EC, 1992a).

⁴ See, for example, Richard Dale (1992, p.1) in his note on 'Deposit insurance worries for regulators':

"Deposit insurance has emerged as a key regulatory issue both in the EC and the US. But whereas the EC

Such schemes have become more needed in those countries where rescues were previously organised in a more ad hoc manner by the Central Bank, acting in conjunction with the appropriate group(s) of commercial banks, in large part because the growing competition within, and fuzziness of boundaries of, the banking system has become so much greater. Hence the ability of Central Banks to organise and to co-ordinate rescues of banks (and of their depositors) on a generally acceptable self-regulatory basis has been slipping. So there has been a greater need for prior codification of the rights and responsibilities of all concerned in such crisis circumstances.

Although our view is that the control of supervision and regulation will depend, aside from national tradition, largely on the positive matter of who is ultimately going to pay for any such rescues, there are a number of, perhaps, more normative issues about whether the monetary and supervisory functions should be separated. We deal with three such issues in the following sections.

First in Section II, we address the question whether the combination of monetary and regulatory function under one roof leads to conflicts of interest; in particular whether concerns for the micro-level health and stability of (parts of) the banking system might distort the aim of the Central Banks' conduct of monetary macro-policy. If so, this would be an argument for separation.

Then in Section III we turn to two arguments raised against separation, for keeping the functions combined. The first is that the Central Bank must have a concern for the efficient working of the payments system. If so, does it then follow that the Central Bank must also supervise, and regulate, at least the main money-market commercial banks at the heart of this system? Second, we address further the question of rescues, in the context of a cross-country survey of how some 90 major bank failures have been handled. Such failures have frequently occurred suddenly, and have needed, or have been perceived to need, some swift injection of cash, unless there was to be immediate closure, with whatever contagious consequences might, or might not, then follow. Whichever institutions might be formally responsible for regulation and supervision, and whichever bodies ultimately pay for the costs of rescue, is there any alternative to the Central Bank as provider in its Leader of Last Resort role, of immediate extra liquidity? If not, will then the Central Bank frequently get sucked into rescue cases, willy-nilly, and become a participant in any rescue? If so, is a formal division of responsibilities sensible, given that the reality will generally require joint, combined involvement?

is mainly concerned with strengthening and standardizing deposit insurance arrangements in Europe, the US is focusing its attention on the need for greater discipline in financial markets.

The major problem with deposit insurance is well known: it creates 'moral hazard' by removing depositor discipline and encouraging risk-taking by banks. Hence the ceiling typically imposed on deposit insurance coverage. Yet the paradox today is that in country after country deposit insurance ceilings have tended to be ignored in favour of total protection for depositors.

For instance, in Japan no depositor has had to claim from the deposit insurance fund since its inception more than two decades ago. In the US the authorities have routinely dealt with failing banks in a manner that safeguards all, and not merely insured, depositors. While in Europe, there has been a parallel reluctance to tolerate any major deposit losses: bank bail-outs are the preferred solution, as illustrated by recent events in Scandinavia.

BCCI was an exception to the general rule, reflecting the impracticality of organizing a rescue operation. But the political fall-out from the ensuing deposits losses may have further strengthened national authorities' predisposition to avoid such collapses in the future."

II ARGUMENTS FOR SEPARATION: A CONFLICT OF INTEREST

A major argument for divorcing the monetary from the bank regulatory authority is that the combination of functions might lead to a conflict of interest.

Sometimes this conflict is supposed to bring about a bias towards extra injections of high powered reserves into the banking system. In so far as the Central Bank lends to an individual bank, in its role as lender of last resort, it will alter the net flow of reserves to the system. The implied concern is that such lending (to a troubled bank) will increase the net inflow of reserves. In this simple guise this argument is unconvincing. The Central Bank knows exactly the amount of lending, and, even if the assistance is made too late in the day to offset immediately, the conduct of open market operations can be rapidly adjusted, e.g. on the next working day, to maintain the initial desired amount of reserve injection.

The assumption will be that the lender of last resort action will have changed the distribution of reserves among banks. Otherwise why would the Central Bank have been asked to assist (at a rate generally less advantageous than in the market)? And the main purpose of the exercise, where the identity of the recipient bank is crucial, will have been to lessen the likelihood of contagious failure, leading to systemic problems. So LOLR actions, when exactly offset by a net reduction in OMO purchases will not leave the monetary system unchanged. But there is no good reason to believe that such actions need distort the aim of those Central Banks seeking to steer the system by means of a quantified target for the overall growth of the reserve base.

In fact, however, with a few exceptions, such as the USA in the era of the non-borrowed reserve target, 1979-82, Central Banks steer the monetary system by choosing an interest rate at which to inject, or withdraw, reserves. In these circumstances the rate of growth of the monetary base may be regarded as a most important information variable, (the Swiss National Bank), a somewhat useful information variable (the Bank of England since 1985), or be totally disregarded.

Within this more usual context, the conflict of interest may arise between the monetary authorities, who wish for higher rates (e.g. to maintain an exchange rate peg, to bear down on inflation, or to reduce the pace of monetary growth), and the regulatory authorities who are frightened about the adverse effects such higher rates may have upon the bad debts, profitability, capital adequacy and solvency of the banking system. It is in this guise that the conflict has, indeed, from time to time occurred. However, with the discussions usually internalised either within the Central Bank or within the monetary authorities, it is extremely hard to document either the existence and number of such occasions, or the extent, if any, to which interest rates were kept lower as a result. In any case, the experience of the UK, an example of a country with a Central Bank which is strictly dependent on the political authorities, suggests that conflicts of interest between regulatory and monetary objectives (in holding interest rates below the level desired for monetary reasons alone) are an order of magnitude less important than conflicts between purely monetary objectives and political imperatives.

Moreover, the regulatory authorities' concern with the 'health' of the banking system is only in some part due to the natural affinity ('capture') that may grow up between the regulated and the regulators. For a variety of reasons, in part because occasions of systemic failure are both rare and usually occur in conditions exhibiting other unusual occurrences, most macro-economic models, and macro-economists, do not include variables such as bank failure rates, etc., in their models, usually regarding some vector of interest rates and, perhaps, monetary growth rates as providing a sufficient measure of monetary influence. Other economists, e.g. trained in a more historical mode, or with somewhat differing models, economists as diverse as Kindleberger, Minsky and Bernanke, would argue that banking crises and failures would have a significant effect on economic activity even when conditioned on the same set of interest rate and aggregate

monetary variables. To this extent the 'conflict' between the monetary and regulatory arms of a monetary authority may not be between 'objectives' at all, but rather between differing (implicit) models of how the economic system works.

A more general point is that the cyclical effects of micro (regulatory) and macro (monetary) policy tend to conflict. Macro-monetary policy is supposed to be counter-cyclical, while the effects of regulation, e.g. capital adequacy requirements, tend to be pro-cyclical; it is harder to increase capital in a slump when bank profits are low and bad debts high. The pressures arising from this conflict may fall on supervisors to relax their regulation in a recession. On these grounds it may be argued that separation might, on the face of it, strengthen the resolve of the regulator to resist such pressures. But if separation puts the supervisory agency more directly under the thumb of the politicians, then the question of which structure will leave the regulators in a stronger position remains moot.

Be that as it may, there have been a number of instances when it is believed that interest rates were held down, in some large part because of concern with the 'health' of (parts of) the monetary system, when purely monetary considerations might have suggested higher rates. The effects on US monetary policy of the weakness of S&Ls, caught with a massive maturity mis-match between long-term loans at fixed rates and short term liabilities has been thoroughly documented (Vittas, 1992). Again from the US, it is widely believed that Volcker was under pressure to abandon the non-borrowed reserve base scheme in Summer/Autumn 1982 because of the effects of the level/volatility of interest rates upon both LDC debt problems and the solvency of the major money-market-centre commercial banks in the USA.

A further illustration of such problems may have been provided by the events of September 1992. It has been rumoured in the City that one of the considerations, though probably a minor one, leading the monetary authorities to abandon the ERM and to float, was the fear of what 15%, and possibly higher, base rates might have done to the solvency of certain City institutions.

A speculative attack upon a currency, in a pegged but adjustable exchange rate system without exchange controls, can place extreme pressure upon short-term interest rates, if such an attack is to be repelled. Should the market, for example, come to believe that there is a 25% chance of a 10% realignment within the next week, then the expected return from the switch is positive unless the offsetting one week interest rate differential is about 130% ($0.25 \times 10 \times 52$). Indeed, short-term money market interest rates, (e.g. in Sweden in September 1992, or in Norway in November 1992), in those countries which attempted to repulse the speculative attack by purely market measures, were actually in this ball-park (with overnight rates of 500% in some cases).

This raises the question of what damage such sky-high short-term interest rates may do, first to the banking system, and second to the economy. Obviously this depends on how long such interest rates are likely to last. But, beyond that, it may depend importantly on the structure of the banking system, on both the liability and asset side of the balance sheet. Those banking systems which are primarily financed by a retail deposit base, whose interest rates are unlikely to follow, or can be restrained from so doing, the massive gyrations of money market wholesale rates, would be better able to ride out such a storm. Again, where bank loans (mortgages) are made on a variable rate basis, the system may be more sensitive, both economically and politically, to temporary periods of sky-high rates, than when such loans are on a fixed rate basis. The comparative fragility of variable, versus fixed, rate systems may well, however, be reversed in cases when the interest rate adjustment is more long-lasting. Furthermore, those banking systems which were effectively nationalised, or where the authorities can (quietly) transfer rents to the banks, or where the banks run a profitable cartel, will be inherently better placed to ride out such (temporary) volatility, since their solvency would be less at risk.

This example suggests that the potential for conflict between 'regulatory' and 'monetary'

objectives depends to some large extent on the structure of the banking and financial systems. The more such a system involves intermediaries financing maturity mismatch positions through wholesale markets in a competitive milieu, the greater such dangers of 'conflict' are likely to be. This may, perhaps, suggest a paradox. It is the German tradition which exhibits the greatest concern about conflicts of interest, and the greatest desire for a separation of responsibilities; yet it is the German system, dominated by an oligopoly of enormously powerful universal banks, with relatively under-developed, competitive wholesale financial markets, in which such 'conflicts' of interest will be least bothersome, (see Bisignano, 1992).

As earlier noted, such conflicts may not really be so much between objectives, as between rival models of how the economy and financial system interact. It is, at least, possible to argue that where such conflicts really become important (in an open, competitive, market-driven system), they have, in order to obtain an efficient resolution, to be internalised within a single authority.⁵ Indeed, when there is separation, conflicts can occur not only because of differences of objectives, of information sets, or of preferences, but also as a result of simple administrative complications (a cock-up). An example of this may have occurred in Denmark (case 21 in Appendix 3) where the Central Bank provided liquidity support to a bank in difficulties and the supervisory agency then went ahead and closed that bank without, it would appear, any consultation with the Central Bank. Where such conflicts have been less pressing, because of a differing structure, (e.g. Germany, Japan) it is easier to maintain the 'luxury' of a separation of responsibilities.

One of the reasons why such separation may be regarded as a 'luxury' is that the function of regulation has rarely received plaudits from the public or the politicians. The Bank of England's reputation, prior to the 1973/74 secondary banking crisis, was, perhaps, a counter-example; but that can be viewed, with hindsight, as praise for having avoided virtually any prudential regulation without this having led to any major collapses.

Regulation is otiose, unless it forces financial intermediaries to do what they otherwise would not voluntarily have done. Therefore unless the regulatory body is largely an advisory, counselling body, it will be resented by its clientele, and given few thanks for hypothetical, averted crises, (except where these are obvious, as when the Fed calmed the situation on, and after, October 1987). Again, the public and politicians will blame the regulatory authority for the crises that do occur (BCCI and Johnson Matthey in the UK case), while taking the regulators for granted otherwise.

Consequently, it has been argued that the reputation of the Central Bank is more likely to suffer, than to benefit, from the joint conduct of both functions. Moreover, such is the political and public 'flack' from a major collapse that much, perhaps far too much, of senior officials' time and energy is taken up with 'damage control' under these circumstances. Certainly the mood within the Bank of England has appeared to change under the baneful influence of the BCCI affair. Whereas in earlier years it regarded the regulation and prudential supervision of the banking system as a natural, core, function, more recently it has come to view the possible devolution of this function to some other official agency with some equanimity, or even relief. It may well be that, in future, the balance of 'proving' the case may shift from those wishing to separate the functions to those wishing to combine them.

⁵ There are a number of other somewhat minor issues relating to the twin questions of 'conflict' and 'efficiency'. For example, does the combination of functions lead to improved information and understanding in the Central Bank? Or does it lead to problems of confidentiality and 'Chinese Walls' within the Central Bank itself? Does the combined function lead to advantages, or problems, in dealing with banks? One Central Banker (Muller, 1981) has noted that the kind of relationship sought with banks on behalf of monetary policy (e.g. cooperation, gentlemen's agreement) may be very different from that holding in the relationship between supervisors and bankers, which may be much tougher. In general, the 'purity' of the overall relationships, e.g. between the Central Bank and the banks, may be obscured by the twin responsibility of the former.

In the past in those countries where the Central Banks were dependent, with the key monetary decision being taken in Ministries of Finance, there may have been some bureaucratic tendency for Central Bank officials to give more weight to fields in which they could still take the lead, often including more micro-level, structural relationships with financial intermediaries and markets. Heller (1991) has a table comparing the inflation performance of banks without a supervisory responsibility, relative to those with such a responsibility, to the detriment of the latter. (In Appendix 2 we have recomputed, extended and further commented on this table.) The point here is that there may be some correlation also between the dependency of the Central Bank for monetary decisions and its leadership in financial regulation; and it may be the former, rather than the latter that drives the relative inflation performance.

Anyhow, there are some indications that the process of transferring more independence to the Central Banks within the ESCB for the conduct of monetary policy may be being accompanied by a reverse shift of responsibility for micro, structural, regulatory policies back to official agencies under the aegis of some political Ministry. The politicians may be averse to too large a transfer of power to (unelected, independent) Central Banks, while the Central Bankers, for their part, may be quite happy with the exchange of obtaining more control over macro-monetary decisions while divesting themselves of a supervisory responsibility, which is becoming perceived as increasingly problematic and occasionally downright embarrassing.

It is, perhaps, surprising that those who argue for a formal separation appear to believe that the supervisory function will thereby be carried out better, with less regulatory cost and burden, fewer bail-outs and less use of tax-payer money. This seems to us to be a "Grass is greener on the other side" syndrome. The alternative to Central Bank regulation is generally an agency more closely under political control. It is at least arguable that the closer the supervisory agency is to the political system (OCC and FDIC, to a lesser extent, in the USA) the more tax-payers' funds are used for bail-outs. The responsibility of the Bank of England for the banking system may well have strengthened Ministers' hands in refusing calls for extra payments to BCCI depositors.

III ARGUMENTS AGAINST SEPARATION:

IIIA PAYMENT SYSTEM

In a modern economy the payment for, in particular large, transactions is mainly settled through the reserve accounts of the sending and receiving bank at the Central Bank and, hence, can give rise to liquidity and credit risks. Whereas we will deal with the broader concern of the Central Bank for systemic stability in the next section, we will focus here on the appropriate role of the Central Bank in the payment system, a key channel for the potential spread of contagion risk. Put differently, is there a role for the Central Bank in the payment system beyond that of settlement agent?

Liquidity risk arises when any of the parties in the chain of transactions may not be able to fulfil its obligations when due (potentially causing the counterparty to borrow or liquidate assets to complete its own payments) and credit risk arises when a party may default altogether on its obligations. The arrangement of a payment system defines the size of these risks, who is/are bearing them, and also the efficiency of the system.

In net⁶ settlement systems participants send payment instructions over a period of time which are

⁶ Netting is an agreed offsetting of positions or obligations by participants in a system to reduce the amount of positions or obligations subject to physical settlement. While position netting neither satisfies nor discharges the original individual obligations, netting by novation satisfies and discharges existing obligations by the substitution of

only settled at the end of this period. This arrangement exposes the participants to significant credit risks as they extend credit to each other. The settlement of payments, by the delivery of reserves at periodic, usually daily, intervals is therefore a key test of the solvency of the participants (Folkerts-Landau, 1990). Unless the clearing house (i.e. central bank or private clearing association) provides for settlement finality, it has to unwind payment instructions in the event one or more participants fail to settle their debit positions. Under settlement finality the non-defaulting participants have to cover the shortfall at settlement according to some kind of loss-sharing agreement, possibly backed by collateral posted at the clearing house. Although no Central Bank would say so, a Central Bank as lender of last resort might feel compelled to support the failing participant in the case of unwinding or loss-sharing which could endanger the liquidity and solvency of the non-defaulting participants in order to avoid systemic 'knock-on' effects. The Central Bank would then assume (part of) the liquidity and credit risk of the net settlement system and would become effectively the implicit guarantor of the system.

Examples of net settlement systems can be found among others in the USA (CHIPS), the UK (CHAPS), Germany (EAF), France (Sagittaire) and Italy (SIPS).⁷ These examples involve national payment systems backed by a Central Bank, whereas the private ECU clearing and settlement system is a net settlement system without a Central Bank. The BIS acts only as a settlement agent and does not provide liquidity support if needed. For this reason some EC Central Banks, i.e. Bank of England, Banque de France and Banco de Portugal, provide secured borrowing facilities to ECU clearing banks.⁸ However, the question of who would finally bail out the private ECU system if needed (in case the facilities were not enough) still remains open.⁹ This highlights the need for a Central Bank for the smooth functioning of a net settlement system.

In a gross or continuous settlement system each payment is immediately settled at the settlement institution. An important distinction is whether daylight overdrafts are allowed, or not. Gross settlement systems with daylight overdrafts, e.g. Fedwire in the USA, preserve the liquidity and, hence, the efficiency in the same way as net settlement systems. However, in the absence of collateral for these overdrafts the clearing house (e.g. the Federal Reserve for Fedwire) assumes the full amount of credit risk till the overdrafts are eliminated. Collateral requirements, or even more stringent no overdrafts, minimise the credit risk, but could also significantly reduce the liquidity of the system. Payments on 'credit' are no longer possible, and reserves (or collateral) need to be available before a payment can be effected. If funds are not available, payments are usually put in a queuing batch till sufficient funds are raised. This may in turn delay other payments, and eventually lead to gridlock in the system.

In SIC, the Swiss gross settlement system without daylight overdrafts, the level of reserves held

new obligations. See for this and other terms the glossary in the 'blue book' on EC payment systems published by the EC (1992c).

⁷ See BIS (1990a) and EC (1992c) for the details of large value payment systems in the major developed countries.

⁸ As the ECU clearing and settlement is a closed circuit, net debtors will normally square their position by borrowing from net creditors. However, net creditors might be unwilling to extend lending to some net debtors, when this additional lending would exceed credit limits set on these debtors. The ECU Banking Association has therefore implemented an intermediation facility, under which the surplus of the net creditor(s) will effectively be channelled through all other clearing banks who will each lend up to a maximum of ECU 5 mln to the net debit bank(s). This arrangement can potentially cover a shortage of ECU 215 mln (i.e. 5x43). Furthermore, a legal and technical audit of the system has been carried out and limits on bilateral and multilateral exposures and a loss-sharing agreement have been implemented (EC, 1992c).

⁹ The Committee of Governors of the EC Central Banks felt that it should be entrusted with the oversight responsibility for the private ECU clearing and settlement system, but it remains silent on the direct responsibility for the system (EC, 1992b).

by SIC participants with the Swiss National Bank declined significantly after the abolition of reserve requirements in January 1988. Despite an equally significant increase in the daily turnover of reserves, Vital and Mengle (1988) report that in November 1988 only 55% of all transactions were settled within two hours of having been entered, compared with 79% a year earlier. Such a high failure rate creates significant liquidity risks. They further raise the question whether there are incentives, other than administrative measures, that prevent the transaction demand for non-interest bearing reserves from dropping to the gridlock level.

Be that as it may, an economist's answer would be to do a cost-benefit analysis. In a gross settlement system without overdrafts, the full cost of foregone interest falls on the reserves maintained, while a collateralised system only involves an opportunity cost since the collateral is tied up. However, the Central Bank assumes the credit risk associated with the collateral it acquires in exchange for the overdrafts, i.e. the provided liquidity, while it assumes no credit risk at all in the system without overdrafts. In the latter case, the Central Bank could therefore pay interest on reserves, as is done in countries like Ireland, Italy, the Netherlands, Portugal and Greece, although below the market rate (EC, 1992b). Moreover, an intraday credit market might emerge as in Japan. But while an intraday credit market can facilitate the adjustment of banks' reserve positions, it does not provide an incentive to keep 'sufficient' reserves in the banking system.

A Central Bank needs to use the payment system in order to inject (or drain) reserves into (from) the banking system. However, for the shortage (e.g. payments to the government or conversion of deposits into currency) to be known and relieved, there is no need for a Central Bank to operate the payment system, so long as it can obtain sufficient information with real-time monitoring. Although reserve requirements are not essential for the conduct of monetary policy, they can play some role in facilitating transfers in the payment system. The decision to implement reserve requirements, or not, for EMU may depend in some part on this consideration.

The Central Banks' growing awareness of the liquidity and credit risks in net and gross (with uncollateralised overdrafts) settlement systems and their implicit or explicit assumption of these risks, have initiated several risk reduction policies. The most direct measure used to be, and still is, to control access and monitor the participants, which we will discuss in more detail below. More recently, work is under way to improve payment finality in order to reduce or eliminate the need of unwinding procedures. In this respect Central Banks or clearing houses (very often persuaded or forced by Central Banks to do so) have been putting bilateral and/or multilateral caps on the size of overdrafts. However, such an accounting measure does not provide incentives to reduce overdrafts further than the limits which are set. A market based approach would be the pricing of daylight overdrafts (Mengle, et al, 1987), perhaps together with some kind of caps. This would be the natural counterpart of paying interest on reserves. With the present state of technology, i.e. real-time payment systems, the calculation of interest on credit and debit positions for short time periods, say ten minutes, should be no problem.

On top of these short term measures to reduce risk, there is a long term trend towards domestic gross settlement systems without daylight exposures to minimise credit risk. In Japan (BOJ-NET; no overdrafts), the Netherlands (Central Bank System; collateralised overdrafts) and Switzerland (SIC; no overdrafts) a major part of large value transfers is already settled on a real-time gross basis without credit exposures.¹⁰ The Banque de France is moving to a gross settlement system with partially collateralised daylight overdrafts (TBF). The Bank of England has announced plans to move to a collateralised gross settlement system (Bank of England, 1992). It should, however, be noted that the significant decrease in credit risk established by such gross settlement systems

¹⁰ Both the BOJ-NET and the Dutch Central Bank System offer two options. Only the first provides real-time immediate settlement and is, hence, irrevocable. The second option can be specified for processing at a designated time or the end of each day and is revocable, which can give rise to liquidity and credit risks.

without daylight exposures goes hand in hand with an increase in liquidity risk. Increasing failure rates can eventually lead to a gridlock of the payment system, as noted earlier.

It may be thought that gross settlement without daylight overdrafts, or even collateralised overdrafts, minimises credit risk (though not liquidity risk) and, hence, reduces the role of the Central Bank as explicit or implicit guarantor of the payment system. However, payment systems do not operate in isolation. Large value transfers are mainly initiated in foreign exchange trading, securities transactions and interbank transactions. The main risk in forex or securities transactions is that one party settles its part, while the other party fails to do so. The two 'legs' of a forex deal have to be settled in the payment systems of the different currencies. The so-called cross currency settlement (or Herstatt) risk is largely due to the difference in the time zones of central banks, which can prevent same time settlement, and is clearly illustrated by the failure of Herstatt in 1974 (see case 35, Appendix 3). Netting arrangements can reduce, but not eliminate, the size of cross currency settlement exposures.¹¹ In securities transactions an equivalent risk, called principal risk, appears when the seller of a security delivers but does not receive payment or vice versa. The solution for this problem is delivery versus payment as recommended by the Group of Thirty (1989). In addition to settlement risk, liquidity risk (funds or securities are not delivered when due) has the potential to create systemic problems, particularly if liquidity problems occur when exchange rates or securities prices are rapidly changing (BIS, 1992a).¹²

While the improvement of payment systems may reduce banks' exposure to each other within the payment system, banks can still have large, short-dated, exposures on the interbank market (in section II we discuss the implications of banking systems quite largely financed by wholesale deposits). Rumours about a possible deteriorating creditworthiness of a bank can easily lead to a run on wholesale deposits and, hence, create a liquidity or funding crisis, as Continental Illinois experienced in May 1984 (see case 84, Appendix 3). Due to growing concerns about interbank credit risk (which usually lacks the safety of collateral), the scale of activities on the interbank market (e.g. interbank deposits and certificates of deposits) has recently declined and some banks have developed other short-term funding alternatives such as medium-term note facilities and longer-dated commercial paper programmes (BIS, 1992b). Part of the traditional interbank activities has been replaced by more efficient derivatives and other off-balance-sheet instruments for hedging and position-taking purposes.¹³ Another major advantage of the use of off-balance-sheet instruments is the reduction in credit risk. The credit exposure in traditional instruments, such as interbank deposits and CDs, amounts to the full principal value, while the exposure in off-balance instruments is limited to the replacement cost of the contract's cash flows, the so-called credit equivalent value. However, lack of adequate disclosure of off-balance-sheet instruments complicates the monitoring of a counterparty's creditworthiness, which is crucial to manage credit risk. The Promisel Report (BIS, 1992b) stresses therefore the need of improving accounting and disclosure standards for these instruments. Furthermore, they urge an enhancement of netting schemes for financial contracts.

Another source of risk which originates beyond the settlement system, is two tier and

¹¹ The Lamfalussy report (BIS, 1990b) stressed the need for a sound legal basis and developed minimum standards for netting schemes. If parties, for example, put caps on net positions and netting appears not to be legally enforceable, a counterparty's credit exposure can be the sum of the gross exposures. Netting will then have the potential to contribute to an increase in systemic risk.

¹² Furthermore, prior to the settlement date, counterparties are subject to replacement cost risk, i.e. the risk of having to replace the (forex or securities) contract at current market prices when the counterparty fails before settlement. Such risk can be reduced by shortening the interval between trade and settlement (BIS, 1992a).

¹³ Banks use, for example, short term interest rate swaps (IRSs) and forward rate agreements (FRAs) to manage interest rate risk or to swap longer-dated fixed rate interbank deposits into shorter-dated funds (BIS, 1992b).

correspondent bank arrangements. In tiering arrangements 'second tier' banks have to use the services of settlement banks to exchange payment orders and to settle their positions because only the settlement banks have settlement accounts at the Central Bank. Tiering arrangements can be found in net settlement systems such as CHIPS (USA), CHAPS (UK), SIT (France), SNCE (Spain) and the private ECU clearing and settlement system. Correspondent banking is the main vehicle for international payments since in all industrial countries to date, direct access to their payment systems is subject to being located in that country (EC, 1992b). For making a payment in a foreign currency a bank needs a correspondent bank in the country of that currency when it has no establishment there. In both kind of agency relationships second tier and foreign banks do not settle in Central Bank money, but over their accounts at the settlement and correspondent banks. This creates credit exposure for the latter in so far as they execute payments for their 'customer' banks which do not have sufficient funds in their accounts. Settlement and correspondent banks have to monitor and manage their exposures since these lines of credit are frequently offered without the safety of collateral (Folkerts-Landau, 1990). The secondary banking crisis in the UK (see case 80, Appendix 3) showed that a Central Bank cannot always restrict its support to settlement banks and may feel compelled to assist secondary banks if it believes that problems at secondary banks can have serious repercussions on the major primary banks. In the international field netting can reduce but not eliminate credit risk as discussed earlier. Domestically credit risk can be reduced by putting all banks directly on the settlement system, as the Bank of Italy, for example, is intending (EC, 1992c).¹⁴

The access of banks to Central Bank reserves¹⁵ enable them to make payments under all market conditions (Folkerts-Landau, 1990). Moreover, Folkerts-Landau, Garber and Weisbrod (1991) argue that the ability to mobilise reserves more easily than competing financial institutions establishes banks as the cheapest source of liquidity in the economy. They back their argument with the observation that corporations which issue commercial paper maintain credit lines, representing access to the liquidity of the banking system. Corporations can fall back on these credit lines when they experience difficulties in the commercial paper market, e.g. during times of liquidity stress in the market, to issue or roll-over commercial paper. As a result Central Bank liquidity support for banks implicitly extends official support to other institutions that rely on liquidity provided by these banks (Folkerts-Landau, 1990), in the same way as it may be extended to secondary and foreign banks (see previous paragraph).

As far as Central Banks guarantee the payment system and provide liquidity support if needed, control on access, in the form of restricting the participation to banks which are eligible for this support, is justified and even necessary. However, the Central Banks' attempts to reduce the need for liquidity support caused by payment problems via moving to gross settlement systems without daylight exposure, can in turn lead to looser controls on access.

The integrity and reliability of a payment system is essentially dependent on the quality of the participants, the specific clearing and settlement arrangements, and the possible backing by a Central Bank. The oversight of payment systems, to date done by the Central Bank in most countries, is therefore concerned with the participants (e.g. the quality of their risk controls and of their computers and back-up facilities), the clearing house, and the network technology for

¹⁴ However, it can be questioned whether these agency relations will be eliminated fully as the holding of positive settlement accounts or collateral at one or more payment systems can be expensive, especially for small and foreign banks. It is essentially the same trade-off between efficiency and risk as in net or gross settlement with daylight exposure compared with gross settlement without such exposure.

¹⁵ The access of banks to reserves is indirect in some countries. In England (and Australia), for example, only discount houses (money market dealers) can borrow directly from the Central Bank. Banks cannot borrow from the Central Bank at their own initiative and at times of their own choosing, but have to turn to the discount houses (money market dealers) in order to acquire reserves.

messages (e.g. SWIFT is the main vehicle for sending international payment messages). Such oversight differs considerably from the usual supervision of banks, which focuses primarily on the solvency and liquidity position. To assess and monitor a bank's liquidity, its short term claims and obligations have to be known. Data on payment behaviour do not provide such information. The earlier mentioned, interbank exposures (among settlement banks), exposures to secondary and foreign banks, exposures to non-bank institutions due to (unused) credit lines, etc. should be controlled within the general supervisory framework, which is the topic of the next section. However, the nature of these exposures is partially determined by the design of payment arrangements.

Whilst it should be the responsibility of Central Banks to initiate or to cooperate in the development of safe and stable payment systems and secure linkages with other payment systems and securities settlement systems, it does not follow that they should also operate them.¹⁶ Put differently, we see a clear regulatory, but not necessarily an operational, role for Central Banks in the payment system.¹⁷ As long as Central Banks have to assume significant credit and liquidity risks, in particular in net or gross settlement schemes with uncollateralised overdrafts, an additional oversight and monitoring role can not be denied to them. The latter role would become less urgent if we were to move to a safer payment environment with, e.g. gross settlement without daylight exposures, sufficient funds in the settlement accounts, delivery versus payment, synchronisation of time periods for forex settlements (which implies 24 hour settlement), etc. However, such 'safe' payment systems are still far away.

IIIB SYSTEMIC FAILURE

A distinction that is frequently made in the literature relating to a Central Bank's Lender of Last Resort function is between those circumstances in which a commercial bank is illiquid, but not insolvent, and those cases in which a bank is insolvent, and may, or may not, be illiquid. In much of this literature from Bagehot to (FRB Richmond), the argument is made that it is appropriate for the Central Bank to use its LOLR function in the first case, but not in the second, e.g. because of moral hazard problems.

In our view that distinction can not, usually, be maintained. With an efficient money, and inter-bank, market a commercial bank that is generally believed to be solvent, can, almost always, obtain sufficient additional money to meet its liquidity difficulties. There have been some exceptions, notably when some technical failing in the clearing, or money market, system leads to a bank making out-payments, but unable to obtain offsetting in-payments; this occurred in the well-known Bank of New York case in 1985, (case 85, Appendix 3). But such cases are rare. In general, a bank that cannot borrow, on current market terms, to meet temporary liquidity difficulties, finds itself in that position because potential counterparty lenders are suspicious and uncertain about its potential solvency, as, for example, in the case of Continental Illinois, (case 84, Appendix 3).

Thus, the exercise of the Lender of Last Resort function, as contrasted with lending as part of standard money market practice, will generally occur in circumstances where the solvency of the borrower is subject to doubt. Frequently, perhaps usually, there will not be time to examine the

¹⁶ The earlier discussed payment system of Switzerland, SIC, provides a good example of a privately owned and operated system with continuous settlement in reserves (i.e. Central Bank money) and no overdrafts.

¹⁷ See Summers (1991) for a different view. Apart from a role for the Central Bank in regulating and overseeing the payment system (and providing settlement across its books), with which we agree, Summers argues also for a role for the Central Bank in operating large value payment systems, because of the critical nature and 'safety net' attributes of such systems.

books of the suppliant borrower sufficiently carefully to tell whether the bank, or other financial intermediary, is insolvent, or not.

While there is, as noted in the Introduction, a strong school of academic thought that believes that official intervention in such circumstances is misguided, we simply record here that the revealed preference of monetary authorities has been to rescue banks running into difficulties, so long as there appeared to be any risk of a systemic knock-on effect. Even when the possibility of contagion related to a rather narrow sub-set of banks, and a relatively minor market, as in the case of Johnson Matthey Bankers in 1984, (case 81, Appendix 3), where contagion was feared with the other banks connected with the London gold market and the survival of that market itself, the authorities, the Bank of England, nevertheless stepped in to rescue, though its judgement in so doing was later questioned.

The attached appendix contains a cross-country survey of 90 bank failures in 22 countries and covers the 1980s and early 1990s, with a few important cases taken from the 1970s. The selection of countries corresponds largely with the set of countries of which institutional details are provided in appendix 1a (monetary and supervisory agencies) and 1b (deposit insurance agencies). The main sources for these data are country reports of banking systems compiled by IBCA (a London based rating agency), the Financial Times and the Economist.¹⁸ The criteria for including reported bank failures from these sources are the availability of conclusive information on the method of handling the bank failure and the funding of a possible rescue. We do not claim that this Appendix provides a complete coverage, least of all for the USA, where their banking system, limiting cross-State branching and encouraging small (undiversified) unit banks has resulted in a proliferation of failures. We hope that we have, nevertheless, provided relatively comprehensive coverage of the larger failures over a wide range of developed countries.

Some troubled banks continue on a stand alone base after a rescue package in the form of emergency aid or a capital injection has been provided, while others are taken over by one or more banks. A third way of rescuing banks is putting them under a special regime administered by either the deposit insurance fund or the government. Related to this is the creation of a special fund to deal with a set of bank failures as in the USA, Norway, Finland and Japan. Finally, a failing bank can be put in liquidation. Four sources of funding can be identified: banks, the Central Bank, the government or deposit insurance. Deposit insurance is usually financed through regular or ad-hoc contributions from the participating banks with contingency funding arrangements backed by the government (see appendix 1b). In some cases banks are liquidated or taken over by another bank without any external funding.

The results of this survey are summarised in a few tables below. In some cases a combination of several methods is applied like in case 17 and 18: these two troubled banks were finally taken over after an initial rescue package in the form of credit lines granted by the Central Bank and other commercial banks appeared to be insufficient. Funding can also be provided by more sources. We therefore give a breakdown of the results for the cases in which two methods or two funding sources are used. We do not specify the cases in which three or four sources of funding are used since such a further breakdown will not provide much additional information. Only the numbered cases are included in the tables, while other cases provide additional information which either reappears in following cases or does not provide enough details to be included. Note that the numbers in the tables do not add up, since more than one method or source is used in some cases.

We also distinguish, in the following Tables 1 to 4, between those cases in which the Central Bank of the country combined the functions of monetary management and banking regulation.

¹⁸ Our thanks are due to IBCA for making available its country reports and to the Financial Times for using FT Profile, a computerised database of Financial Times and Economist cuts from 1982.

The purpose of this is to provide some preliminary indication whether such combination led to any obvious differentiation either in the method adopted for dealing with a failing bank or with the resulting choice of funding.

This procedure is virtually bound to lead to severe under-sampling of the occasional failures of small banks, especially in the USA where the literature on their somewhat idiosyncratic system is, however, already rich. Such failures are not likely to precipitate systemic failure, and so leave the authorities the greatest room for exercising more severity in response. So a simple calculation of the number of failing banks not rescued from our sample in the Appendix will understate the total population of failing banks not rescued.

Even so, there is an obvious inequity involved in rescuing all depositors in large banks, but not in small banks. The application of a 'too big to fail' doctrine, though widespread in practice, does lead to an uncomfortable discrimination, a discrimination which leads to resentment, and may be challenged by those involved, e.g. on grounds of bias, see the case of the Freedom National Bank in the USA, (case 87 in Appendix 3).

It is not true that all large banks, or financial intermediaries, will be rescued, but the best known examples where there has been no rescue, i.e. BCCI and Drexel Burnham Lambert, have occurred when the bank (intermediary) was an 'outsider', i.e. had become somewhat excluded from the rest of the system, so that the failure, despite being large in itself, nevertheless could be regarded as having relatively minor, and containable, systemic implications.

Table 1 Methods of Dealing with Failing Bank

METHODS	One Method	Two Methods	Total
Rescue Package (Emergency Aid or Capital Injection)	11 (4)*	8 (1)	19 (5)
Take-over by Bank(s)	30 (13)	10 (3)	40 (16)
Special Administration or Fund	10 (1)	8 (3)	18 (4)
Liquidation	24 (9)	4 (1)	28 (10)
Subtotal	75 (27)	30 (8)	
Total	75 (27)	15 (4)	90 (31)

Table 2 Cases in which Two Methods were Applied

Two Methods	Rescue Package	Take-Over	Special Administration	Liquidation
Rescue Package	-	4 (0)	1 (0)	3 (1)
Take-Over	4 (0)*	-	6 (3)	0 (0)
Special Administration	1 (0)	6 (3)	-	1 (0)
Liquidation	3 (1)	0 (0)	1 (0)	-
Total	8 (1)	10 (3)	8 (3)	4 (1)

* The numbers in italics represent the cases in countries in which the Central Bank combines the monetary and supervisory functions.

Table 3 Sources of Funding for Failing Banks

Sources of Funding	One Source	Two Sources	Three Sources	Four Sources	Total
Central Bank	2 (1)*	16 (4)	5 (0)	2 (0)	25 (5)
Deposit Insurance	21 (8)	8 (3)	5 (0)	2 (0)	36 (11)
Government	10 (3)	5 (0)	3 (0)	2 (0)	20 (3)
Banks	8 (5)	11 (5)	2 (0)	2 (0)	23 (10)
No External Funding	22 (8)	-	-	-	22 (8)
Subtotal	63 (25)	40 (12)	15 (0)	8 (0)	
Total	63 (25)	20 (6)	5 (0)	2 (0)	90 (31)

Table 4 Cases in which Two Sources of Funding were Used

Two Sources of Funding	Central Bank	Deposit Insurance	Government	Banks
Central Bank	-	4 (1)	4 (0)	8 (3)
Deposit Insurance	4(1)*	-	1 (0)	3 (2)
Government	4 (0)	1 (0)	-	0 (0)
Banks	8 (3)	3 (2)	0 (0)	-
Total	16 (4)	8 (3)	5 (0)	11 (5)

* The numbers in italics represent the cases in countries in which the Central Bank combines the monetary and supervisory functions.

Be that as it may, out of our sample of 90 bank failures, 62 resulted in a rescue, and 4 of the final 28 liquidations were only undertaken after initial attempts at a rescue had been tried. There are, of course, some border-line cases, which are difficult to classify. The recent arrangement whereby the Japanese authorities have allowed banks to transfer non-performing property loans to a special reference agency has been treated as a single example of rescue, whereas the number of banks thereby protected from failure may never be known with any accuracy, (see case 46 in Appendix 3). Again the many cases, notably in the USA and in Spain, where the deposit insurance fund plays a large role in dealing with failing banks, the fund splits the loan book of the failing bank into a 'bad' part, where it assumes the loss, and a 'good' part, which is on-sold to another bank. We have treated such cases as representing 'rescues'.

What the data in our Appendix demonstrate is that it has been the revealed preference of the monetary authorities in all developed countries to rescue those large banks whose failure might possibly lead to a contagious, systemic failure. While there is a strand of (liberal) economic argument that regards this state of affairs as deplorable, our maintained assumption is that it will continue. The authorities find the prospects of a collapse in a central, core part of their financial system too awful to contemplate.

We move on, therefore, to a (descriptive) account of, first, how such cases of potential failure have, in practice, been handled, and, second, how such operations have been financed. Data on this first matter are reported in Tables 1 and 2, and on the second in Tables 3 and 4.

As already noted, in only about one third of the cases was the bank(s) in difficulties liquidated (wound-up). The most common response was to arrange for a bank to be taken over by another bank, in many cases with assistance or encouragement from the regulatory authorities. In slightly less than a third of the cases, the rescue was directly handled by the regulatory authorities, either by a rescue package, or by the regulator administering the bank directly. These could often be described as cases of partial, or complete, nationalisation by a public sector body.

In 31 of the cases in the Appendix, the failing bank was registered in a country where the Central Bank combined the micro and macro functions of monetary control and supervision. Direct rescue packages, and partial nationalisation, were marginally less common in such countries, and arranged bank take-overs more common, but the sample is so small, and the allocation by type often so judgementally arbitrary, that such distinctions are not significant.

The second main question that we have sought to illustrate, (from the basic data in the Appendix), is how these operations were financed. In 22 cases, about one quarter of the sample, no external financing was used. In 21 cases the deposit insurance fund took on the whole burden, and in 10 cases the Central Government did so. It is comparatively rare for the commercial banks to put up money in such cases just by themselves, 8 cases; they are much more likely to do so in conjunction with one of the other official bodies, 15 cases. It is very rare for a Central Bank to undertake a rescue just by itself, 2 cases. It will almost always, as already noted in the Introduction, do so in conjunction with commercial banks (8 cases), or one of the public sector bodies (8 cases), or with two, or more, categories of supporting institutions (7 cases).

When we look at the sub-set of cases arising in countries where the micro and macro functions of banking regulation and monetary policy are combined, the impression is that the finance of failing banks is undertaken more through the private sector, e.g. banks and bank-financed deposit insurance funds, and less by the public sector. In these countries there were relatively few direct calls on the Central Government for the funding of rescues (3 cases), and, perhaps more surprisingly, the Central Bank itself was relatively infrequently involved (5 cases). We do, however, need to stress once again the small, and non-random, size of the sample.

What lessons, if any, can we learn from a listing of recent cases of banks which have run into

difficulties? First, there have been many such cases covering a wide range of (most) developed countries. Bank failures are not uncommon, nor limited to a few countries. They can be expected to occur. Second, the authorities have been reluctant to see such failures end in straightforward liquidation. In only 28 cases out of 90 were the banks liquidated and in 15 cases out of these 28 liquidations were deposit insurance payouts made. Third, a system where the Central Bank remains in charge of supervision and regulation is somewhat more likely to involve the commercial banks with financing rescues and there is less likelihood of a call upon the public (tax-payers) purse than when the regulatory function is hived off to a separate agency.

Although this latter reliance on self-financing may be seen as desirable, it is doubtful how far it will be sustainable much longer. It does, quite largely, depend on the cohesion of a well-defined group of banks who are prepared to finance a self-supporting regime under the leadership, usually, of a Central Bank. This is most easily achieved when such banks form a clear-cut cartel with a defined membership.

Indeed, where the cartel is particularly strong, as in Germany, it is possible for the member banks to finance the small number of rescues necessary in such circumstances without reference to either the Central Bank or the government. In such circumstances the supervisory and regulatory agency may be independent of both the government and the Central Bank. Whether such a system could survive in a much more competitive banking milieu is debatable.

The erosion of such cartels, under the influence of international competition and de-regulation, has led to growing problems with such a system. Greater competition made commercial banks less willing to participate, and reduced the clout of the Central Bank in dragooning unwilling commercial bank 'volunteers'. Moreover, the growing fuzziness of the dividing line between banks and non-banks, the problems raised by foreign banks (and Home vs Host responsibilities), would allow for endless discussion and recrimination over the question of what share of the 'rescue' each 'volunteer' should undertake. For example, the problems that the Bank of England faced in organising the joint Central Bank/bank rescue of Johnson Matthey Bankers were so severe that it called into question the future use, and viability, of this technique.

In so far as the structure of the banking system so develops that implicit CB/bank insurance becomes problematical, then the normal way forward has been to codify and to standardize the insurance system so that each participant's obligations and rights becomes known. Such explicit insurance is usually given statutory support in an Act of Government. See, again, the details of Deposit Insurance recorded in Appendix 1b. There are manifold problems with such explicit deposit insurance. It is extraordinarily hard either to define risk in banking, or to do so in such a way as will avoid (undesirable) portfolio re-adjustments. Large branch banks will claim, with some justification, that they are inherently less risky (per £ of deposits) than small branch banks. In part because the perceived problem is one of systemic contagion, rather than independent, stochastic illness, it is not possible to identify *ex ante* the level of premium that will meet, to any objective level of probability, the potential calls on the explicit insurance fund. In general, therefore, it is necessary to have a funding back-stop to an explicit insurance fund. In some large part because such a back-stop is, by nature, open-ended, whereas the own-funds available to a Central Bank are limited, the back-stop is usually a Government guarantee, with an implied potential *ex post* call on the tax-payer.

As already noted, there is a particularly acute problem with the treatment of large banks. Whereas they are generally less risky and likely to fail, (e.g. because of greater diversification), they are more likely to be rescued, should they nevertheless run into difficulties; 'too big to fail'. They are also more likely to be multi-nationals, whose treatment will therefore involve international ramifications. The only suggested solution is to be even tougher in supervising such banks. But whether this 'solution' has implications for the question of who, which agency, should be responsible for such supervision is less clear. Such huge banks will often have, or be able to

generate, considerable political clout. There is, perhaps, a case for keeping the supervision of such very large banks in the hands of an (independent) Central Bank on the grounds that it may be better able to stand up against them at times of confrontation, but this argument is thin.

So far we have examined the taxonomy of LOLR, bank 'rescue' and insurance, largely without reference to the question of whether the function of regulation and supervision should be undertaken by the Central Bank, or hived off to a separate agency. However he who pays the piper, calls the tune. So long as rescue and insurance were undertaken on an implicit Central Bank/bank basis, without government finance or involvement, then the Central Bank would normally want, as indeed the commercial banks under its wing would also want it to do, to undertake the conjunct function of regulation and supervision.

When, and if, the system switches to one wherein the insurance is explicit, particularly when enacted by Statute and provided with financial back-stop by the Government, then the balance of advantage shifts. If the tax-payer is seen as potentially liable, then the politician will reckon that she has the ultimate responsibility, so that the regulatory/supervisory agency should answer to the Government. If so, particularly if the Central Bank wishes to maintain its independence of action in other fields, there is a much stronger case for a separation of function, with a division between the Central Bank and the agency, or agencies, charged with regulation, supervision, authorization, closure and insurance.

It would, however, be difficult to make such a division of responsibilities complete. A problem with an explicit, (government-based), insurance scheme, is that the process of pay-out and the provision of funds is often lengthy, bureaucratic and cumbersome. In contrast, the need of banks for funding in the case of liquidity/solvency crisis is often sudden and immediate. If only because of institutional and organisational structure, the Central Bank generally remains the only source of immediate funding. So, it may be, in practice, hardly possible to divorce the Central Bank completely from a large role in any 'rescue' exercise, even if the ultimate responsibility and 'deep pockets' lies with the Government.

To some extent such a divorce may be possible if the Central Bank only lends against first-class collateral, or if the lending is both requested, and indemnified, by the separate regulatory agency. Nevertheless, the fact that the Central Bank remains the only practicable source of immediate funding does mean that a separate agency would need to work very closely with the Central Bank. So, whereas it may be possible to create a clear division of responsibility, there is likely to be a continuing overlap in operation and decision-making.

IV CONCLUSIONS

The fact that the functions of banking regulation and supervision on the one hand, and monetary policy on the other, are separated in about half the countries reviewed, and combined in the other, suggests that there are no overwhelming arguments for either model. And that is what we find.

The main case that is usually presented for separation is on grounds of 'conflict of interest'. In its simplest form, that Lender of Last Resort assistance injects additional base money, the argument is feeble. There are, however, stronger grounds for claiming that those concerned with the 'health' of the banking system have, on occasions, sought to restrain interest rate increases desired for other macro reasons, but this may in part reflect a difference of view about how financial factors affect the economy. Such views may, in turn, depend on the particular structure of the banking system, so the question of the appropriate design of regulatory system will need to be answered against the particular financial/banking structure of each country, rather than being capable of resolution as an abstract generality.

This latter is particularly relevant in an examination of a Central Bank's role as 'guarantor' of the efficiency of the payment system. While it is possible to envisage the development of systems that are both efficient and safe, that remains still many years in the future. For the time being, there is likely to be an important role for the Central Bank both in organising and supporting such systems. This implies both an assumption of credit risk, and/or a need to deal with emerging liquidity risks. If so, the Central Bank is likely to want to maintain some regulatory and supervisory functions in order to limit such risks. This is, perhaps, the strongest current ground for advocating the continuing combination of such functions.

The main, historical, basis for arguing in favour of such a combination was rather the Central Bank's objective of preventing contagious systemic crises. Despite the growing chorus of academics deploring such rescues on grounds of moral hazard, there is no evidence of the authorities becoming more willing to accept failures (NB recent events in Scandinavia and Japan). But Central Banks are tending to retreat from their previous primary role for two related reasons. First the banking system is becoming less clearly defined, fuzzier; consequently it is less easy to persuade the members of the banking club to agree to cooperate in financing rescues. So, the second reason is that the Central Bank is less able to organise co-operation on a self-regulatory basis. There is more need to turn to the Government both for statutory measures, and for ultimate financial support. This latter means that the regulatory/supervisory function is tending to shift away from Central Bank control to an independent body more directly under political control. This is, we argue, largely the consequence of structural developments. Even so, the continuing role of the Central Bank as the only available source of immediate last resort liquidity means that, even if formally separated, the two bodies would have to work in practice very closely together.

Consequently, even though a formal separation of function may now become more common among countries than in the past, there remains a question whether that change would make much difference to the practical realities.

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APPENDIX 1B Deposit Insurance Agencies

Country	Name of Scheme	Administration	Membership Year Established	Level of Protection	Level in \$ 17
Australia	No scheme	- -	-	-	-
Austria	Deposit Guarantee Fund	Austrian Banking Association PR	Compulsory 1987	ASh 200,000	\$ 18,000
Belgium	Intervention Fund	Rediscount and Guarantee Institute J 1	Voluntary 1985	BFr 500,000	\$ 15,400
Brazil	Preparing a scheme 2	- -	-	-	-

Continued: Deposit Insurance Agencies

Country	Name of Scheme	Administration	Membership Year Established	Level of Protection	Level in \$
Canada	Canada Deposit Insurance Corporation	Canada Deposit Insurance Corporation PU	Compulsory 1967	C\$ 60,000	\$ 47,100
Denmark	Deposit Guarantee Fund	Danish Insurance Agency PR 3	Compulsory 1987	DKr 250,000	\$ 41,300
Finland	Deposit Guarantee Fund of the Commercial Banks	Governing Board PR 4	Compulsory 1969	No ceiling	No ceiling

Continued: Deposit Insurance Agencies

Country	Name of Scheme	Administration	Membership Year Established	Level of Protection	Level in \$
France	Deposit Guarantee Fund	French Banking Association PR	Compulsory 1980	FFr 400,000	\$ 75,200
Germany	Einlagen-sicherungs-fonds	Federal German Banking Association PR	Voluntary 15 1966	Up to 30% of bank's equity capital	Up to 30% of bank's equity capital
Greece	Preparing a scheme	- -	-	-	-
Hong Kong	No scheme	- -	-	-	-
India	Deposit Insurance and Credit Guarantee Corporation	Deposit Insurance and Credit Guarantee Corporation PU	Compulsory 1962	Rs 30,000	\$ 1,000

Continued: Deposit Insurance Agencies

Country	Name of Scheme	Administration	Membership Year Established	Level of Protection	Level in \$
Ireland	Deposit Protection Fund	Central Bank of Ireland PU	Compulsory 1989	80% of first I£ 5,000; 70% of next I£ 5,000; 50% of next I£ 5,000	\$ 16,800
Italy	Interbank Deposit Protection Fund	Interbank Deposit Protection Fund Council J 5	Voluntary 1987	100% of first L200mln; 75% of next L800mln	\$ 551,500
Japan	Deposit Insurance Corporation	Deposit Insurance Corporation J 6	Compulsory 1971	¥ 10 mln	\$ 81,100
Luxembourg	Deposit Guarantee	Association for the Guarantee of Deposits PR 7	Voluntary 1989	LFr 500,000	\$ 15,400

Continued: Deposit Insurance Agencies

Country	Name of Scheme	Administration	Membership Year Established	Level of Protection	Level in \$
The Netherlands	Collective Guarantee Scheme	De Nederland-sche Bank	J 8	Compulsory 1980	NF 40,000 \$ 22,600
New Zealand	No scheme	-	-	-	-
Norway	Commercial Banks' Contingency Fund	Commercial Banks' Contingency Fund Board	J 9	Compulsory 1961	No Ceiling No Ceiling

Continued: Deposit Insurance Agencies

Country	Name of Scheme	Administration	Membership Year Established	Level of Protection	Level in \$
Philippines	Permanent Insurance Fund	Philippines Deposit Insurance Corporation	PU 10 Compulsory 1963	P 40,000	\$ 1,600
Portugal	Preparing a scheme	-	-	-	-
Spain	Deposit Guarantee Fund	Banco de Espana	PU 11 Voluntary 1977	Pts 1,500,000	\$ 13,500
Sweden	No scheme	-	-	-	-
Switzerland	Convention XVIII	Swiss Bankers' Association	PR 12 Voluntary 1984	SFr 30,000	\$ 20,800

Continued: Deposit Insurance Agencies

Country	Name of Scheme	Administration	Membership Year Established	Level of Protection	Level in \$
United Kingdom	Deposit Protection Fund	Deposit Protection Board J 13	Compulsory 1982	75% of first £ 20,000	\$ 23,400
United States	Federal Deposit Insurance Corporation	Federal Deposit			

Notes at deposit insurance agencies

Those countries were selected for which details were provided on the monetary and supervisory agencies in appendix 1a.

PU Officially organised.
PR Industry arrangements.
J Joint by authorities and participating banks.

In

- 1 The Intervention Fund is created through a protocol signed by the Rediscount and Guarantee Institute and the Belgian Banking Association. The Institute, an intermediary of the National Bank of Belgium, has two functions: to rediscount short-term commercial bills presented to it by financial institutions, which are passed on to the National Bank, and to manage the Intervention Fund. However, the Institute needs the approval of the Intervention Fund Committee, which consists of representatives of the contributing banks, for important decisions, such as rescue operations.
- 2 September, 1988, the National Monetary Council created a new type of financial institution classified as 'multiple banks', which can act in a similar way to the European universal banks. All multiple banks are to participate in a new deposit insurance scheme set up by the National Monetary Council. The scheme needs approval of Congress.
- 3 The agency is led by a five member board appointed by the Minister of Industry, the chairman and one member being independent individuals with economic and legal expertise, two members nominated by the insured banks and one by consumer interests. The board accepted an offer by the Nationalbank to provide secretariat services as it was thought that a permanent independent administration would not be practical.
- 4 The Deposit Guarantee Fund of the Commercial Banks is an independent institution owned by its members (commercial banks), and has its own governing board. In addition, there are similar guarantee funds owned by savings banks and cooperative banks.
- 5 The Interbank Deposit Protection Fund is organised as a banks' consortium under the aegis of the Italian Banking Association and the Banca d'Italia.
- 6 The Governor of the Deposit Insurance Corporation is the Vice-Governor of the Bank of Japan. The management also includes representatives of the private financial institutions, who are members of it.
- 7 It is a mutual, non-profit making association.
- 8 The Collective Guarantee Scheme is established in joint cooperation between the banks and the Nederlandsche Bank.
- 9 The Contingency Fund is a independent legal identity and its activities are administered by a board of directors comprising seven members. Five of the members are elected by the member banks, while one member is appointed by the Norges Bank and the last member is the director of the Banking, Insurance and Securities Commission.
- 10 The Philippines Deposit Insurance Corporation's Board is chaired by the Central Bank Governor, with the PDIC president and the Undersecretary of Finance as members.
- 11 The Deposit Guarantee Fund (Fondo de Garantia de Depositos) is a branch of the Banco de Espana and is engaged in preventing bank crises and in insuring deposits. The first type of intervention includes the surveillance activity on a problem bank from the fund, take-over operations and finally the possibility of selling troubled banks. In addition, the Banking Corporation (Corporacion Bancaria) was created with the objective to acquire a majority shareholding in troubled banks, to re-establish sound management and a secure base for operations and ultimately to sell back the shareholding to the private sector. If it is clear, that a bank cannot be returned to a healthy state, then it is liquidated. However, it

- was decided to enlarge the Deposit Guarantee Fund, which was considered to be a more satisfactory means of dealing with ailing banks.
- 12 The so-called Convention XVIII is an agreement among the members of the Swiss Bankers' Association under which banks mutually guarantee savings deposits. The convention does not provide the depositor with a legal claim. Although it has therefore no legal status as deposit insurance, we rank the convention under deposit insurance agencies, as its purpose is to provide deposit protection.
- 13 The Deposit Protection Board consists of the Governor of the Bank of England as Chairman, two other ex-officio members of the Bank of England, three members of contributory institutions, together with a number of officers of the Bank of England.
- 14 The Corporation is run by a three member Board of Directors. Two directors are appointed by the President for six year terms and the third is the Comptroller of the Currency, an ex-officio member.
- 15 Voluntary, but de facto compulsory, since a banking licence will not be issued to a bank that does not participate in a depositor protection scheme.
- 16 Compulsory for FED member and national banks.
- 17 Exchange rates against US \$ on January 25, 1993

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