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SHOULD THE FUNCTIONS OF MONETARY POLICY AND BANKING SUPERVISION BE SEPARATED?

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1. Introduction

This paper considers whether monetary policy and banking supervision should be separated. Separation is a current policy issue in the context of the proposed functions of the prospective European Central Bank (ECB). The statute of the ECB (Council of the European Communities 1992) empowers the ECB to conduct EU-wide monetary policy, but leaves the responsibility for banking supervision with the national authorities. The ECB thus seems to follow the German model of separating the two functions rather than the UK model of combining them.

To address the separation issue we begin by examining empirically which regime (combined or separated) is less prone to bank failures. However, the regime with the minimum number of banking problems is not necessarily the most efficient in welfare terms. If a low frequency of bank failures was, for example, the result of a tight regulatory and supervisory system, then it is not clear whether a reduction of costly bank rescues would outweigh the potential benefits of a less strict regulatory system. We therefore go on to analyse which regime tends to generate a more efficient resolution of such bank failures while, at the same time, avoiding possible systemic consequences. In particular, we look at the methods of handling a failing bank and the sources of funding used under each regime. Are these methods and funding sources roughly the same for each regime, or are there significant differences in the process of resolving bank failures?

Finally, we examine whether bank rescues are financed on an implicit central bank/commercial banks basis, or on an explicit deposit insurance/government basis. So long as rescues and insurance are primarily undertaken by the central bank in conjunction with the commercial banks, then the central bank would also naturally want to undertake supervision. There have, however, been some signs of a trend towards using tax-payers’ money for bank rescues which strengthens the case for separation of the two functions and establishment of a government agency for the supervisory function.

The paper is organised as follows. In Section 2, we start with a brief account of the historical evolution of the central bank’s micro-function (banking supervision) and its involvement in organising bank rescues. In this context, we discuss the role of the lender of last resort and the introduction of deposit insurance. There is currently a diversity of institutional arrangements, but the
differences are found to be greater in appearance than in reality. Despite a growing body of academic criticism (e.g. Benston et al. 1986) deploiring such bank rescues on grounds of moral hazard, our maintained assumption is that such bank rescues will continue. Our view is that the institutional 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. However, there are a number of more normative issues about whether the monetary and supervisory functions should be separated. We deal with two such issues in Section 3.

First, we address the question whether the combination of monetary and regulatory functions 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 a central bank’s conduct of monetary macro-policy. If so, this conflict of interest would be an argument for separation. Then, we turn to an argument raised against separation: the central bank’s objective of preventing systematic risk. In which cases is it appropriate for the central bank to use its lender-of-last-resort function? And should such a LOLR role be accompanied by supervisory powers for the central bank to contain moral hazard?\footnote{See, for example, Folkerts-Landau and Garber (1992), Giovannini (1992), and Monticelli and Vinals (1993).}

Next, in Section 4, we address the question of bank rescues in the context of a cross-country survey of how some 104 major bank failures have been handled. Such failures have frequently occurred suddenly and have needed, or have been perceived to need, a swift injection of cash, unless there was to be immediate closure, with whatever contagious consequences that might then follow. Whichever institutions might be formally responsible for supervision, and might have ultimately to pay for the costs of rescue, is there any alternative to the central bank as provider, in its lender-of-last-resort role, of immediate extra liquidity? If not, is a formal division of responsibilities sensible, given that joint, combined involvement will normally be required? The conclusions follow in Section 5.

2. History

The early history of central banking led to the function 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, the UK, France, and Italy), the chartered bank that subsequently evolved into 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 1914. 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 in 1866 when there was some suspicion 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 solvent (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. 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 in 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 carried out by the same institution (i.e. 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 cases where considerable sums are at risk as a *primum 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).

Not only was the potential scale of central bank crisis management to some extent constrained by the size of its balance sheet, 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), 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

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2 See, for example, Chapter VII of *Lombard Street* (Bagehot 1873), especially the final two pages.
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.

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., Trust Companies in New York in the crash of 1907, could not count on help, as was also true of British building societies before 1914. The need to be a member of a specific club, with certain accepted rules of conduct, in order to be reasonably confident of a concerted rescue, thus acted to contain moral hazard, at least among ‘club members’. 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 (Calomiriris 1989).

In effect, this was largely a system of self-regulation, through cartelised banking clubs, under the leadership of the central bank. This system has subsequently run into increasing difficulties for a variety of reasons. First, deregulation and fierce (international) competition, from the 1960s onwards, led to a collapse of the cartelised banking clubs with their restrictive practices. This not only led to some diminution in the willingness and ability of the system to apply mutual surveillance, but also to far greater reluctance of commercial banks to use their own funds on the rescue of competitors. The Bank of England, for example, had great difficulty in persuading other banks to share in the rescue of Johnson Matthey Bankers in 1984. In addition, the break-down of the dividing lines between the previously distinct clubs, and the resulting fuzziness of the structure of the financial system, has made any self-regulatory system that much more difficult.

Whereas the Bank of England played an active role in organising and leading bank rescues, the German Reichsbank, and its forerunner the Prussian Bank, were far less involved in such micro-management of the financial system. In the early 19th century, the Prussian Bank followed restrictive rules for the discounting of bills (i.e. only bills with three ‘good’ signatures and a maturity of, at most, three months could be discounted). Moreover, the Prussian Bank’s policy of only allowing small increases in the note circulation contributed to a cessation of payments at Bankhaus Schaffhausen during the banking crisis in Cologne in the 1840s (Ziegler 1993). But the Prussian Bank took up its role as
lender of last resort after the ceiling imposed on the issue of its banknotes was abolished in 1856. Thus, the Bank provided liquidity to the banking system by discounting bills during the crises of 1857, 1866, and 1870. Again, during the money crisis of 1901, the Reichsbank, the successor of the Prussian Bank, liberally extended credits to the banking system.

Although the Reichsbank (and previously the Prussian Bank in its later years) stood ready to provide liquidity to the banking system as a whole, by purchasing bills on the open market and expanding its note issue, at times of financial stress, it managed to avoid direct contact with individual banks (Goodhart 1988). Indeed, there were a number of bankruptcies in the 1900s, of which the Leipziger Bank was the most important, from which the Reichsbank stood aside. Furthermore, the Reichsbank played little, or no part in the regulation or examination of commercial banks. The reasons why the macro function of monetary policy and the micro function of banking supervision could be separated in Germany during these years include the following: first, the ratio of cash to sight deposits was high, as the public mostly used cash rather than checks for payments; next, the ratio of capital to deposits was much higher in German than in English banks. Thus, the German banking system was less prone to contagious bank runs.

The solvency of the German banking system was, however, severely imperilled during the Great Depression of the 1930s (Lindenlaub 1994). Moreover, the power of the Reichsbank to intervene in this banking crisis was constrained at that time. High levels of foreign debt, coupled with a system of fixed exchange rates, forced the Reichsbank to pursue a tight policy to stem the withdrawal of deposits by domestic and foreign creditors. So the government had to intervene to save the threatened banks by acquiring substantial shareholdings in the ailing banks, which were subsequently returned to the private sector (Francke and Hudson 1984). In reaction, the government tightened the regulatory regime for banks under the Reich Banking Law of 1934. After the Second World War, this Law was transformed into the Federal Banking Law, which led to the foundation of the Federal Banking Supervisory Office, an independent institution responsible to the Minister of Finance, in 1961. Although the Banking Law provides for cooperation with the Bundesbank (see the Appendix), the functions of monetary policy and banking supervision are thus officially separated in Germany.

In line with the German experience, the scale of funding necessary in some other banking crises (e.g. in the USA, Scandinavia, and Japan) has gone far beyond the sums which the central bank can provide from its own resources, or which the other commercial banks 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 and Germany for the banks in 1932–3, or for the US savings and loans recently; and as in Scandinavia in the last few years.\(^3\) When the government has been providing

\(^3\) It has been estimated that the saving and loan crisis cost the US tax-payers about $180bn (equivalent to 3.2% of GDP). The government support in the Scandinavian countries has been estimated at 8.2% of GDP in Finland, 4.0% in Norway, and 6.4% in Sweden (IMF 1994).
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.

Even so, there remains no generally accepted answer to the question, where supervision and regulation should be undertaken: in-house in the central bank or in a separate purpose-built institution? In the Appendix 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; and in several cases, e.g., France, the precise division of responsibilities is somewhat blurred. 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 the USA) therefore, have separate bodies, while countries with UK links (Australia, New Zealand, Hong Kong, and Ireland, with Canada as an exception) tend to combine them.

Although there are no immediately obvious characteristics distinguishing countries with combined from those with separated functions, we discuss two such possible characteristics, namely a central bank's relative independence from the government and the structure of a country's banking system. A comparison of the division of central banks into those with combined or separated functions against indices of relative independence, as constructed for example by Alesina and Summers (1993), suggests that there is a tendency for more dependent central banks to have combined functions. This may be because in countries where the central bank was independent on the government for monetary policy, central bank officials tended to give more weight to other fields in which they could still take the lead, often including more micro-level relationships with financial intermediaries. A second potentially important characteristic is the structure of a country's banking and financial system. There may be less need for central bank intervention (and thus central bank supervision) in countries with a concentrated and well capitalised banking system. We explore this argument further in the next section.

A feature of the last decade has been the rapid expansion of deposit insurance schemes to new countries. In our sample of 24 countries, only eight countries had established deposit insurance schemes before 1980, while 10 countries have established such schemes since 1980 (US Department of the Treasury 1991).4

4 In fact, a three-way split between monetary, supervisory and deposit insurance agencies can be made in these countries with deposit insurance. However, the question of how deposit insurance is organised is of somewhat secondary importance for our study here. Deposit insurance schemes which are not pre-funded are only used for payouts to the insured depositors after the failing bank is liquidated (e.g. in France, the Netherlands, and the UK), so the insurance agency plays little
Furthermore, the European Council has recently adopted a Directive to require all EU countries to introduce a common scheme of minimum insurance levels for most depositors, beyond which individual member States can extend protection levels, if they so wish (Schoenmaker 1993). 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 savings and loans debacle, and the growing chorus, especially in the USA, of academic condemnation of (mis-priced) deposit insurance. But the organisers of most recent schemes have learnt from that experience not to provide 100% unlimited insurance, but to put an effective ceiling on the size of deposits to be protected and/or to require some form of co-insurance.

To recapitulate and summarise, because competition within the banking system has become so much greater, the ability of central banks to organise and to coordinate rescues of banks (and of their depositors) on a generally acceptable self-regulatory basis has been slipping. So there may be a greater need for prior codification of the rights and responsibilities of all concerned in such crisis circumstances.

3. Arguments for and against separation

3.1. A conflict of interest?

A major argument for divorcing the bank regulatory from the monetary 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 flow of reserves to the system. The implied concern is that such lending to a troubled bank will increase the net inflow of reserves to the banking system and thus undermine monetary policy. In this simple guise the 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 desired amount of reserve injection.

The assumption must therefore be that lender-of-last-resort action will change the distribution of reserves among banks. And the main purpose of the exercise, where the identity of the recipient bank is crucial, will have been to

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role in the actual decision whether to rescue. While pre-funded schemes are more actively involved in bank failure resolutions (e.g. in Spain and the USA), the central bank and/or the supervisory agency is (are) usually represented on the board of the deposit insurance fund to reduce coordination costs.

5 The minimum level of insurance is set at 20,000 ECU. 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, thus allowing 10% co-insurance, up to the 20,000 ECU level (Council of the European Communities 1994).
lessen the likelihood of contagious failure, leading to systemic problems. So LOLR actions, even 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 qualified 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 from 1979 to 1982, central banks steer the monetary system by choosing an interest rate at which to inject, or withdraw, reserves. Within this more usual context, a conflict of interest could arise between the monetary authorities, who wish for higher interest rates (e.g., to maintain an exchange rate peg or to bear down on inflation), and the regulatory authorities, who are frightened about the adverse effects such higher interest rates might have upon the profitability and solvency of the banking system. It is in this guise that the conflict has, indeed, from time to time occurred. Moreover, the combination of functions might lead to expectations on the part of the private sector that the central bank might be influenced by financial system stability considerations when determining monetary policy. However, with the discussions usually internalised 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 politically subservient central bank, suggests that such conflicts of interest between regulatory and monetary objectives are an order of magnitude less important than conflicts between purely monetary objectives and political imperatives.

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 financial system, when purely monetary considerations might have led to higher rates. Thus, the effects on US monetary policy of the weakness of savings and loans, 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 USA, 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.

This raises the question of what damage high short-term interest rates may do to the banking system. Obviously this damage depends on how long such interest rates are likely to last. But, beyond that, it may also depend importantly on the structure of the banking system, on both the liability and asset sides of the balance sheet. Those banking systems which are primarily financed by a retail deposit base, whose interest rates are unlikely to follow (large) changes in money market wholesale rates, would be better able to cope with (temporarily) tight monetary conditions. Again, where bank loans and mortgages are made on a fixed rate basis, the system may be less sensitive, both economically and
politically, to temporary periods of high rates, than when such loans are on a variable rate basis. Furthermore, those banking systems which were effectively nationalised, 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. These examples suggest 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 mis-match positions through wholesale markets in a competitive milieu, the greater such dangers of conflict are likely to be.

These conflicts of interest are, however, generically different from the standard principal-agent analysis in economic theory. Certainly differences in incentives on personnel with differing responsibilities may often play a role. But one can easily envisage occasions where officials in charge of monetary policy, fearful of systemic stability, will want to rescue a bank which officials responsible for regulation will want to close, e.g., to avoid moral hazard. Such conflicts are thus genuine and cannot be resolved by institutional rearrangements. Indeed there are some, including some central bankers, who see the need to resolve such conflicts as an argument in favour of maintaining regulatory and supervisory functions within the central bank. Clear statutory guidelines for the responsibilities of those entrusted with delegated authority for the several functions of monetary and supervisory management might be a better solution than institutional separation.

It is, therefore, at least possible to argue that where such conflicts really become important (in an open, competitive, market-driven system), they have to be internalised within a single authority to obtain an efficient resolution. Where such conflicts have been less pressing, because of a differing structure, e.g., in Germany and Japan (Bisignano 1992), 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 1973–4 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 19th 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

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6 In most combined central banks, such as the Bank of England, the bank examiners are kept separate from the rest of the staff, with strict physical separation—for the sake of security and confidentiality. But any important decision on rescues would be taken not at the operational level, but at the strategic, policy-making level, where the wider concerns of the central bank would be fully taken into account.
the regulators for granted otherwise. Moreover, there may often be a gap between the expectations of the public about the role of a banking supervisor, i.e., that no-one should ever lose any part of their deposit as a result of a bank failure, and the objective of the supervisors, i.e. to prevent systemic collapse and to alleviate asymmetric information by the partial protection of ill-informed clients. 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. The potentially adverse reputational effect on the central bank as an institution that may, almost necessarily, be incurred as a consequence of conducting banking supervision is now becoming widely recognised, at least among central banks. 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. In at least one case, that of the Reserve Bank of New Zealand, the central bank has decided to reduce its direct involvement in banking supervision, as described in its latest 1994 proposals (Reserve Bank of New Zealand 1994).

3.2. Systemic stability

The main argument for combining the functions of monetary and supervisory management within the central bank is the central bank’s concern for the systemic stability of the financial system. Such discussions on systemic stability focus on when it might be appropriate for the central bank to provide lender-of-last-resort facilities to banks in difficulties and whether such a LOLR role should be accompanied by a supervisory role to contain moral hazard. A distinction frequently made in the literature relating to a central bank’s LOLR function is that between those circumstances in which a commercial bank is illiquid, but not insolvent, and those cases in which the bank is insolvent, and may or may not be illiquid. In much of this literature from Bagehot (1873) to Humphrey (1975) and Humphrey and Keleher (1984), it is argued 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 cannot, usually, be maintained. With an efficient money, and interbank, 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 being unable to obtain offsetting in-payments; this occurred in the well-known Bank of New York case in 1985 (case 99 in Goodhart and Schoenmaker 1993). 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 98). 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 books of the supplicant borrower sufficiently carefully to tell whether the bank, or other financial intermediary, is insolvent, or not.

There is a strong school of academic thought (e.g. Benston et al. 1986; Dowd 1992; Kane 1992; and White 1984) that believes that official intervention in such circumstances is misguided. They argue that there should be no such protection, explicit or implicit, 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 maintain that the protection (insurance) of depositors is almost inevitably mis-priced and hence generates so much moral hazard that the need for rescues is largely self-inflicted. 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. 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. The next section analyses such bank rescues and their impact on systemic stability in more detail.

4. Survey of bank failures

To help in assessing whether the functions of monetary policy and banking supervision should be combined (in the central bank) or separated, we conducted an empirical study of how some 104 major bank failures have been handled. We have focused on three issues. The first type of evidence is the frequency of bank failures under each regime. Second, we reviewed the nature of bank failure resolution to see whether any differences emerge. Third, we have tested whether there is a shift from implicit central bank/commercial banks funded bank rescues to explicit deposit insurance/government funded rescues. In Section 2, we argued that the organisation and funding of bank rescues by the central bank in conjunction with the commercial banks has run into increasing difficulties.

An appendix in Goodhart and Schoenmaker (1993) contains a cross-country survey of 104 bank failures in 24 countries and covers the 1980s and early 1990s, with a few important cases taken from the 1970s. The selection of countries corresponds with the set of countries of which institutional details are provided in the Appendix on monetary and supervisory agencies published with this paper. The main sources for the data are country reports of banking systems compiled by IBCA (a London based rating agency), the Financial Times, and The Economist.\(^7\) The criteria for including bank failures from these

\(^7\) 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 onwards. An initial draft was sent to a number of central banks, but not to all countries for which we provide cases of bank failures. We are very grateful to them for corrections and additional information. Any remaining errors are our responsibility.
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 the appendix in Goodhart and Schoenmaker (1993) provides a complete coverage, least of all for the USA, where their banking system has resulted in a proliferation of failures. Nevertheless, we hope that we have provided reasonably comprehensive coverage of the larger failures over a wide range of developed countries.

This procedure is virtually bound to lead to severe under-sampling of the occasional failures of small banks. 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. 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.

First, we examined which regime (combined or separated) is less prone to bank failures. Of the 24 countries in our sample, 11 countries had a combined regime and 13 a separated regime during the 1980s (see the Appendix). In Table 1, we report the number of bank failures under each regime. The $\chi^2$ goodness of fit test, which compares observed and expected frequencies, is applied to determine any statistically significant differences (Lindgren 1976).

Table 1

<table>
<thead>
<tr>
<th>Supervisory regime</th>
<th>Number of bank failures</th>
<th>Combined</th>
<th>Separated</th>
<th>Total</th>
</tr>
</thead>
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<tr>
<td>Observed frequency</td>
<td>33.0</td>
<td>71.0</td>
<td>104</td>
<td></td>
</tr>
<tr>
<td>Expected frequency</td>
<td>47.7</td>
<td>56.3</td>
<td>104</td>
<td></td>
</tr>
</tbody>
</table>

$\chi^2$ goodness of fit test.
$\chi^2(1) = 7.81$.
$p = 0.005$ (significant at 99% level).

Hong Kong had a separated regime before the monetary and supervisory agencies merged into the Hong Kong Monetary Authority in 1993 (see Appendix).
We find a strong result: countries with combined regimes experience statistically significant fewer failures. However, the regime with the smallest number of bank failures is not necessarily the most efficient one in welfare terms, as indicated in the Introduction. In particular, when a small number of bank failures can be (partly) attributed to the existence of a strong bank cartel, the welfare comparison is less clear. Academics usually stress the efficiency losses of rent-seeking bank cartels, when they make a welfare comparison of market-oriented and bank-intermediated financial systems (see, for example, Bisignano 1992; and Folkerts-Landau et al. 1991). Another example is a system of tight regulation and supervision, which may be responsible for a lower number of bank failures. Again, it is not obvious that having such a low frequency of costly bank rescues would outweigh the potential gains from a more permissive regulatory system.

The second main question that we sought to explore is whether the nature (method and funding) of bank failure resolution is different in countries with a combined regime from that in countries with a separated regime. For example, some troubled banks continue on a stand-alone basis 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. Another way of rescuing banks is putting them under a special regime administered by either the deposit insurance agency or the government. Related to this is the creation of a special fund to deal with a set of bank failures or with the whole of a troubled bank sector. Examples of such a special fund can be found in the USA, Norway, Finland, Sweden, and Japan. Finally, a failing bank can be put in liquidation. Next, four sources of funding can be identified: the central bank, commercial banks, deposit insurance, or the government. Deposit insurance is usually financed through regular or ad-hoc contributions from the participating banks with contingency funding arrangements backed by the government. In some cases banks are liquidated or taken over by another bank without any external funding.

The results are summarised in Tables 2 and 3. In some cases a combination of several methods is applied as in the case of Continental Bank of Canada (case 18 in Goodhart and Schoenmaker 1993): this troubled bank was finally taken over after an initial rescue package in the form of credit lines granted by

<table>
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<th>Methods</th>
<th>One method</th>
<th>Two methods</th>
<th>Total</th>
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</thead>
<tbody>
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<td>Rescue package</td>
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<td>11</td>
<td>22</td>
</tr>
<tr>
<td>Take-over by bank(s)</td>
<td>33</td>
<td>16</td>
<td>49</td>
</tr>
<tr>
<td>Special administration</td>
<td>12</td>
<td>11</td>
<td>23</td>
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<tr>
<td>Liquidation</td>
<td>27</td>
<td>4</td>
<td>31</td>
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<tr>
<td>Subtotal</td>
<td>83</td>
<td>42</td>
<td>125</td>
</tr>
<tr>
<td>Total</td>
<td>83</td>
<td>21</td>
<td>104</td>
</tr>
</tbody>
</table>
the central bank and other commercial banks appeared to be insufficient. Funding can also be provided by more than one source.\textsuperscript{9} Table 2, reporting how cases of potential failure have been handled, shows that 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 the remaining cases, the rescue was directly handled by the regulatory authorities, either by a rescue package, or by the regulator administering the bank directly. The latter could often be described as cases of partial, or complete, nationalisation by a public sector body. Table 3, summarising how these operations were financed, indicates that in about one quarter of the sample no external financing was used. In 22 cases the deposit insurance fund took on the whole burden, and in 18 cases the government did so. It is comparatively rare for the commercial banks to put up money in such cases just by themselves (nine cases); they are much more likely to do so in conjunction with the other official bodies (16 cases). It is very rare for a central bank to undertake a rescue just by itself (two cases). It will almost always do so in conjunction with commercial banks (eight cases), the deposit insurance agency (six cases) or the government (four cases), or with two, or more, categories of supporting institutions (seven cases).

We distinguish, in Tables 4 and 5, between those cases in which the central bank of the country combined the functions of monetary management and banking regulation, and those cases where it did not. The purpose of this is to examine whether such combination is associated with a significant differentiation either in the method adopted for dealing with a failing bank or with the resulting choice of funding. As in Table 1, we test for such differences by means of a frequency distribution. We find no significant difference between the combined and separated supervisory regime for the method of dealing with

\textsuperscript{9} A further breakdown of the results for the cases in which two methods, or two funding sources, were used is omitted for reasons of space, but is available in Goodhart and Schoenmaker (1993).
Table 4
Methods applied under combined and separated regimes

<table>
<thead>
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<th>Supervisory regime</th>
<th>Combined</th>
<th>Separated</th>
<th>Total</th>
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</thead>
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<tr>
<td>Rescue-pakage</td>
<td>6</td>
<td>16</td>
<td>22</td>
</tr>
<tr>
<td>Take-over by bank(s)</td>
<td>17</td>
<td>32</td>
<td>49</td>
</tr>
<tr>
<td>Special administration</td>
<td>4</td>
<td>19</td>
<td>23</td>
</tr>
<tr>
<td>Liquidation</td>
<td>11</td>
<td>20</td>
<td>31</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>38</strong></td>
<td><strong>87</strong></td>
<td><strong>125</strong></td>
</tr>
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</table>

$\chi^2(3) = 2.75$.
$p = 0.43$ (not significant at 90% level).

Table 5
Sources of funding used under combined and separated regimes

<table>
<thead>
<tr>
<th>Supervisory regime</th>
<th>Combined</th>
<th>Separated</th>
<th>Total</th>
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<tbody>
<tr>
<td>Central bank</td>
<td>6</td>
<td>21</td>
<td>27</td>
</tr>
<tr>
<td>Commercial banks</td>
<td>11</td>
<td>14</td>
<td>25</td>
</tr>
<tr>
<td>Deposit insurance</td>
<td>12</td>
<td>28</td>
<td>40</td>
</tr>
<tr>
<td>Government</td>
<td>3</td>
<td>25</td>
<td>28</td>
</tr>
<tr>
<td>No external funding</td>
<td>8</td>
<td>15</td>
<td>23</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>40</strong></td>
<td><strong>103</strong></td>
<td><strong>143</strong></td>
</tr>
</tbody>
</table>

$\chi^2(4) = 8.39$.
$p = 0.08$ (significant at 90% level).

A failing bank. But we find a weakly significant difference (at the 90% level) for the source of funds. This weak difference is due to the fact that less government and more commercial bank funds are involved in countries where the central bank combined the functions of monetary control and supervision.

What lessons, if any, can we learn from this 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. Second, the authorities have been reluctant to see failures end in straightforward liquidation. In the majority of cases, 73 out of 104, the failing bank has been rescued and in 20 out of the remaining 31 cases of liquidation deposit insurance payouts were made. Third, a system where the central bank remains in charge of supervision and regulation is somewhat more likely to involve the commercial banks financing rescues and less likely to make 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. The erosion of such cartels, under the influence of international competition and deregulation, 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, and the problems raised by foreign banks 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/commercial banks rescue of Johnson Matthey Bankers were so severe that it called into question the future use, and viability, of this technique.

We have tested whether such a decline in central bank/commercial banks financed rescues, and hence an increase in the use of tax-payers' money, can be detected in our survey of 104 bank failures. Table 6 presents the frequency distribution. In the rows, we divide our period into four sub-periods of five years. In the columns, we split the sample into bank rescues financed by the central bank and/or commercial banks and rescues financed by the government and/or the deposit insurance agency. While the funding was roughly equally divided among the two groups during the first three sub-periods, the balance of funding has progressively shifted to using tax-payers' money during the last sub-period: government/deposit insurance funding was used more than twice as much as central bank/commercial banks funding in the early 1990s. There may thus be a recent trend towards using more tax-payers' money, with the \( \chi^2 \)-test in Table 6 close to the 90% significance level (\( p = 0.12 \)).

Reviewing our results, we thus find evidence that bank failures occur less

<table>
<thead>
<tr>
<th>Period</th>
<th>Central bank—commercial banks</th>
<th>Deposit insurance—government</th>
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<tr>
<td>1974–1978</td>
<td>5</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>1979–1983</td>
<td>11</td>
<td>11</td>
<td>22</td>
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<tr>
<td>1984–1988</td>
<td>21</td>
<td>20</td>
<td>41</td>
</tr>
<tr>
<td>1989–1993</td>
<td>15</td>
<td>34</td>
<td>49</td>
</tr>
<tr>
<td>Total</td>
<td>52</td>
<td>68</td>
<td>120</td>
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</table>

\( \chi^2(3) = 5.86 \).  
\( p = 0.12 \) (not significant at 90% level).
frequent under a combined regime. However, as the trade-off between the efficiency and the stability of particular banking systems is not clear ex ante and, perhaps difficult to estimate ex post, we do not regard these findings as strong support for the case of combining the functions of monetary policy and banking supervision. In addition, we find weak evidence that a combined regime tends to rely slightly more on central bank/commercial banks funding and less on government funding for the resolution of bank failures. Finally, we observe a trend, although not significant, towards using tax-payers' money.

We are now in a position to answer the question of whether the function of regulation and supervision should be undertaken by the central bank, or hived off to a separate agency. We start with the principle that he who pays the piper calls the tune. So long as rescue and insurance were undertaken on an implicit central bank/commercial bank basis without government finance or involvement, the central bank would normally want to undertake the conjunct function of regulation and supervision, as indeed the commercial banks under its wing would want it to do. But this is increasingly ceasing to be so in many countries. 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 or he has the ultimate responsibility, so that the regulatory/supervisory agency should answer to the government. While the government may, therefore, feel impelled to take ultimate responsibility, it too is likely to delegate authority to a quasi-autonomous body, if only to escape the onus, and mud flung about, when failures do occur. 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 a 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.
5. 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 may need to be answered against the particular financial/banking structure of each country, rather than being capable of resolution as an abstract generality.

An argument for combining the monetary and regulatory functions is the central bank’s objective of preventing contagious systemic crises. Starting in the 19th century, most central banks have become involved in the micro management of the financial system: in cooperation with the commercial banks, the central bank used to orchestrate the rescue of ailing banks. Despite the growing chorus of academics deploiring such rescues on grounds of moral hazard, there is no evidence of the authorities becoming more willing to accept failures (see, for example, recent events in Scandinavia and Japan). In so far as the central bank continues to be involved in organising and coordinating bank rescues, which implies an assumption of credit risk, it is likely to want to maintain some regulatory and supervisory functions in order to limit such risk. This is, perhaps, the main, historical, argument for advocating the continuing combination of such functions within the central bank.

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; consequently it is less easy to persuade the members of the banking club to cooperate in financing rescues. So, secondly, the central bank is less able to organise cooperation on a self-regulatory basis. There is more need to turn to the government both for statutory measures and for ultimate financial support. This 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 than in the past, there remains a question whether that change would make much difference to the practical realities of central banking.
C. GOODHART AND D. SCHOENMAKER

ACKNOWLEDGEMENTS

We are indebted to two anonymous referees for helpful comments and useful suggestions, but responsibility rests entirely with the authors. Financial support from the Economic and Social Research Council under award number 102-25-1005 is gratefully acknowledged.

REFERENCES


**APPENDIX**

*Monetary and supervisory agencies*

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<th>Country*</th>
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<th>Supervisory agency</th>
<th>Notes</th>
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## APPENDIX (continued)

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*Notes:*
- The sample covers all industrialised countries (OECD, Hong Kong and Venezuela).
- C = Combined.
- S = Separated.
- CB = Central Bank.
- MF = Ministry of Finance.
- MI = Ministry of Industry.

1. In June 1991, the Banking Commission changed its name to the Banking and Finance Commission (BFC). The BFC is a legally autonomous institution and has a twofold task: controlling the banks and controlling the issuing of public securities. One member of the board of the National Bank of Belgium is a member of the BFC. The National Bank of Belgium collects prudential returns and transmits them to the BFC.
2. The Office of the Superintendent of Financial Institutions (OSFI) was created in June 1987 and is the product of the merger of the Office of the Inspector General of Banks and the Superintendent of Insurance. OSFI is responsible for the supervision of all regulated financial institutions that are federally incorporated, that is, banks, trust and loan companies, insurance companies and cooperatives. The Superintendent is an officer of the Department of Finance.
3. The Finance Inspectorate was formed at the end of 1987 as a result of the merger of the Bank Inspectorate and the Insurance Industry Inspectorate. The Finance Inspectorate is a directorate of the Ministry of Industry. The Nationalbank is the granter of liquidity support, while the Inspectorate is responsible for the supervision of banks. The Inspectorate has no formal link with the Nationalbank, although there is in practice cooperation between the two on many issues.
4. The Banking Commission (Commission Bancaire) is a composite body chaired by the governor of the Banque de France, with representatives from the Treasury. The Banking Commission supervises compliance with the prudential regulations. The inspections and on-site examinations are carried out by the Banque de France on behalf of the Banking Commission.
5. The Federal Banking Supervisory Office (Bundesaufsichtsamt für das Kreditwesen) is entrusted with the supervision of banks. It is responsible for sovereign acts, such as licensing and issuing regulations, whereas the Bundesbank is involved in current supervision by collecting and processing bank prudential returns. The Banking Act provides for cooperation between the Supervisory Office and the Bundesbank (i.e. the two bodies communicate information to each other, and the Supervisory Office has to consult the Bundesbank on new regulations).
6. The Office of the Exchange Fund managed the foreign exchange reserves and set interest rates. The Office of the Banking Commissioner was responsible for supervision. In April 1993 both Offices merged formally into a single body, the Hong Kong Monetary Authority.
7. The Ministry of Finance (in particular the Banking Bureau) has broad responsibility for licensing, regulating and supervising banks (authority derived from the Banking Law). The Bank of Japan has no regulatory power stemming from laws. The Bank of Japan's authority is rather contractual and is generally based on an individual agreement with its client banks.
8. The Banking, Insurance and Securities Commission, founded in 1986, is administratively subordinate to the Ministry of Finance. This Commission has the authority to supervise all financial institutions, whereas the Ministry of Finance grants licences to set up a bank.
9. The Bank Inspection Board used to be responsible for the supervision of banks. Supervisors of banks, securities and insurance companies merged into the Swedish Financial Supervisory Authority in July 1991.
10. The Federal Banking Commission is an independent federal authority.
11. The Office of the Comptroller of the Currency, an agency within the US Treasury Department, supervises national banks and federally licensed branches of foreign banks. The Federal Reserve Board and the State Governments supervise state chartered banks which are members of the Federal Reserve System. State chartered, non-member banks are supervised by the State Governments. The Federal Reserve Board has the authority to supervise all bank holding companies and their subsidiaries. In addition, the autonomous Federal Deposit Insurance Corporation has some supervisory responsibilities.
Sources:
OECD (1992), Banks under Stress, Paris.
Several Central Banks.