Multiple Regulators and Resolutions

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1. Multiple Regulators within a Single Country

When the new Labour government came into office in 1997, it removed the function of supervising banks from the Bank of England and transferred it to the newly formed Financial Services Authority, a body which was to supervise virtually all financial institutions. That meant that crisis management had, from then on, to be handled jointly, rather than having a single central locus for decision-making. The FSA would have the most intimate knowledge about the condition of any bank in difficulties, but it had no access to money, to provide Lender of Last Resort (Emergency Liquidity Assistance) to a bank in difficulty. The Bank could provide LOLR assistance, but was now to be at arms-length from each individual bank.

But the Bank is a public sector institution, and so any moneys that it may put at risk of loss in emergency lending are not those of private sector shareholders, but of taxpayers. Ever since Nigel Lawson, the then Chancellor of the Exchequer, had complained strongly about the commitment of (quite a small amount of) Bank funds in 1984 in the course of handling the Johnson Matthey bank collapse and rescue without his prior consent,[1] it had become clear, de facto if not yet de jure, that the Bank could not undertake any lending activity, or give commitments or guarantees, e.g. in the context of LOLR operations, where there was any significant risk of loss

without prior notification to, and approval from, the political authorities in the Treasury.

So, shortly after the structural break, when the FSA was founded, a Memorandum of Understanding (MOU) was agreed between these three parties, (Bank, FSA and Treasury), about how crises were to be handled. It ran roughly as follows:- Any bank which found itself in difficulties should contact the FSA, (n.b. not the Bank), since the FSA has the role of providing the connection between the individual financial institutions and the authorities. Whilst the FSA would in any case inform the Bank, it could decide whether, or not, the closure of the bank in difficulties might have systemic implications. If the FSA was certain that there could be no such implications, - and it would need to be very certain on that point, since systemic stability remained the responsibility of the Bank -, it could proceed to seek a purchaser for the bank in difficulties, or to close it, though the FSA could of itself provide no emergency funding.

If there was any question of there being systemic implications, the Bank would be called in to decide on how best to handle the problem from an overall systemic viewpoint. While the politicians and the Treasury (HMT) would be notified, in theory the Bank and FSA could proceed with any course of action that did not commit to any risk of the usage (loss) of taxpayers (Bank) funds on their own responsibility. If, however, there was any such risk, then HMT would also have to approve. Thus crisis management was now to be run in a tripartite way.

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[1] Lawson (1992), pp 402-9.

In practice, the immediate effect of the MOU was to establish a Tripartite Standing Committee (TSC), involving senior officials in the three organisations, Bank, FSA, HMT. It meets on a regular monthly basis to review emerging risks and potential threats to financial stability. This is partly so that the relevant officials can get to know each other, (to overcome the `who do I telephone in a crisis' question), and partly so they can try to be forewarned and prepared in advance for crises.

This prior description of crisis management perhaps suggested a sequential approach, with the FSA first deliberating on its own what to do, then bringing in the Bank, and finally these two bodies approaching HMT with a joint proposal. Whilst there may be circumstances in which such a chain of events could occur, in the more usual cases of a crisis unfolding, the procedure is much more likely to be short-circuited. When news of a crisis may break, (and if the news arrived via some market event, rather than an application by a bank to the FSA, the Bank might get to hear of its first), the TSC would be immediately called. The FSA would present evidence, orally or on paper, on the condition of the bank(s) involved, the Bank would comment on the systemic implications of any proposed course of action to handle the crisis, and HMT would need to get the politicians' agreement to any course of action that might require the use (loss) of public funds.

Thus crisis management is now to be managed by a committee rather than by the Bank of England as the main central decision-maker. That contrast, between a single locus for decision-making and the new committee system, is, however, somewhat exaggerated in reality. The Bank of England's freedom of individual, sole manoeuvre has always been limited, both by its ability to absorb losses in the course of bank

rescues and by occasional limitations in information. In order to remedy both shortcomings the Bank historically looked to the commercial banks for help.

The Fringe, or Secondary, Banking Crisis, 1973-75, (see M. Reid, 1982) was a typical example. At that time the Bank undertook little direct supervision of the banking system, see Goodhart (2004), and knew less about these smaller, secondary banks than the large London Clearing Banks, who cleared those banks' payments and in which the secondary banks held correspondent balances. So the Bank asked the London Clearing Banks to distinguish between those of its correspondent secondary banks which were clearly insolvent and those which would become solvent (under normal market conditions). It then formed a `Lifeboat' to support those deemed likely to be solvent, with a sizeable proportion of the emergency loans coming from the secondary bank's clearing bank, plus negotiated shares in each case from the Bank and the other clearing banks. Another case is the first Barings crisis (1890 model), when, having persuaded itself and the main commercial banks that Barings was solvent and would survive, the vast majority of the guarantees that were provided to support Barings came from the other commercial banks.

Thus, historically, much crisis management was done by the Central Bank playing the role of lead manager, or facilitator, in a committee of commercial banks, whilst putting up little, or occasionally none, of the funds itself. Two similar examples in US history are LTCM, and 1907 when J.P. Morgan managed the use of support funds, which in this latter case mainly came from the US Treasury, (Wicker, 2000). But, in the case of the UK, and in other countries where foreign banks now play a large role, that approach, whereby the Central Bank seeks help from a committee of major

private banks, has become more problematical. Returning to the Johnson Matthey collapse (1984), the Bank turned to its usual stratagem of encouraging the commercial banks in London to `volunteer' to contribute to support the bank in trouble. But now the large, incoming US banks refused to play, citing legal problems in the USA if they were perceived as using shareholder funds for extraneous purposes. If the US banks would not contribute to the Bank's begging bowl, it was only amour propre for the other foreign banks to refuse too. Eventually the British clearing banks acceded to the Bank's requests, but only grudgingly and, it was clear, `for the last time'.

In any case the quantum of available support from the commercial banking sector was always limited; indeed the London Clearing Banks found themselves after a time unable, or unwilling, to contribute further to the `lifeboat' in 1974/75. When a really big crisis blew up, the Bank would always have to go to the government for help, either through emergency changes in the law, e.g. suspension of convertibility 1797, suspensions of the Bank of England (1844) Act in 1847, 1857 and (promised, but not needed) 1866 (Acres, 1931), or for direct financial support; August 1914 is perhaps the best example of this latter, (see Seabourne, 1986).

With `voluntary' support in crises from the private sector tending to dry up, partially as a consequence of globalisation, (and also of the rather narrow, aggressively competitive approach of some US banks), the Bank of England was forced into greater reliance on the Treasury and taxpayers for handling those crises deemed to be systemic. Be that as it may, the Bank of England did not historically have the power or the ability to resolve (large-scale) crises on its own. The concept of the Governor

single-handedly, and ex cathedra, resolving such desperate times on his own always needed to be qualified.

Even so, the Governor, and the Bank, was undoubtedly the leading player, with the responsibility for devising the overall campaign, even if the private sector banks and the government had important walk-on roles, and could accept or refuse their own roles, and sometimes veto the Bank's plan as a whole. Now the plan of defence is to be agreed by a committee, where each member has a potential veto over the use of emergency liquidity assistance, or LOLR.

Does that matter? As we have all been told, a camel is a horse designed by a committee. Often there is a need for speed in handling crises. What would happen, for example, if a crisis was to occur in the middle of a political crisis, or when a government had just been defeated in an Election, but before a new government had been installed? Could HMT always get a political response to a proposed rescue ploy; if there was no such response forthcoming, would HMT or the Bank feel able to go ahead nonetheless?

We do not know the answers to such questions in part because no such crisis event has, as far as I know, occurred since the TSC was established in 1997. The TSC may have met in the aftermath of 9/11, even though most of the international consequentials were handled elsewhere. Apart from that, there is no public report or evidence of the TSC having ever met in crisis mode from its inception up till now.

There is now a continuing trend to separate supervision from the remaining Central Banking functions and to allocate it to a distinct, specialised – Financial Services Authority – or, as in Australia, to several separate bodies; the foundation of the China Banking Regulatory Commission (CBRC) being the latest example. See on all this Goodhart (2000). So this account of events in the UK may have some wider relevance. Moreover, in many other countries the supervisory function has long been partly, or wholly, separated from the Central Bank function. In some cases, notably in North America, both in the US and Canada, an official institution charged with oversight of checking the conditions of the main banks was already in existence before their Central Bank was set up, the OCC in the USA and the Office of the Inspector General of Banks in Canada. Furthermore, in many European countries, such as Germany, France and the Scandinavian countries, the supervisory authority has been partly, or wholly, separated from the Central Bank.

In the USA there have been eloquent arguments that the Central Bank needs some `hands-on' supervisory experience of its own in order to help it deal with both its crisis-handling functions and even its macro-monetary management, see Greenspan (1997, 2000) and Peek , Rosengren and Tootell (1998, 1999 a and b)[2]. Such arguments would no doubt be echoed by those European Central Banks holding on to their supervisory functions (e.g. Italy, Spain), especially now that their macro-monetary functions have been swallowed up by the ECB. Nevertheless there is relatively little empirical evidence to suggest that there have been systematic differences in the efficiency, or success, of crisis management between countries, depending on whether banking supervision was wholly, partly or not at all separated

[2] The arguments in Peek, et al (1998) were, however, contradicted by Feldman, et al (2002).

from the Central Bank.[3] In any case crisis events are fortunately so rare that it is quite difficult to test any such hypothesis empirically. Certainly when such separation occurs, the institution that has to handle the resulting crisis may often criticise the functional regulator for not having spotted, or defused, the crisis earlier. (For example, in the case of the two largest recent losses sustained by the US deposit insurance funds – First National Bank of Keystone in September 1999 and Superior Bank, FSB in July 2001) – the FDIC felt that its ability to make its own assessments of the risks to the funds from large institutions had been impeded, at least initially, by the primary regulator[4].) That, however, tells both ways. If the supervisory function is held within the Central Bank, any bank failure is likely to cause collateral reputational damage to the Central Bank, as the Bank of England experienced not only with JMB and Barings but also the, seemingly never-ending, saga of BCCI.

One concern in this respect that I have had myself is that the ethos, and culture, of a specialised supervisory authority is likely to differ from that of a Central Bank, with the former tending to concentrate on legal and accounting professionals and issues, whereas the latter has greater economic expertise and focus, see Goodhart, Schoenmaker and Dasgupta, (2002). While such differences in culture almost certainly exist, the next question is whether they matter greatly. Our worry was that the legalistic ethos of a separate supervisory authority might make them concentrate attention on customer protection (asymmetric information) issues, and perhaps take their eye off the ball on macro-economic risk, concentrations of (contagious) risk and

[3] Using a large cross-country data set, based on a World Bank Survey, see Barth, et al (2001), Barth, et al (2001, 2002), have now made a start on such an exercise.

[4] As a result of such incidents, the circumstances under which the FDIC exercises its special examination authority granted under the 1950 Federal Deposit Insurance Act were clarified through an agreement with other domestic functional regulators in January 2002 and FDIC examiners are now based in eight large insured institutions representing over 40% of the industry's assets.

systemic issues. Even if that was partly the case, so long as the separate supervisor both obtained, and shared, the information sought, and needed, by the Central Bank, there should be no wider problem. What is necessary is for there to be sufficient co-ordination and information sharing between the separate supervisor and the Central Bank. While one does hear some suggestions and the occasional anecdote that information availability to the Central Bank deteriorates after separation, it is rare to find any attested, or published, examples of that. As noted earlier, there is no good evidence yet to show any systematic differences in the efficiency of crisis management within a country depending on the extent of such separation between the supervisory agency and the Central Bank.

One major difference between the USA and most other countries lies in the much greater role of the FDIC in crisis management in the US. By comparison the Deposit Protection Fund plays no public policy role whatsoever in the UK, largely acting as a Post Office mailing out cheques to depositors in failed banks and seeking any necessary funding top-ups from member banks, (plus probable ultimate government support if real disaster struck the banks. It is not in the rules, but I believe that this is what actually would happen, as occurred in Finland in 1992/93.) In any case depositor insurance in the UK and EU is capped, and involves some co-insurance, (i.e. pay-outs of less than 100%). When a bank fails in the UK, the FSA (or any creditor) would apply to the courts to appoint a receiver, if liquidation is certain, or an administrator if there is some hope of keeping the bank in operation, e.g. in an arranged merger/purchase by another bank. In contrast, when the licencing authority in the USA, the OCC for national banks, the State authorities for the State banks,

revokes the original bank charter, that bank is then put into the hands of the FDIC to handle the situation.

When a bank gets into trouble, the news is likely to spread, and it will lose liquidity in the inter-bank market. In so far as the bank has high-quality liquid assets, it can raise cash by selling them or using them as collateral against borrowing, e.g. repos. Whether, in the USA, it uses its high-quality collateral to borrow from the Fed at the Discount Window or from the money markets depends on the relative costs and reputational (and other non-price) costs and effects of so doing. But so long as Discount Window borrowing is fully collateralised by high quality assets, it is in some important respects not really last resort lending at all, since it is just a very close substitute to using those same assets for raising funds in private sector markets.

An interesting feature of the US system has been that true last resort, emergency liquidity assistance, to US banks in severe difficulties was provided, between 1982 and 1992, by the FDIC in the form of open bank assistance, (rather than by the Fed). During these years they provided 141 banks with $11,630,356,000, of which $6,200,062,000 was recovered, and $5,430,080,000 lost, see Table 1. This was a high loss rate. The sums provided, and the losses, were even larger in the case of the thrifts, the S&Ls and FSLIC, which effectively became bankrupt.

Recoveries and Losses by the Bank Insurance Fund on Disbursements for the Protection of Depositors, 1934 through 2003

Dollars in Thousands

	All Cases[1]					Deposit Payoff Cases[2]				
Year	Number of Banks	Disbursements	Recoveries	Estimated Additional Recoveries	Estimated Losses	Number of Banks	Disbursements	Recoveries	Estimated Additional Recoveries	Estimated Losses
Total	**2,224**	**111,307,051**	**72,294,084**	**512,972**	**38,499,995**	**608**	**16,142,756**	**11,227,291**	**162,109**	**4,753,356**
2003	**3**	**887,703**	**654,705**	**129,617**	**103,381**	**0**	**0**	**0**	**0**	**0**
2002	10	2,031,376	1,235,284	236,344	559,748	5	1,585,246	998,412	162,054	424,780
2001	3	48,676	40,165	2,721	5,790	0	0	0	0	0
2000	6	268,730	230,174	9,725	28,831	0	0	0	0	0
1999	7	1,244,453	416,848	118,926	708,679	0	0	0	0	0
1998	3	286,594	53,152	3,167	230,275	0	0	0	0	0
1997	1	25,546	20,520	0	5,026	0	0	0	0	0
1996	**5**	**169,386**	**130,729**	**0**	**38,657**	**0**	**0**	**0**	**0**	**0**
1995	**6**	**609,045**	**524,515**	**58**	**84,472**	**0**	**0**	**0**	**0**	**0**
1994	**13**	**1,224,769**	**1,045,686**	**32**	**179,051**	**0**	**0**	**0**	**0**	**0**
1993	**41**	**1,797,302**	**1,150,863**	**198**	**646,241**	**5**	**261,203**	**159,268**	**0**	**101,935**
1992	**122**	**14,172,884**	**10,502,090**	**1,711**	**3,669,083**	**25**	**1,890,869**	**1,398,731**	**0**	**492,138**
1991	**127**	**21,412,652**	**15,271,553**	**5,015**	**6,136,084**	**21**	**1,468,407**	**1,000,733**	**0**	**467,674**
1990	**169**	**10,816,599**	**8,040,376**	**1,975**	**2,774,248**	**20**	**2,182,580**	**1,648,969**	**0**	**533,611**
1989	207	11,445,829	5,244,819	3,428	6,197,582	32	2,116,556	1,262,140	0	854,416
1988	280	12,163,006	5,244,866	0	6,918,140	36	1,252,160	822,612	0	429,548
1987	203	5,037,871	3,015,160	55	2,022,656	51	2,103,792	1,400,945	55	702,792
1986	145	4,790,969	3,015,252	0	1,775,717	40	1,155,981	739,659	0	416,322
1985	120	2,920,687	1,913,452	0	1,007,235	29	523,789	411,175	0	112,614
1984	80	7,696,215	6,056,061	0	1,640,154	16	791,838	699,483	0	92,355
1983	48	3,807,082	2,400,044	0	1,407,038	9	148,423	122,484	0	25,939
1982	**42**	**2,275,150**	**1,106,579**	**0**	**1,168,571**	**7**	**277,240**	**206,247**	**0**	**70,993**
1981	**10**	**888,999**	**107,221**	**0**	**781,778**	**2**	**35,736**	**34,598**	**0**	**1,138**
1980	**11**	**152,355**	**121,675**	**0**	**30,680**	**3**	**13,732**	**11,427**	**0**	**2,305**
1979	**10**	**90,489**	**74,372**	**0**	**16,117**	**3**	**9,936**	**9,003**	**0**	**933**
1978	**7**	**548,568**	**512,927**	**0**	**35,641**	**1**	**817**	**613**	**0**	**204**
1977	**6**	**26,650**	**20,654**	**0**	**5,996**	**0**	**0**	**0**	**0**	**0**
1976	**17**	**599,397**	**561,532**	**0**	**37,865**	**3**	**11,416**	**9,660**	**0**	**1,756**
1975	13	332,046	292,431	0	39,615	3	25,918	25,849	0	69
1974	5	2,403,277	2,259,633	0	143,644	0	0	0	0	0
1973	6	435,238	368,852	0	66,386	3	16,771	16,771	0	0
1972	2	16,189	14,501	0	1,688	1	16,189	14,501	0	1,688
1971	7	171,646	171,430	0	216	5	53,767	53,574	0	193
1970	7	51,566	51,294	0	272	4	29,265	28,993	0	272
1969	9	42,072	41,910	0	162	4	7,596	7,513	0	83
1968	3	6,476	6,464	0	12	0	0	0	0	0
1967	4	8,097	7,087	0	1,010	4	8,097	7,087	0	1,010
1966	7	10,020	9,541	0	479	1	735	735	0	0
1965	5	11,479	10,816	0	663	3	10,908	10,391	0	517
1964	7	13,712	12,171	0	1,541	7	13,712	12,171	0	1,541
1963	2	19,172	18,886	0	286	2	19,172	18,886	0	286
1962	0	0	0	0	0	0	0	0	0	0
1961	5	6,201	4,700	0	1,501	5	6,201	4,700	0	1,501
1960	1	4,765	4,765	0	0	1	4,765	4,765	0	0
1959	3	1,835	1,738	0	97	3	1,835	1,738	0	97
1958	4	3,051	3,023	0	28	3	2,796	2,768	0	28
1957	1	1,031	1,031	0	0	1	1,031	1,031	0	0
1956	2	3,499	3,286	0	213	1	2,795	2,582	0	213
1955	5	7,315	7,085	0	230	4	4,438	4,208	0	230
1954	**2**	**1,029**	**771**	**0**	**258**	**0**	**0**	**0**	**0**	**0**
1953	**2**	**5,359**	**5,359**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
1952	**3**	**1,525**	**733**	**0**	**792**	**0**	**0**	**0**	**0**	**0**
1951	**2**	**1,986**	**1,986**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
1950	**4**	**4,404**	**3,019**	**0**	**1,385**	**0**	**0**	**0**	**0**	**0**
1949	**4**	**2,685**	**2,316**	**0**	**369**	**0**	**0**	**0**	**0**	**0**
1948	**3**	**3,150**	**2,509**	**0**	**641**	**0**	**0**	**0**	**0**	**0**
1947	5	2,038	1,979	0	59	0	0	0	0	0
1946	1	274	274	0	0	0	0	0	0	0
1945	1	1,845	1,845	0	0	0	0	0	0	0
1944	2	1,532	1,492	0	40	1	404	364	0	40
1943	5	7,230	7,107	0	123	4	5,500	5,377	0	123
1942	20	11,684	10,996	0	688	6	1,612	1,320	0	292
1941	15	25,061	24,470	0	591	8	12,278	12,065	0	213
1940	**43**	**87,899**	**84,103**	**0**	**3,796**	**19**	**4,895**	**4,313**	**0**	**582**
1939	**60**	**81,828**	**74,676**	**0**	**7,152**	**32**	**26,196**	**20,399**	**0**	**5,797**
1938	**74**	**34,394**	**31,969**	**0**	**2,425**	**50**	**9,092**	**7,908**	**0**	**1,184**

Recoveries and Losses by the Bank Insurance Fund on Disbursements for the Protection of Depositors, 1934 through 2003 (continued)

Dollars in Thousands

	Deposit Assumption Cases					Assistance Transactions[1]				
Year	Number of Banks	Disbursements	Recoveries	Estimated Additional Recoveries	Estimated Losses	Number of Banks	Disbursements	Recoveries	Estimated Additional Recoveries	Estimated Losses
Total	**1,475**	**83,533,939**	**54,866,918**	**350,863**	**28,316,158**	**141**	**11,630,356**	**6,199,875**	**0**	**5,430,481**
2003	**3**	**887,703**	**654,705**	**129,617**	**103,381**	**0**	**0**	**0**	**0**	**0**
2002	5	446,130	236,872	74,290	134,968	0	0	0	0	0
2001	3	48,676	40,165	2,721	5,790	0	0	0	0	0
2000	6	268,730	230,174	9,725	28,831	0	0	0	0	0
1999	7	1,244,453	416,848	118,926	708,679	0	0	0	0	0
1998	3	286,594	53,152	3,167	230,275	0	0	0	0	0
1997	1	25,546	20,520	0	5,026	0	0	0	0	0
1996	**5**	**169,386**	**130,729**	**0**	**38,657**	**0**	**0**	**0**	**0**	**0**
1995	**6**	**609,045**	**524,515**	**58**	**84,472**	**0**	**0**	**0**	**0**	**0**
1994	**13**	**1,224,769**	**1,045,686**	**32**	**179,051**	**0**	**0**	**0**	**0**	**0**
1993	**36**	**1,536,099**	**991,595**	**198**	**544,306**	**0**	**0**	**0**	**0**	**0**
1992	**95**	**12,280,529**	**9,102,123**	**1,711**	**3,176,695**	**2**	**1,486**	**1,236**	**0**	**250**
1991	**103**	**19,938,128**	**14,267,727**	**5,015**	**5,665,386**	**3**	**6,117**	**3,093**	**0**	**3,024**
1990	**148**	**8,629,084**	**6,388,810**	**1,975**	**2,238,299**	**1**	**4,935**	**2,597**	**0**	**2,338**
1989	174	9,326,725	3,982,427	3,428	5,340,870	1	2,548	252	0	2,296
1988	164	9,180,495	4,232,545	0	4,947,950	80	1,730,351	189,709	0	1,540,642
1987	133	2,773,202	1,613,502	0	1,159,700	19	160,877	713	0	160,164
1986	98	3,476,140	2,209,924	0	1,266,216	7	158,848	65,669	0	93,179
1985	87	1,631,166	1,095,601	0	535,565	4	765,732	406,676	0	359,056
1984	62	1,373,198	941,674	0	431,524	2	5,531,179	4,414,904	0	1,116,275
1983	35	2,893,969	1,850,553	0	1,043,416	4	764,690	427,007	0	337,683
1982	**25**	**268,372**	**213,578**	**0**	**54,794**	**10**	**1,729,538**	**686,754**	**0**	**1,042,784**
1981	**5**	**79,208**	**71,358**	**0**	**7,850**	**3**	**774,055**	**1,265**	**0**	**772,790**
1980	**7**	**138,623**	**110,248**	**0**	**28,375**	**1**	**0**	**0**	**0**	**0**
1979	**7**	**80,553**	**65,369**	**0**	**15,184**	**0**	**0**	**0**	**0**	**0**
1978	**6**	**547,751**	**512,314**	**0**	**35,437**	**0**	**0**	**0**	**0**	**0**
1977	**6**	**26,650**	**20,654**	**0**	**5,996**	**0**	**0**	**0**	**0**	**0**
1976	**13**	**587,981**	**551,872**	**0**	**36,109**	**1**	**0**	**0**	**0**	**0**
1975	10	306,128	266,582	0	39,546	0	0	0	0	0
1974	4	2,403,277	2,259,633	0	143,644	1	0	0	0	0
1973	3	418,467	352,081	0	66,386	0	0	0	0	0
1972	0	0	0	0	0	1	0	0	0	0
1971	1	117,879	117,856	0	23	1	0	0	0	0
1970	3	22,301	22,301	0	0	0	0	0	0	0
1969	5	34,476	34,397	0	79	0	0	0	0	0
1968	3	6,476	6,464	0	12	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0
1966	6	9,285	8,806	0	479	0	0	0	0	0
1965	2	571	425	0	146	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	0
1958	1	255	255	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0
1956	1	704	704	0	0	0	0	0	0	0
1955	1	2,877	2,877	0	0	0	0	0	0	0
1954	**2**	**1,029**	**771**	**0**	**258**	**0**	**0**	**0**	**0**	**0**
1953	**2**	**5,359**	**5,359**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
1952	**3**	**1,525**	**733**	**0**	**792**	**0**	**0**	**0**	**0**	**0**
1951	**2**	**1,986**	**1,986**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
1950	**4**	**4,404**	**3,019**	**0**	**1,385**	**0**	**0**	**0**	**0**	**0**
1949	**4**	**2,685**	**2,316**	**0**	**369**	**0**	**0**	**0**	**0**	**0**
1948	**3**	**3,150**	**2,509**	**0**	**641**	**0**	**0**	**0**	**0**	**0**
1947	5	2,038	1,979	0	59	0	0	0	0	0
1946	1	274	274	0	0	0	0	0	0	0
1945	1	1,845	1,845	0	0	0	0	0	0	0
1944	1	1,128	1,128	0	0	0	0	0	0	0
1943	1	1,730	1,730	0	0	0	0	0	0	0
1942	14	10,072	9,676	0	396	0	0	0	0	0
1941	7	12,783	12,405	0	378	0	0	0	0	0
1940	**24**	**83,004**	**79,790**	**0**	**3,214**	**0**	**0**	**0**	**0**	**0**
1939	**28**	**55,632**	**54,277**	**0**	**1,355**	**0**	**0**	**0**	**0**	**0**
1938	**24**	**25,302**	**24,061**	**0**	**1,241**	**0**	**0**	**0**	**0**	**0**
1937	**25**	**7,839**	**6,814**	**0**	**1,025**	**0**	**0**	**0**	**0**	**0**
1936	**27**	**7,471**	**6,476**	**0**	**995**	**0**	**0**	**0**	**0**	**0**
1935	**1**	**3,082**	**2,149**	**0**	**933**	**0**	**0**	**0**	**0**	**0**
1934	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Totals do not include dollar amounts for the five open bank assistance transactions between 1971 and 1980. Excludes eight transactions prior to 1962 that required no disbursements. Also, disbursements, recoveries, and estimated additional recoveries do not include working capital advances to and repayments by receiverships.

[1] Includes insured deposit transfer cases

Note: Beginning with the 1997 Annual Report the number of banks in the Assistance Transactions column for 1988 was changed from 21 to 80 and the number of banks in the All Cases column was changed from 221 to 280 to reflect that one assistance transaction encompassed 60 institutions. Also, certain 1982, 1983, 1989 and 1992 resolutions previously reported in either the Deposit Payoff or Deposit Assumption categories were reclassified.

There were doubts whether the expenditure of such funds, which were ultimately backed by the taxpayer, to save failing banks was efficient or worthwhile. Risks of contagion were often exaggerated, (Kaufman, 1987, 1994, 1995 a and b, 1996, 2000 a and b, Kaufman and Scott, 2003), and the regulators, including the FDIC, might be under pressure to keep banks open when this was not necessarily the most (least) cost efficient process. It was in this context that the FDIC Improvement Act (FDICIA) was passed in 1991.

Since that date Purchase and Deposit Assumption has been much the most preferred resolution technique. The Act's main provision affecting the resolution process[5] included the `least cost' test.

Under this test, any resolution must be less costly than a liquidation. Prior to FDICIA, the FDIC could use any technique less clostly than a deposit payoff, but not necessarily the cheapest of these alternatives. The earlier "essential" criterion had been often invoked when dealing with a failing institution whose services were considered essential to the community. The provision is intended to prevent the FDIC from providing support for non-insured deposits and other creditors. It tends to discourage whole bank solutions where, as an alternative, the FDIC sees the possibility of maximising the premium paid for deposit franchises by parcelling out the bank to different acquirers. In determining least cost, the FDIC is required to evaluate alternative structures on the NPV basis using a realistic discount rate.

[5] The Act also included provisions introducing risk-based deposit insurance premia, measures to increase the FDIC's borrowing authority for the Bank Insurance Fund (BIF) from $5 billion to $30 billion, stronger enforcement powers in dealing with banks, and restrictions on the bidding for brokered deposits by banks in difficulty.

Post-FDICIA, the only exception permitted to a least cost solution is where a finding has been made that the problem is "systemic", i.e. where the application of the FDIC's least cost mandate would lead to "serious adverse effects on economic conditions or financial stability". Such a finding requires the support of a two-thirds majority of both the FDIC and the Federal Reserve boards and the consent of the US Treasury Secretary after he/she has consulted the US President. Note that the OCC, despite often being the functional regulator, has no formal role in this exercise. Nevertheless, the OCC is an arm of the US Treasury, and the Comptroller would presumably have a chance and the ability to submit his/her own comments and Report to the Secretary of the Treasury.

Note the similarities between the procedures established in the UK and in the USA. In both cases the supervisors, the Central Bank, and the politicians at the Treasury, all have to agree together that a rescue is needed for systemic reasons; all three parties have an effective negative veto, (though probably the Central Bank and the politicians could in effect over-rule the FSA/FDIC if push really came to shove; but the likelihood of the politicians/Central Banks wanting a rescue against the best advice of the FSA/FDIC seems remote). Again in both cases no call for any systemic rescue has yet been made, since FDICIA in 1991 or the establishment of the TSC in 1997. There is, therefore, no experience of how the process might work, or not, in a crisis. Once a situation had been agreed to be systemic, it would, presumably, be for the Central Bank in each case to take the lead in managing the crisis, but even that might depend on the personalities, experience and self-confidence of the various officials involved.

Be that as it may, the growing trend towards separation between banking supervisory agencies and Central Banks means that some (formal) mechanisms for having them co-ordinate crisis management will be required. Similarly the experience of the severe fiscal burden of repairing a banking collapse, (for a reckoning of such costs, see, amongst others, Bordo, et al, 2001, Caprio and Klingebiel, 1996 and 1998, Hoggarth et al, 2001, and Lindgren et al, 1996), will mean that the Ministry of Finance/Treasury and the relevant Minister(s) will also want and need to be consulted about the conduct of crisis management. So, some kind of tripartite mechanism, involving the supervisor(s), the Central Bank and the MoF/HMT, plus politicians, seems likely to emerge, whether on a formal, or an informal, basis. Nevertheless such committee-type mechanisms remain generally untested. Economic conditions have remained comparatively stable and benign over the last decade, and, while there have been, and indeed remain, threats to financial stability, these have not, so far, generally crystallized into systemic banking crises in Western Europe and USA.

Japan has had a less happy experience. In their case the FSA, BoJ, MoF and the politicians have all been involved in trying to handle their banking problems, but the mechanisms for co-ordination and co-operation have seemed somewhat ad hoc, and less than ideal either in formulation or operation. Relationships between bureaucratics sometimes appear, to an outsider, to be less than fully co-operative. There is, I believe, a very high level committee of the BOJ, JFSA and the Prime Minister's office[6], but little regular contact between the BoJ and JFSA at working

[6] The Financial System Management Council, called into action whenever the Prime Minister envisages a serious threat to financial stability. It did meet to consider how to handle the Resona Bank crisis in May 2003 and the Ashikaga Bank nationalisation in December, 2003.

level. Indeed anecdotal reports suggest that requests for information, etc, have to go formally through the top of each institution.

If an appropriate committee structure is set up in advance, there seems no fundamental reason why crisis management within each country should not be effectively managed. We shall see.

Of course, it is best if banks in trouble can be reorganised, and new management established, before losses are suffered and economic capital exhausted, see Mayes and Liuksila (2001). One problem, however, with requiring early closure, for this purpose, is that the managers and private share-holders have legal right to continue so long as they have not infringed any law. An enforced early closure/reorganisation/removal of managers imposed by the authorities is likely to be met by a law suit against them, eg against the Central Bank, unless a 'smoking gun' evidence of illegal practice, eg continuing to run an insolvent business, can be clearly proven in court. Indeed the window of opportunity between closing a bank so early that the owners may sue and so late that the depositors may sue may have become vanishingly small. What is then needed is a legal mandate to initiate early closure before a bank has exhausted its capital.

As Krimminger (2004) puts it, "The laws must have clear criteria for initiating insolvency proceedings. This is particularly crucial in banking insolvencies where otherwise insolvent banks may be able to continue indefinitely by raising funds from depositors and act as a drag or diversion of economic capital. Clear, mandatory criteria permit prompt and decisive action before the bank's equity is exhausted. The

criteria should be mandatory to require supervisory action as capital or other indicia of institutional soundness erode. In effect, mandatory action requirements create the supervisory discipline that augments market discipline". So the application of Prompt Corrective Action in countries outside the USA would require such countries, in most cases, to introduce new legislation modelled on the US FDICIA. This is not currently under consideration, at least not in the UK.

2. Crises with International Complications involving Regulators in Several Countries

A crisis will often, perhaps usually, involve financial losses, often severe. Even within a single country working out a decision how these might be allocated between shareholders, other creditors (often other banks), depositors, taxpayers, and other private sector (financial) bodies is politically and presentationally difficult. In the Japanese case there was some unwillingness to grasp this nettle, which added to delay and, probably, to overall cost.

The problem is, of course, far worse when the problem involves burden sharing between countries, where these countries will not only have quite different objectives (i.e. minimise their own loss), but also differences in legal arrangements.

Moreover the problems of introducing Prompt Corrective Action, ie of reorganising a bank and changing the management, before the bank is clearly bankrupt, will tend to become much worse when dealing with an international group with cross-border subsidiaries. The problems of the bank may be localised, but the reorganisation would presumably affect the bank as a whole. Moreover the head office and

subsidiaries will be regulated under differing national legal systems.[7] What is legal in

One jurisdiction may not be so in another . David Mayes (2004), especially Section 2.1 on 'Cross-border complications', sets out the difficulties nicely. These have also been discussed at some length in the preceding Session of this Conference.

As Krimminger (2004) points out, "a significant complicating factor is that the national legal rules and policy choices that govern the resolution of international financial institutions may conflict and, at a minimum, may preclude effective action at the time of insolvency. There are several interrelated issues. First, there is no international insolvency standard for banks or other financial institutions. While it may be appropriate that different nations – with different economic and cultural histories – have adopted varying laws and policy choices to govern domestic financial insolvencies, it is essential that the basic legal mechanisms applicable to international linkages permit effective action to mitigate contagion effects around the globe. Second, current laws around the globe do not adequately address the complexities created by international holding company structures. These complex structures certainly create difficulties in regulatory coordination under normal conditions. During a period of financial instability, the differing regulatory jurisdictions within a

[7] The problem has been addressed within the EU by its insolvency regulations representing new, statutory efforts to create a common "universal" approach to cross-border insolvencies within a unifying political entity. The resolution of failed banks is addressed by EC Directive 2001/24/EC of April 4, 2001 on the reorganisation and winding up of credit institutions. In short, the EU's Insolvency Regulation seeks to establish an EU-wide insolvency process providing for non-discrimination and equal treatment of creditors, recognition of other EU insolvency proceedings, and cooperation between insolvency authorities as an overlay on national insolvency law.

"For insolvencies among EU members, the Insolvency Regulation embodies the universal approach by treating the entire bank and its branches as a single entity subject to resolution under the law of the

nation and between nations create even more difficult challenges in pre-failure coordination. International supervisors are taking steps to improve understanding and coordination before insolvency. However, if insolvency occurs, the different legal rules and policies that apply to banking, insurance, and securities components of a holding company structure could impair the ability to respond effectively to prevent cross-border crises. Current insolvency laws may not provide the level of flexibility available to regulators once the actual insolvency occurs. Third, in a world of 24/7 financial operations and markets, the many legal rules that are based on the pace of the 19th or even 20th century may not be up to the task. It is essential that insolvency rules give decision-makers the flexibility and authority to take action in "real time" to avoid compounding the effect of a single large insolvency through the linkages between markets and payments systems."

The nature of the problems will differ somewhat depending on whether the entity of the foreign-owned bank in the host country is a branch of the main bank, or a separately capitalised subsidiary. In the case of the branch this is an integral component of the main bank, in principle like any other (domestic) branch, so that asset and liability management, and official supervision for capital adequacy, large exposures, connected lending, concentration of lending, etc., etc., will be undertaken in a consolidated fashion respectively by the home bank and by the home bank's supervisor.

Two areas of concern, at least, nevertheless remain in the case of the treatment of host country branches. The first relates to deposit insurance. There is sometimes a

'home Member state'. Even within the EU there remains the possibility for conflict because countries

question of which deposits will be insured, and to what extent, by the host country in foreign bank branches, and what assets may be available to the host country, in case of closure of the main bank, to meet such insurance claims. Taking this latter question first, if the home country deals with a bankruptcy/liquidation on a single entity basis, so that all depositors are paid on a pari passu basis wherever located, then there is no problem, but if the home country runs a `ring-fencing' system as does USA and Australia, then a host country may find itself suffering what will seem an undue insurance pay-out. One solution may be to require any large-sized branch to become a subsidiary, so that the host country can more easily require the subsidiary to maintain a sufficient ratio of local assets to local deposits. Again if the host country deposit insurance is less generous than the home country's arrangements, there may be some unhappiness among local depositors in the case of a failure. A depositor with a US bank office in London, or elsewhere in the EU, would rank behind all depositors, (whatever their nationality or domicile), who had placed such deposits in branches located in the USA for recovering funds with the help of the FDIC, and could only rely on the much more limited, (capped and co-insured) UK deposit insurance fund. Given the absence of a collapse of any large international retail bank, at least since BCCI in 1991, (which was, fortunately, atypical in many respects), there is probably little customer appreciation of the differences between, and limits on, deposit insurance protection in differing circumstances, e.g. in home as compared with foreign branches of the same bank, and , in some cases, with respect to the currency denomination of the deposit.

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can, and have, exercised the option to opt out of the Insolvency Regulation", Krimminger 2004.

The second issue concerns liquidity. In order to remain in business, a bank has to honour the convertibility requirement, i.e. to be able and prepared to pay out cash on demand to those with demand deposits or time deposits becoming due, (though sometimes a bank can reasonably blame practical transportation problems for a short-term failure to meet this obligation). Within a single banking enterprise, liquidity management will generally be centralised, and access to cash distributed around the country by Head Office. One problem with a branch of a foreign bank is that it will often be open when its head-quarters, and its home Central Bank, is shut either because of time zone differences or because of different national holidays. If the branch should run into liquidity problems in such cases, it may be difficult, perhaps impossible, to contact the relevant officials either at the head-quarters of the bank concerned, or at the home Central Bank, and, if and when contacted, such officials may not be able to do much to rectify the situation, at a time when all markets are shut in the home country. However, in several cases in the past, whenever a real potential crisis did blow up, the relevant home Central Bank officials were roused, and were generally able to respond satisfactorily.

Perhaps a more worrying case is when a banking entity in the UK may not have assured access to full liquidity support from its home Central Bank. This may be because the institution with a bank branch in the UK does not come under the umbrella of its home Central Bank. The US investment houses with the banking activities in London may come into this category. So the host Central Bank may be put in the difficult position of either lending to the foreign branch, possibly in foreign currency, possibly against limited, or low quality collateral, or of requiring the (temporary) closure of the branch with all the reputational (and legal?) implications

that that might bring with it. Under such circumstances a host country's Central Bank would feel considerably more comfortable if every foreign branch maintained dedicated liquid assets sufficient to meet two days abnormal withdrawals; the two days requirement allows for one day of holiday in the home country and one day for the time zone difference. At present there is no international agreement on the maintenance of liquidity in foreign bank branches, though it is recognised that host countries do have the right to impose liquidity requirements on foreign bank branches. This subject may be reviewed in international fora in due course.

In some respects the host country prudential authorities will feel more in control when the foreign bank establishes a subsidiary, rather than just a branch. A subsidiary becomes a legally separate entity with its own capital, and subject to the supervision and full regulatory requirements of the host country. A problem, however, is that the formal legal distinctions and separation are not matched by a similar economic separation. For example the home, headquarters, bank may put pressure on the subsidiary bank to take an action, such as a transfer of assets, which will be to the home, main bank's benefit, but may be detrimental to the conditions of the host subsidiary, and potentially to the welfare of the host authorities and taxpayers, whereas the reverse is unlikely ever to occur.

Let us assume two countries, A and B, where a bank headquartered in A has a subsidiary in B. Assume that the B subsidiary is profitable, but that the headquarters in A, perhaps at the behest of the authorities there, transfers much of the subsidiaries' profits and assets to prop up the main bank. Moreover, the bankruptcy laws in A might ring-fence assets in A so that A depositors were paid off before B depositors

got a look-in. Whether on purpose, or not, in a globalised financial system losses occurring in a bank in one country could be effectively passed through to the depositors or to the fiscal authorities in another country.

The worst problems, however, are likely to occur over problems connected with burden sharing in the event of any attempted rescue and recapitalisation.

Assume that a crisis arises in a bank with subsidiaries in two countries, and headquartered in a third, because loans made in one of the two subsidiaries go bad. Let me take a numerical example, with headquarters in country A and subsidiaries in B and C. Loans made by C become non-performing, so that the supposed local assets and deposits are:-

	A	B	C	Sum
Assets	120	110	40	270
Deposit Liabilities	100	100	100	300

Although in the bank as a whole liabilities exceed assets, the deficiency is, in this example, concentrated in subsidiary C. So, the first question is whether the parent bank can just walk away from this subsidiary and leave the host country, and its deposit insurance fund (if any), to pick up the bits. The ability of the parent to distance itself from problems in the subsidiary may depend on circumstances. For example, were losses in the subsidiary caused by local factors, e.g. government interference (as in Argentina), over which the parent bank could have had no control, or was the loss caused by managerial failures which the parent bank should have prevented, e.g. Barings in Singapore, Allied Irish Bank in the USA? Again, it is easier for a parent to walk away from a subsidiary in dire straits if the name of the

subsidiary is distinct from that of the parent. Particularly if the name is the same, and if the key operational decisions have been taken at parental head-quarters, reputational effects make it hard for a parent bank just to cast a subsidiary adrift.

Assuming that the supervisors in A choose to liquidate the head-quarter bank, can the B supervisors keep the subsidiary going in business as a separate stand-alone bank? The experience of BCCI (Hong Kong) suggests that the indirect reputational effect, combined with lack of public information available at the time, would be too great. Assume that country A has a pari-passu bankruptcy law, so that if all assets and liabilities were put into a single pot and spread out equally, then each depositor would get paid 90 cents in the dollar, would not there be an enormous temptation on the politicians and supervisors in B to undertake some de facto ring-fencing of their own, by repaying local depositors in full from local assets, and then returning just ten assets to the head-office liquidator, so that depositors in A and C would get 85 cents in the dollar, not 90. Assume next that A has a ring-fencing bankruptcy procedure. A and B depositors get paid in full, whereas C depositors would get just 70 cents in the dollar. The lesson for host countries is to be especially careful and conservative whenever the home country ring-fences.

The problems are likely to be even more difficult when there is a wish, by A country supervisors, to recapitalise the bank, and keep it as a going concern. There is no difficulty if A is prepared to face the fiscal burden all on its own, but A country politicians and tax-payers will surely demur. After all the failings arose in country C. Should not those who allowed that to happen, i.e. the authorities in C, share in the costs of recapitalisation? Moreover the benefits of banking intermediation are shared

amongst the depositors, and local borrowers, in this case roughly equally, in A, B and C. Why should not the cost of recapitalisation also be shared out equally amongst the three countries? I rather doubt, however, whether the politicians and taxpayers of B would see the argument quite that way.

So recapitalisation of a failing international bank with multiple subsidiaries would likely involve a politicised negotiating game with the whole panoply of potential threats, outside options and so on, as employed in game theory. There would, in the case pictured here, probably be multiple possible equilibria.

Even when the various issues involved in recapitalisation are confined within a single country, as in Japan in the last decade, the question of resolving the distribution of burden between various potential classes, for example bank shareholders, bank creditors and debtors and tax-payers, was so difficult and politically charged that decisive measures to contain the crisis and to return the banking system to health were unduly delayed. The complications of resolving an international distribution of burdens would be even worse.

I have wondered, for example in my Per Jacobsson lecture, on 'Some New Directions for Financial Stability' earlier this summer, whether there might be a role for an impartial international arbiter, to expedite the negotiations. That arbiter could be the ECB in the European case, or the IMF, World Bank or BIS more widely. My more practically experienced friends, however, have been sceptical. A country which does not like the arbiter's ruling may reject it, and would put forward plenty of reasons for so doing. Moreover all the countries involved would have to agree, ex ante, to accept

the arbiter's ruling. Would such agreement be forthcoming? Nevertheless the possibility of some possible court of arbitration in such cases has some merit.

But negotiations, especially international negotiations, and arbitration take time, often a very long time. If a bank, or worse a banking system, has been seriously weakened by bad debts, time is of the essence. Can we afford to run a banking system which is so interpenetrated that the resolution of any banking crisis involves inter-national negotiations?

Such inter-country problems are, however, likely to become more frequent in the future than they have been in the past. Major financial crises have occurred most frequently in retail banking and thrift intermediaries, and these have been kept primarily national in ownership.

It would become much more difficult to maintain bank supervision, and crisis management at the national level were commercial banking systems to become much more fully integrated amongst countries, especially, but not only, in the EU. This latter integrationist outcome is what has been, in principle, the objective of the Lisbon process and of other EC initiatives. Be that as it may, the (major) nation states within the EU have continued to drag their heels in allowing for international competition in their partly-protected domestic retail markets, including equity markets as well as retail banking. The recent bid by Banco Santander Central Hispano for Abbey National in the UK may be interpreted either as the exception that proves the rule, or the first path-breaking step towards cross-border retail banking in the major EU countries.

There is a contrast in this respect between the bigger nations in the EU and the smaller countries. In the smaller countries there has been less disposition, perhaps because of less power, to maintain the purely national characteristics of domestic banking. In the Scandinavian countries the largest banking conglomerate, Nordea, now covers all the four countries, despite these countries' differing positions within the EU and Eurozone. This inter-penetration was in some part accelerated by their financial crisis in the early 1990s. Again the Benelux countries have seen increasing bank interpenetration with Fortis and Dexia bank becoming international, rather than national. And recently there has been a take-over of a locally large Austrian domestic bank (Bank Austria) by a German bank (HVB).

The penetration and involvement of foreign banks is most marked in East European countries, both those now in the EU and some prospective candidate countries. So, in most East European countries, a large proportion, often a majority, of bank deposits and bank assets are placed with foreign-owned banks, in almost all cases, as already noted, in subsidiaries of such banks, not in branches. So there is a major division within the EU between the large countries with a primarily nationally-owned retail banking system and the smaller countries with a large proportion of foreign-owned banks in their banking system.

It is to be expected that the large countries will establish the structures and procedures within the EU that best suit themselves. With their banking systems remaining mostly domestically head-quartered, (and political pressures for supporting national champions), and with any fiscal burdens from crisis management falling on national

Treasuries, the big countries will persist in insisting on the maintenance of nationally-controlled bank supervision, and on control over Lender of Last Resort Lending and crisis management. This was the gist of the letter on this subject issued by Chancellor Brown of the UK and the Finance Minister Eichel of Germany on the occasion of the Oviedo Ecofin meeting in April 2002. Such national control over supervision and crisis management suits the big countries in the EU. Despite the desire of some at the ECB for greater centralisation, absent banking inter-penetration in the big countries and any federal fiscal competence, the wishes of the large nation states will prevail here.

Nevertheless the intended progress of structural change, especially, but not only, in the EU points towards greater cross-country integration of retail banks and other financial intermediaries. Moreover, certain groups of smaller countries in the EU, in Eastern Europe, Scandinavia and, perhaps, Benelux, have already got to this juncture. Within the EU the problem could, in principle, be resolved by centralising supervision and crisis management. But that runs up against the constitutional problem that crisis management is often extremely expensive, and there is no central, federal fiscal competence to handle it in the EU. If the burden has to be met by national Treasuries, then supervision and crisis management will remain at the national level with all the problems that that entails. This is but another facet of the more general problem for the EU arising from the disjunction of having a federal monetary system but a national fiscal system. However the EU handles this problem, there is going to be no good, nor easy way to handle burden-sharing between other sovereign states. This is a problem waiting to become yet more serious over time.

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