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"Too big to save" -– towards a functional approach to resolving crises in global financial institutions

Eva H. G. Hüpkes[*]

***Abstract**: This article considers the challenges for policy makers posed by the distress that can afflict large and complex financial institutions (LCFI) with a global reach. It explores the impediments to solutions that require close cooperation among national regulators and argues in favor of a pragmatic approach to permit the orderly wind down of LCFI while at the same time preserving the functions that are critical for the operation of the financial system. This approach consists of two components: First, the identification of functions of an LCFI that are systemically relevant for individual jurisdictions. Second, the implementation of measures to ensure that systemically relevant functions can be insulated from the problem imperiling the viability of an LCFI. If such an approach is taken, it has far-reaching implications. First, it implies that no institution is too large to fail. As long as there are effective means to dismember and preserve the systemically important functions, the corpus of the LCFI can be left to flounder. As a result moral hazard is reduced. Secondly, it establishes an agenda for the design of regulation of LCFIs. Regulation in all relevant jurisdictions needs to ensure that systemically important functions of an LCFI can be preserved even when the institution is no longer viable. Thirdly, it exposes a fundamental challenge for international cooperation: finding a common and compatible metric for systemic functions and implementing measures in an incentive compatible manner to preserve them.*

I. Challenges of resolving an LCFI

In recent years, the ongoing process of consolidation has led to the emergence of a small number of large and complex globally active financial groups that transcend national boundaries and traditionally defined business lines[1]. Consolidation and conglomeration have been spurred by increased competition in the financial industry arising from technological advances, the development of new financial instruments and risk transfer techniques, economies of scale in terms of product offerings and services, and the removal of longstanding barriers to cross-functional and cross-border mergers and acquisitions.[2] Growing internationalization in the financial sector has been augmenting the challenges of consolidation and conglomeration.[3] As a result of these developments, financial systems in many developing and emerging economies are now being dominated by foreign banks.

Global integration and greater efficiency do not necessarily guarantee greater stability. Larger financial institutions have a greater capacity to withstand stress. Their operations are more diversified; they tend to have more sophisticated risk management capabilities and they have bigger capital cushions. Yet, there is the risk that they will serve as a conduit to transfer shocks from one corner of the world to another as even large financial institution may encounter financial distress due to unforeseeable economic shocks, mismanagement, or fraud.

The "creative destruction" caused by the periodic failure of individual financial institutions is an inherent part of an evolving and dynamic market-based financial system. Nonetheless the failure of a large and complex financial institution (LCFI)[4] that is involved in a wide range of financial activities in a large number of different regions can cause widespread damage. The workout or winding down poses a number of challenges:

- **A misalignment of the incentives of different national regulators precludes global solutions.** Various authorities, either cross sector or cross border, are involved in the supervision of an LCFI. In the case of a crisis of an LCFI, each of the various authorities will be obliged to act in accordance with its own statutory obligations. Regulators are accountable to national legislatures for achieving solutions that are optimal on a national level. The obligation to protect local markets and local creditors' interests will take precedence over a more global perspective encompassing markets and creditors in other countries. This is the underlying rationale for measures such as ring fencing and capital maintenance requirements that host regulators may impose on foreign bank branches in order to secure local creditors' claims in the event of the failure of the head office.[5]
- **Informational asymmetries and regulatory competition hinder information sharing among authorities.** Effective crisis management requires access to timely, accurate and relevant information about the LCFI and its operations and markets. The usefulness of the information depends on how quickly it can be obtained and how up-to-date it is. If information can help to achieve a solution that is more advantageous for the domestic jurisdiction, the regulator may not be inclined to share that information with its foreign counterparts.
- **Legal uncertainty arising from different legal regimes makes it difficult to plan and orchestrate a wind down of an LCFI in a cross-border context.** Differences between home and host insolvency regimes, un-tested enforceability of netting and collateral arrangements, depositor and investor protection legislation, ring fencing practices, pending litigation, and the imposition of governmental or judicial measures, such as moratoria, or receivership measures, and financial sanctions, introduce significant uncertainty that makes it difficult to plan and orchestrate a wind down in a cross-border context.[6] Depending on the location of the assets and determination of the applicable law, different rules with respect to preference, ownership interests and set-off apply. The challenges arising from differences in the legal framework are well documented in the work of the Group of Thirty (1998) and the Group of 10 Contact Group (2002). Attempts at international harmonization of insolvency laws have met with only limited success.[7] Even if

achieved, harmonized laws do not necessary guarantee uniform application. As demonstrated in the Parmalat case there remain conflicting judicial approaches under the EU Insolvency Regulation despite the unified procedural rules within the European Union.[8]

- **LCFIs are too complex to fail and to be liquidated.** As documented in the Ferguson report, there is reason to believe that financial consolidation has increased the risk that the failure of an LCFI would be disorderly.[9] Given the linkages of the LCFI with the rest of the financial sector and the potential spillover effects of potential problems within an LCFI onto the institution's counterparties and the financial markets, it seems impractical to put an LCFI into liquidation.[10] The costs to society of crises and instability can be enormous.[11] The average cumulative output loss of banking crises in emerging market economies is nearly 14% of GDP, and up to 25% in developed countries.[12]

- **LCFIs are too large to save.** The costs of a partial or complete bail out are likely to be very high. The costs comprise not only direct costs for the taxpayers, but also the indirect costs of weakened market discipline and greater moral hazard. Despite cross-border spillovers the costs for bailing out would need to be borne domestically. A market perception that an LCFI would be likely to benefit from official support in times of stress provides a competitive advantage and reduces the incentives for creditors to demand disclosure and monitor risk exposures which in turn enables such institutions to take larger, riskier positions without paying higher risk premiums to their creditors.[13] There are very large international groups based in relatively small economies such as the Netherlands and Switzerland. The burden on the home public sector of any financial support could be severe.

- **LCFIs can be too remote to save. The country bearing the systemic risk may not be the country of incorporation of the LCFI.** The current scheme of cross border cooperation does not ensure that national regulators take into account the systemic risk that affects other financial systems. The failure of an LCFI with a large share in the local market of a particular foreign host jurisdiction raises a number of questions regarding home and host regulator responsibilities that so far have not been addressed. There is no mechanism in place to devise a generally acceptable sharing of the cost of a public sector solution that potentially benefits many jurisdictions.

- **Other priorities on the international agenda take precedence over work on the management of financial crises in LCFIs.** In the wake of the Asian crisis, the prospect of default by Russia and the collapse of LTCM, financial stability assumed prominence on the international agenda. Considerable work was done to deal with the root causes of the problems, to develop mechanisms for managing crises and to promote greater cooperation among key authorities. Since then, there has been no failure of an LCFI and there has been little political pressure to forge agreement on concrete proposals about how to address the issues. In the wake of 9/11, the fight against terrorism and terrorism financing moved to the forefront of the international regulatory and financial agenda. Significant progress in international cooperation and information exchange could be achieved for this purpose. The initiatives related to antimoney laundering and combating terrorism financing clearly demonstrate that meaningful international cooperation can be achieved if there is the political will and consensus on the objectives to be pursued. The events of September 11 provided an impetus for further work regarding some aspects of financial crisis management. On the international level, they generated a debate on an extension of central bank liquidity and lender of last resort assistance to avoid temporary liquidity tensions. On a national level, it prompted a review of the contingency preparedness of the financial infrastructure.[14]

II. A new perspective: Refocusing measures to resolve global institutions – function versus institution-based approach

It is neither desirable nor, in some circumstances, even possible to bail out an LCFI in distress. For this reason it is essential to develop effective means to wind it down while at the same time preserving the systemically relevant functions that it performs. This needs to be done in a world where the authority for the oversight of globally active institutions rests with national authorities.

One concrete and practical way to do this is to identify systemically relevant functions and to insulate them from the global institution. As a first step, it is necessary to agree on definitions and formulate concrete criteria for identifying systemically relevant functions. Secondly, it is necessary to develop practical methods that insulate the systemically important functions and permit the functions to be performed, but do not require the continued existence of the institution. Finally, because this approach will have to be implemented by a range of different national authorities, the conflicts of interest and incentives that exist among national regulators need to be acknowledged and addressed.

If contingency planning and state intervention focus only on the protection of the functions that are systemically relevant in the specific jurisdiction, and not on the preservation of the institution carrying out those functions, moral hazard will be reduced. LCFIs will begin to have misgivings about whether they can expect taxpayers' money to be used to bail them out. As a result, they will become more cautious.

III. Identifying systemically relevant functions

National regulators need to assess whether a LCFI performs systemically relevant functions in their jurisdiction. In order to do so, they need a definition of systemic risk and criteria to identify functions performed by the LCFI that are systemically significant. Such definitions and criteria should be mutually agreed with regulators in other relevant jurisdictions, because these authorities must at least tacitly accept that the actions are warranted. Otherwise, their own measures may undercut the actions taken to sustain the systemically important function in the original jurisdiction.

There is no generally accepted definition of a systemically relevant function.[15] An institution's function may be considered systemically relevant if its disruption would impose severe costs not only on the immediate counterparties of the institution but also on the real economy. The adverse real economic effects from systemic problems are generally seen as arising from disruptions to the payment system, to credit flows, and from the destruction of asset values.[16]

To determine whether or not individual functions or business activities of an LCFI are systemically relevant in their jurisdiction, regulators will need to establish objective criteria that help to assess possible direct or indirect (transmission) effects on the real economy of a shock or disruption affecting the LCFI. Such criteria may include the following:

- **Market share.** Market share is an important indicator of systemic relevance. It shows the potential impact that the failure of an LCFI may have. For example, if an LCFI holds a large share of the deposits in a country, its failure could impose losses on depositors and have adverse wealth effects, thus affecting consumption and savings decisions. It could also trigger deposit runs. Adequate deposit insurance may eliminate the risk of deposit runs by ensuring minimum compensation for all retail depositors, provided that the funds of the deposit insurance scheme suffice.[17] If the LCFI has a significant share in bank lending, its failure could disrupt credit relations and reduce the availability of credit, causing a "credit crunch".
- **Extent of dependencies.** If other financial institutions are heavily dependent upon the LCFI through interbank funding, risk management or payment and settlement systems, there is a serious risk that the failure of the LCFI will affect the real economy through its impact on other financial market participants. For instance, direct interbank loans may be recalled in a crisis, causing liquidity problems for creditors. Interdependencies can be *direct* and *indirect.* Direct interdependencies arise from inter firm on and off - balance sheet exposures or cross-shareholdings. Indirect interdependencies can arise from correlated exposures to non-financial sectors and financial markets. For instance, the sharing of common customer bases through alliances may make firms more vulnerable to shocks originating in the sectors where these customers operate. Difficulties at an LCFI may be perceived as spilling over to other firms.
- **Extensive participation in large-value payment and securities settlement systems.** LCFIs that specialize in trading, settlement, correspondent banking or custody activities are likely to be intertwined with the global payment and settlement infrastructure. An LCFI may have a key function in the processing of payments in a country as a member of a payment system, as an operator or co-operator of the payment system and as the provider of payment processing and correspondent banking functions to other financial institutions.[18] If a large share of the payments in one jurisdiction is processed through the LCFI, the failure of the LCFI may disrupt economic activity as payments for goods and services can no longer be made and received.[19] Similarly, the disruption of an institution with a major custodian function could severely limit its customers' access to their securities and thereby prevent the settlement of securities transactions.[20] The central importance of some LCFIs for the financial infrastructure was illustrated in the aftermath of the September 11 terrorist attacks by the problems encountered by the Bank of New York, which had a key role in the clearing and settlement of government securities.[21] In the UK, it was found that payment activity through CHAPS (the Clearing House Automated Payment System) is very concentrated. Half of payment activity

would stop if either of the two most active banks, which in turn run private payment systems for a large number of smaller banks, were to fail.[22]

- **Role in liquidity management in the interbank market.** If the local money market is dominated by an LCFI, the possibility of disruption in banks' liquidity management increases. Financial market participants may extend to or receive from an LCFI a significant amount of intraday and overnight credit. As a consequence, the failure or disruption of a large payment provider in terms of credit risk could be significant. Trading in corporate securities, government securities, and money market instruments provides banks, securities firms, and other financial institutions with the means to adjust their cash and securities positions and those of their customers. An LCFI that participates, either on its own or on behalf of its customers, with sufficient market share in one or more financial markets and fails to settle its own or its customers' pending transactions could threaten the operation of the market.[23]
- **Role in risk management.** If the LCFI is a major counterparty for local institutions in any of the markets where price, FX or credit risk is managed, the collapse of the LCFI will require the local institutions to find alternative means to manage these risks. In addition, if the exposures that are created by the failure of the LCFI generate losses for the local institutions, their vulnerability will increase.
- **Political consequences**. Considerations of the political consequences of distress in an LCFI are likely to color the assessment of whether functions or institutions are systemically relevant. Even if a failure has no immediate destabilizing effects on the economy as a whole, the potential reputational damage may be severe. Loss of confidence and reputational damage may be felt within the entire financial system and result in a shrinking of the financial industry and ultimately reduced tax income to the state.[24]

Such a simple technocratic application of pre-defined criteria to determine whether or not a particular financial intermediary carries out systemically relevant functions can (and should) be done ex ante and repeated regularly since assessments will vary over time. Financial troubles can be sudden and unexpected, but the likelihood of their occurrence can build up through time so that assessments of systemic relevance may change in the period preceding the crisis. In addition, a range of exogenous and endogenous factors, such as general market conditions and the nature of the disruption (technological difficulties or events that raise questions about the insolvency) will need to be taken into consideration in that they may have an effect on the severity with which a systemically relevant function will be affected.

IV. Insulating systemically relevant functions

Once the relevant functions within a jurisdiction have been identified, the next step is to specify and implement measures that would insulate those functions from disruptions occurring within an LCFI or, where the function itself is affected, minimize the disruption and mitigate its harmful effects. The measures may be taken alone or in combination, either ex ante or ex post.

The insulation measures discussed further below serve to ensure the continued operation of the systemically relevant function. They are "cost-neutral" in that they do not address the issue of how the losses are allocated. Several loss allocation options are conceivable. The losses may be absorbed by an industry-financed safety net, or by depositors and other creditors, or shifted to the taxpayers when public funds are used to operate the function either in an existing or newly established financial institution.[25] The proposed approach should however minimize recourse to public funds since it seeks to contain the adverse effects of a disruption by *ex ante* or *ex post* insulation measures.

Three types of insulation measures can be distinguished:

- the **replacement** of the LCFI as provider of the systemically relevant function by other financial intermediaries,
- the dismemberment of the LCFI and **detachment** of the systemically relevant functions,
- the **immunization** of the systemically relevant function from a default or disruptions in the LCFI's operations.

A. Replacement

Authorities need to consider the degree to which and the speed with which the LCFI can be replaced as a provider of the systemically relevant function. If other domestic or foreign financial intermediaries can quickly replace the LCFI as provider of the systemically relevant function, the adverse effects of the failure of the LCFI could be significantly reduced and the need to save it attenuated. The identification of alternative suppliers may ultimately lead to the conclusion that the function in itself is not systemically relevant.

To determine replaceability, the following factors need to be considered:

- **Availability of alternative suppliers.** Whether or not a function can be replaced depends on whether domestic or foreign financial intermediaries have the capacity to perform this function on a sufficient scale to fill the gap. The need to ensure sufficient competition may hamper reliance on replacement if it results in a high degree of concentration in the domestic market.
- **Infrastructure**. New suppliers would need to have the infrastructure necessary to exercise those functions, such as risk control, back office processing and IT systems. Other necessary prerequisites, for instance membership in clearing and settlement systems or securities exchanges, may make it difficult to find suitable alternative suppliers.
- **Speed.** Whether or nor the performance of the function in question can be assured through other providers depends on the speed with which they can fill the gap. In the long run every function or activity is replaceable.

The degree of replaceability will differ depending on the nature of the function. Replaceability can realistically be assumed for trading in corporate securities, government securities, foreign exchange and money market instruments. Other market participants may increase their market share or new entrants may find it profitable to begin trading. Depending on how the crisis unfolds – whether or not it develops gradually – replacement could occur without major market disruption.

In contrast, when a large number of domestic institutions rely on an LCFI to process their payments through a large-value payment, clearing and settlement system, they may have difficulty in finding alternative clearers if other institutions are not members of the payment system or if they do not have the requisite infrastructure.

Replaceability can generally be presumed for deposit taking, but it is not always simple. For a large customer base, transferring the customer relationships individually, along with the entire documentation about the relationship, including KYC information, may be a daunting task and hardly possible without any disruptions. Detaching and transferring the function in its entirety may be a more practicable alternative. Finding alternative providers for the credit granting function performed by the LCFI for small and medium sized companies and for households may likewise be complicated. Other institutions cannot be presumed to have the information needed to ensure themselves of the creditworthiness of the customers. However, it may be easier for large borrowers with good credit standing to find alternative sources of credit quickly at home or abroad and to tap securities markets directly.

B. Detachment

If there are no alternative suppliers who can perform the systemically relevant functions of the LCFI, another option is to detach the functions from the LCFI. The detachment should allow the functions to continue operating without disruptions insulating them from the wind down. The separated functions may be transferred to an acquiring financial institution, to a newly established institution, a bridge bank or to a fully or partially state-funded institution. Systemically relevant functions need not map into either the organizational or the legal structure of the bank The feasibility of detachment will depend on a number of factors and may create a number of legal and technical challenges for the authorities that may imply ex ante actions to make dismemberment easier:

- **Separability.** Whether or not a function can be spun off from the LCFI, depends on whether or not it is economically viable as a stand-alone operation and on the extent to which it depends on infrastructure or support functions that are themselves separable. When the systemic relevant function is operated by a business unit cutting across legal entities, dismemberment presupposes that all adjunct functions, the necessary infrastructure, premises, and human resources (employment contracts) are detachable and transferable irrespective of the legal entity they belong to. When key functions have been outsourced, it is necessary that the outsourcing contracts can be transferred or that an alternative supplier can easily be found.
- **Transferability.** Detachment is contingent upon its legal practicability. The integral transfer of all assets and liabilities relevant for the operation of the function must be possible within a reasonable time frame. When the systemically relevant function, along with the necessary infrastructure and support functions, is located in a separate legal entity, it can be carved out from the defunct LCFI, sold to another institution or be operated on a stand-alone basis. Ownership of the entity can be transferred by reassigning the share

capital. It is, however, much more complex to carve out business units that are essential for the operation of the systemically relevant function if they are not legally distinct. Such an operation would involve the transfer of assets and liabilities, including loans and security interests. Taken together these constitute a complex web of contractual relationships and property rights. Under general law, a transfer would require a novation or reassignment of each individual contract, observing the relevant formal requirements as set forth in the law and obtaining the consent of the customers or other beneficiaries. Such an operation would be complex and cumbersome, and impractical in a crisis that requires speedy resolution and legal certainty.[26] In some jurisdictions it is possible to apply the legislation governing mergers and acquisitions and to transfer businesses as a whole and uno actu. The recently enacted Swiss Merger Act[27] provides for a mechanism to transfer assets and liabilities. It subjects the transfer to an impairment test and requires proof that the assets of the transferred business exceed its liabilities. Part VII of the Financial Services and Markets Act 2000 (FSMA) provides for "banking business transfer schemes" designed to facilitate the transfer of a banking business.[28] To prevent abuse and provide some independent appraisal of the scheme, the FSMA requires the sanction of the court. In the United States, the "bridge bank" or the "good-bank/bad-bank"[29] separation technique illustrates a mechanism that could be used for the detachment of systemically relevant functions.

- **Legal certainty:** Clauses in commercial agreements that contain some form of consent mechanism (for instance ISDA documents) may however hamper the perfection of the transfer of business. The transfer is likely to be more difficult if the LCFI is being wound down in an insolvency procedure. A carve-out and transfer of certain part of the business and not others may result in creditors not being treated equally, depending on whether or not their relationships have been transferred to the new entity. Disgruntled creditors may challenge the transfer of business units on the grounds that the transfer has prejudiced their interests. For this reason, there are in general strict conditions attached to business transfers, such as the requirement of consent by the regulator or court sanction.[30] A statutory procedure to transfer business similar to the US-style bridge bank procedure would be useful to achieve a speedy transfer of a substantial part of an LCFIs operations. The legal framework for transferring businesses is still underdeveloped or absent altogether in many jurisdictions.

- **International recognition:** The transfer may be more complicated if it is intended to cover assets or security interests located in a foreign jurisdiction. Unless the contracts concerned are governed by the law of the jurisdiction, the transfer may not benefit from international recognition as foreign courts may not recognize the transfer of an asset or security interest.[31] It may be argued that the transfer should be recognized pursuant to conflict of law rules if there is an appropriate connection to the jurisdiction of the court that makes the order. Such a connection can be presumed where the business was operated in the jurisdiction through a branch or subsidiary.

In order to make dismemberment easier in a crisis, the authorities may consider imposing certain conditions ex ante on the operation of the systemically relevant functions in their jurisdictions. Such strictures may pertain to the legal structure and extent of outsourcing arrangements. In New Zealand, where foreign-owned banks have a significant presence, systemically-important banks are required to be incorporated locally so that they can function on a stand-alone basis if the foreign parent experiences difficulties.[32] Incorporation as separate legal entity ensures that assets and liabilities are separable from those of the foreign parent or head office, which is not the case with a branch. Branches subject to asset maintenance requirements have some of the characteristics of separately capitalized entities.[33] Ring fencing operates as a form of ex post separation. It disregards the form of organization of foreign bank branch in the host country and treats it as if it were a separate entity by claiming all assets are booked to the branch jurisdiction in order to ensure sure that enough assets remain in the jurisdiction to satisfy local creditors' claims.[34] A regulator may also choose to place some restraints on the outsourcing of key operations or management functions to a foreign parent in order to ensure separability and continuity of operations in case of disruptions in the parent institution.

C. Immunization

A third option for avoiding the realization of systemic risk is to immunize the systemically relevant function by making it "failure-proof" or at least more "failure-resistant". The following techniques can be employed to this end:

- **Collateralization**: Counterparty risk may be reduced or eliminated by requiring full or partial collateralization of counterparty claims. For instance, the proposed "Standards for Securities Clearing and Settlement Systems in the European Union" (which are intended to adapt the CPSS-IOSCO recommendations for securities clearing and settlement systems to the European environment) stipulate that providers of securities clearing and settlement services fully collateralize their credit exposures.[35]
- **Set-off and netting**: Set-off[36] and netting[37] are widely regarded as reducing the risk that the failure of a major market participant will produce knock-on effects. This is achieved by reducing counterparty exposures from gross amounts to (much smaller) net values. Close-out netting clauses are incorporated in most standardized special financial instruments.[38] They contain the right of a counterparty to unilaterally terminate the contract under certain pre-specified conditions, and the right to net amounts due at termination.
- **Carve-outs:** Statutory law or contractual agreements may insulate certain transactions and collateralization techniques from the operation of insolvency laws. In many jurisdictions, customers' securities are segregated from an institution's own securities and are immunized against claims made by third-party creditors on the custodian.
- **Market structure measures:** Strict anti-trust rules or market share limits may be imposed in order to preserve systemic integrity. For instance, in the United States, consolidation among deposit-taking institutions and the inherent systemic risk are kept in check by a market structure measure that prevents any bank from gaining more than 10 per cent of the total amount of deposits in the United States (or 30 percent of the total amount of deposits in any State).[39]

A form of insulation that has been discussed for deposit taking is to require large deposit taking institutions to conduct deposit taking in a separate legal entity and to hold all of their assets in the form of cash and marketable, short-term debt obligations, such as qualifying government securities, and highly-rated commercial papers.[40]

One way to insulate branch activities from weaknesses in the foreign head offices is to introduce asset maintenance requirements which serve to secure liabilities in the local jurisdictions. As such, US regulators may impose so-called asset maintenance requirements on branches of foreign banks to ensure that, in the event of a liquidation, sufficient assets would be available to effect repayment to depositors and other liability holders within the United States. This is typically done where US authorities are unable to judge the institution's financial strength, or perceive weaknesses in the financial condition of the parent bank or the home country.[41]

Collateralization and netting are techniques commonly used to strengthen the financial infrastructure, such as payment, clearing and settlement systems. As such, the Committee on Payment and Settlement Systems (CPSS) has developed a number of recommendations that have become accepted minimum standards to reduce cross-border settlement risk and insulate payment and securities settlement systems from the failure of market participants.[42] Similar provisions are codified in the European Settlement Finality Directive.[43] They ensure that orders entered into a payment or settlement system are insulated from cherry picking provisions, prohibit the unwinding of netting and insulate collateral from insolvency proceedings. A certain degree of immunization can thus be achieved through both statutory and contractual mechanisms.[44] However, conflicting laws and an absence of mutual recognition can render the effective application of such immunization techniques uncertain in a cross-border context.[45] Significant efforts have been undertaken to harmonize the law and to improve coordination. Overall, the patchwork of applicable laws provides some protection for close-out and netting agreements, but remains a source of legal uncertainties.[46] The proposed Hague Convention on the law applicable to certain rights in respect of securities held with an intermediary as well as the Uncitral initiatives in the area of insolvency law and security interests show that international consensus in such areas is not out of reach. Such law reform efforts tend to be less controversial than initiatives that seek to implement universal proceedings that require local officials to yield to foreign authorities.

V. Need to refocus international regulatory initiatives

A systemic crisis caused by the collapse of an LCFI will have significant costs. To avoid a collapse large amounts of public funds would have to be spent to bail out the LCFI. Public assistance however tends to jeopardize future financial stability by increasing moral hazard. However, the described measures to insulate systemically relevant functions from the failure of an LCFI also have costs. For instance, the requirement that local affiliates be separately capitalized subsidiaries will tend to increase operating costs, reduce competition and impair efficiency in the financial system. Accordingly, there is a clear calculus of the costs and benefits of LCFI regulation.

These challenges are intensified by the global reach of the LCFI. If a prevention measure can lower the costs caused by a potential disruption of the LCFI from the perspective of the national regulator, the same prevention measure may impede competition or impair market access. It may also reduce the residual value in other jurisdictions. Thus, there is a need for some common understanding among regulators on measures that are deemed acceptable in order to avoid a disorderly run on assets.

By recognizing that each national authority has a legitimate interest in protecting systemically important functions, by reaching agreement on what those functions are and by achieving consensus on the types of actions that are justified to protect them, the problems of being "too large to fail" and "too big to save" can be addressed in a pragmatic and meaningful way.

National boundaries mean little in relation to global systemic instability. Yet, they determine the national regulator's powers and shape the incentives that govern their actions. Regulators in a host jurisdiction may focus on preserving functions with systemic relevance for the local jurisdiction while regulators in the home jurisdictions may be inclined to turn a blind eye, in particular if the operations of the LCFI are small as compared to the LCFI's overall activities and have no effect on the LCFI's overall solvency and profitability.

A particular problem arises in countries where banks are mostly foreign owned. Losses occurring in the home country may lead to retrenchment from foreign operations. The insolvency of the foreign parent could lead to the disappearance of systemically significant functions in the host country. Moreover, losses can occur in the host country that cause the parent to abandon its local establishment. During the Argentine crisis some foreign banks abandoned their branches or subsidiaries in Argentina, and depositors were not able to make claims against the foreign parent.[47] A foreign parent cannot be held liable for the foreign branches' obligations or be legally compelled to recapitalize its foreign subsidiaries. The situation may generate potential conflicts of interests between home and host regulators, for instance where the home regulator would allow liquidation and the host regulators wants to continue the operation to maintain financial stability.

The current arrangements for cross-border banking supervision and the relationship between host and home supervisors do not take into account the heightened need for information of host countries where systemically relevant functions are operated by an LCFI headquartered in a foreign jurisdiction. Since host country authorities will have to bear the costs for the sound functioning of their banking system, they will need to retain adequate supervisory powers on all institutions that perform systemically important functions in their jurisdiction and, for instance, will need to know what assets are available to meet obligations in the domestic jurisdiction. The internationally-agreed framework for the supervision of multinational banks, as devised by the Basel Committee on Banking Supervision[48] assigns clear tasks to the supervisors in the home and host countries. However, these do not match the responsibilities and powers that the authorities have in an insolvency situation.[49] They shift supervisory responsibilities from the host to the home regulator and fail to acknowledge the host country's responsibilities in the event of crisis. In a situation where systemically relevant functions are operated through a branch structure the host regulator may lack sufficient reliable information concerning the risks and liabilities of the branch. However, the host country may have to pay for the costs of resolution, even if the solvency problems originated in the home country.

VI. Conclusions

We cannot expect to eliminate international financial crises entirely, but we can hope to reduce their severity. The prospect of the failure of LCFIs raises great concerns because the institutions are global but regulation is national. While it might seem logical to have a single authority with broad powers of regulatory design and supervisory oversight,[50] such suggestions are not politically feasible in the near term. For the foreseeable future, or at least until the next major international crisis, it seems that national governments will remain unwilling to cede sufficient powers to international institutions to overcome the challenges that arise out of the division of responsibilities among sovereign states.[51] Reliance needs therefore to be placed primarily on national regulators.

National authorities will continue to respond to national interests. For these reasons it is naïve to expect that coordination between home and host regulators will always work seamlessly in a crisis situation. The best way to address these challenges is to recognize the conflicting incentives and reach agreement on an approach that all concerned regulators can apply. If this is done, national regulatory action will be Pareto improving despite differing incentives. The threat of moral hazard will be kept to a minimum and distortions to competition that reduce efficiency will be limited. The aim of such cooperation should be to ensure the preservation of systemically important functions while permitting the LCFI to fail.

Three steps are needed:

(1) **First, there is a need to forge international agreement on what systemically important functions are and what criteria can be used to identify them**. If there is such agreement, it is less likely that the measures that national authorities take either ex ante or ex post to preserve these functions will be undercut by the actions of other regulators.

(2) **Second, there is a need for agreement on the type of insulation methods that could be applied to contain systemic risk without unduly distorting competition and reducing efficiency to inappropriate levels.** Further work will need to be undertaken to adapt the legal framework and to develop appropriate tools to either detach or immunize systemically relevant functions from a defunct LCFI. A statutory procedure to transfer business, similar to the US-style bridge bank procedure, is useful to achieve a speedy transfer of a substantial part of an LCFIs operations. Contractual immunization techniques need to be strengthened and to be proof against legal challenge in a cross-border context.

(3) **Third, there is a need to reexamine the cooperation arrangements between home and host regulators.** The principles for cross-border banking supervision need to acknowledge the heightened information need of regulators in host countries where systemically relevant functions are provided through foreign-controlled entities. To this end it is necessary to reach a consensus on what are the systemically important functions of LCFIs and on the types of actions that are justified to protect them. .

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[*]Eva Hüpkes is Head of Regulation in the Legal Department of the Swiss Federal Banking Commission. The views expressed here are those of the author alone.

[1] According to a study by De Nicoló et al. (2003) the predominance of conglomerates within the top financial institutions has increased between 1995 and 2000 from 42 to 60 percent, the level of conglomeration being the highest among the largest firms.

[2] This consolidation of financial sectors and development of large complex financial institutions (LCFIs) is documented in the "Ferguson Report", Group of Ten (2001).

[3] According to an IMF study, foreign-controlled assets (defined as total assets of banks in which more than 50 percent of equity is owned by foreign entities) increased worldwide by almost 40 percent between 1995 and 2002.

[4] The term LCFI was introduced by a Task Force formed by the Financial Stability Forum (FSF), the G10 Ministers and Governors and the Basel Committee of Banking Supervision in 2000 to review the main issues likely to be confronted in winding down an LCFI. The Task Force defines LCFIs with reference to the wide range of activities on a large scale in many jurisdictions and financial sectors, and their significant involvement in clearing, payment and settlement systems. Another term for an LCFI is "financial conglomerate" which is defined in the European Directive on financial conglomerates as "a group whose activities mainly consist in providing financial services in different financial sectors (banking, investment services, and insurance) comprise at least one supervised undertaking according to EU definitions, comprise at least one undertaking engaged in insurance business and at least one other undertaking from a different financial sector; and whose [intra-group] cross-sectoral activities are significant. In the United States. "Large Complex Banking Organizations" (LCBOs) are subject to more comprehensive and intensive supervision than other banking groups.

[5] Baxter, 2004.

[6] The characteristics and implications of different insolvency regimes for banks were examined in a Basel Committee report (Basel Committee on Banking Supervision, 1992). See also Group of Ten Contact Group, 2002.

[7] In 1997, the United Nations Commission on International Trade Law adopted a Model Law on Cross-Border Insolvencies, which sought to address a limited range of issues peculiar to cross-border insolvencies without harmonizing bankruptcy codes in their entirety. As a model law rather than a treaty, it relies on individual countries changing their own laws to conform to the model. The EC Insolvency Regulation, introduced in May 2002, is being binding on EU members and stipulates that EU countries must recognize each other's bankruptcy laws and insolvency administrators and their agents.

[8] Marks (2004).

[9] Group of Ten, 2001, p. 133.

[10] Systemic risks arising from the activities of large and complex financial institutions have been the subject of a number of studies. See for example Dziobek, 1997.

[11] The recent past has provided ample evidence of the costs of financial instability. See Basel Committee on Banking Supervision, 2004.

[12] Hoggarth, Reis and Saporta (2001)

[13] A concrete manifestation of this are the support ratings given by Fitch and other rating agencies that seek to reflect the probability of official support in a crisis.

[14] For example, in the UK the Bank of England set up a task force to make recommendations on the need for a legislative response to the threat of major operational disruptions in the UK financial services sector. A report summarizing the findings was published in December 2003 (Bank of England, 2003). The Financial Markets Law Committee (FMLC, 2003) undertook an analysis of how the law and market practice would respond to an event of major operational disruption. It does not consider purely financial crisis but rather disruptions due to unforeseeable events such as terrorist attacks or natural catastrophe that may have possible adverse effects on the smooth and efficient operation of financial markets.

[15] The Report of the Task Force on Major Operational Disruption in the Financial System chaired by Sir Andrew Large (Bank of England, 2003) makes reference to providers of systemically important infrastructure and recommends the development of good business continuity practices.

[16] Group of Ten, 2001, p. 130.

[17] Deposit insurance schemes are typically funded from contributions from the industry itself, sometimes on an ex post basis. At times of low profitability, payment obligations to the deposit insurance fund arising from the failure of an LCFI could place a severe burden on the remaining financial institutions.

[18] The definition of “core clearing and settlement organizations” in the Interagency Paper (2003) includes private sector firms that provide clearing and settlement services in “critical markets”, which are defined as the markets for federal funds, foreign exchange, and commercial paper, U.S. Government and agency securities, corporate debt and equity securities. The Interagency Paper was issued by the Federal Reserve, the Office of the Comptroller of the Currency and the SEC identifies sound practices that focus on minimizing the immediate systemic effects of a wide-scale disruption on critical financial markets.

[19] Lacker (2003) observes that interbank payment disruptions, whether due to technological impediments or credit quality concerns, have been central to several banking crises.

[20] The consultative paper “Standards for Securities Clearing and Settlement Systems in the European Union” dated July 2003 issued jointly by the European Central Bank (ECB) and the Committee of European Securities Regulators (CESR) proposed to define a “systemically important provider” of custodial functions as an institution that has a share of five per cent at EU level or 25 per cent at the domestic level (or lower, at the discretion of the national authorities) in the bond, equities or derivatives markets. In the latest version it is left to national discretion to decide which provider should be deemed systemically important.

[21] BoNY's role in clearing and settling government securities transactions placed it at a critical node in interbank payment flows. For an accounts of BoNY's experience, see Lacker (2003).

[22] James, 2003.

[23] As a guideline, the Interagency Paper considers a firm significant in a particular critical market if it consistently clears or settles at least five percent of the value of transactions in that critical market.

[24] In the Financial System Stability Assessment of Switzerland for 2002, IMF staff observed that a shock that would threaten one of the large Swiss institutions (or both at the same time) would ***"result not only in financial loss but also in loss of reputation – a key asset of Swiss banks"***. IMF, 2002.

[25] The guiding principle for the allocation of losses should be that shareholders should be made to bear the cost of the resolution via a dilution or even elimination of their shareholding interests.

[26] Contractual novation requires the consent of the parties. Whereas assignment does not requires consent, it only operates with respect to entitlements, it does not allow to transfer liabilities. A statutory procedure to transfer business similarly to US-style bridge bank procedure would be useful to achieve a speedy transfer of a substantial part of an LCFIs operations.

[27] The new Swiss Act on Mergers, Demergers, Transformations and Transfers of Assets (Merger Act) became effective on July 1, 2004.

[28] For a discussion of banking business transfers under the FSMA, see Proctor (2003).

[29] A bridge bank is a temporary national bank chartered by the Office of the Comptroller of the Currency and organized by the FDIC to take over and maintain banking services for the customers of a failed bank.

[30] Business transfers pursuant to Sections 104 to 117 of the Financial Services and Markets Act 2000 have so far not arisen in an insolvency context. The reading of the statute should allow for such transfers be made in the context of an insolvent transferor, or certainly in the case of a transferor whose continued solvency is in question. Provisions requiring certification by the regulators of the solvency of the transferee and court approval are intended to safeguard depositors.

[31] Under the FSMA it is presumed that the transferor institution would hold any foreign security or asset on trust for the transferee, cf. FSMA, s.112(4). The transferor is a bare trustee, and the transferee could thus require the trustee to institute any necessary proceedings for the enforcement of the security in the foreign jurisdiction.

[32] Bollard (2004)

[33] See infra note 41.

[34] See, e.g., N.Y. Banking L. § 606 *et seq.*

[35] See Standard 9, ESCB-CESR, 2003.

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[36] Set-off is "a method of cancelling or offsetting reciprocal obligations and claims (or the discharge of reciprocal obligations up to the amount of the smaller obligations). Set off can operate by force of law or pursuant to a contract." (CPSS, 1998).

[37] Netting is defined as "an agreed offsetting of mutual obligations by trading partners or participants in a system, including the netting of trade obligations, for example through a central counterparty, and also agreements to settle securities or funds transfer instructions on a net basis." (CPSS, 2001)

[38] A number of master agreements contain netting provisions, for instance, the International Swap and Derivatives Association (ISDA) Master Agreements 1987, 1992, 2002, the European Master Agreement (EMA) and the Master Agreements shepherded by the British Bankers Association and the Foreign Exchange Committee of New York.

[39] 12 United States Code Sec. 1842 (d) (2).

[40] Wilmarth, 2004.

[41] Asset Maintenance ("AM") under the New York State Banking Law means the maintenance of "eligible assets" in New York covering a specified percentage a branch's third-party liabilities which exclude amounts due to related parties usually at a level in excess of total third-party liabilities. In general, the concept of eligibility extends to those assets for which there is a reasonable expectation of liquidation on a timely basis. Asset maintenance requirements may be imposed at levels in excess of total third-party liabilities and require a branch to maintain a net "due to" parent position at all time. New York State Banking Law Section 202-b(2).

[42] CPSS, 2001.

[43] Directive 98/26/EC of the European Parliament and of the Council of 19 May 1998 on settlement finality in payment and securities settlement systems ("Settlement Finality Directive").

[44] In recognition of the importance of the legal framework for market activities, the Report of the Task Force on Major Operational Disruptions in the Financial System, Financial Markets Law Committee (2003) recommended a review of private contracts with a view to strengthening the resilience of contracts and providing greater legal certainty. The UK Financial Services Authority is in the process of conducting such review.

[45] Group of Ten Group de Contact, 2002.

[46] Bliss, 2003.

[47] Negro and Kay (2002).

[48] Basel Committee on Banking Supervision, 1996.

[49] Hüpkes, 2004.

[50] On how such could be designed, see "The Financial Industry in the 21st Century", introductory remarks by Daniel Zuberbühler, Director of the Secretariat, Swiss Federal Banking Commission at the 11th International Conference of Banking Supervisors, Basel, September 2000.

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[51] National authorities have rejected approaches that would involve supra-national authorities. See Kenen (2004) (drawing the lesson that there is little appetite for transfer of decision-making power to supranational bodies from the rejection in 2003 of the proposal made by the Management of the IMF for Sovereign Debt Restructuring Mechanism (SDRM). The route chosen instead looked to promote the inclusion of collective action clauses in bond documentation rather than the broadening of international law).

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