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Resolving Large Complex Financial Organizations

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by

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Resolving Large Complex Financial Organizations

Abstract

The resolution of a large complex financial organization (LCFO) presents numerous problems, including organizational complexity, opacity of positions, and conflicting legal jurisdictions. Of particular concern is the potential impact of large derivatives books. Widespread adoption of laws permitting close-out of derivatives contracts exempts these contracts from the usual stays that provide time for the orderly resolution of claims by the courts. Thus, a potentially significant part of the LCFO's assets and liabilities are exempted from normal bankruptcy procedures, creating the potential for a disorderly dismemberment of an insolvent LCFO. Nonetheless, however inconvenient they may be for bankruptcy administrators, the closeout netting privileges enjoyed by derivatives are essential to reducing legal uncertainty, increasing liquidity, and minimizing the systemic impact of large failures. The solution advocated in this paper is for regulators to provide "facilitated private resolution" for dealing with systemically important financial institutions, along the lines of the Long-Term Capital Management workout and the "London Approach" practiced in the last century. To make this early intervention effective, consolidated supervision is needed to ensure that comprehensive information is available and intervention takes place while the firm is still solvent.

Resolving Large Complex Financial Organizations

1 Introduction

The avoidance of financial distress has been the subject of voluminous research and protracted debate. The successive draft proposals of the Basel Committee on Banking Supervision to revise bank capital standards, which have occupied regulators' and bankers' attention for several years now, are aimed at ensuring the safety and soundness of banks. Financial institutions have themselves been at the forefront in the quantification and management of risk and have developed a multitude of financial instruments for this purpose, both for their own uses and for the benefit of other sectors of the economy—credit and energy derivatives to name two notable recent innovations.[1]

These processes and innovations have improved, at least potentially, the management of risk. However, they can not eliminate entirely the chance of financial distress. From time to time, even in the best of all possible economic worlds, financial firms will fail through unforeseen economic shocks, mismanagement, or fraud.

That the failure of some large financial firms might pose particular problems for the financial system is a widely, though by no means universally, held idea.[2] For instance, the Federal Deposit Insurance Corporation Improvement Act of 1991 (FDICIA) provides a systemic risk exemption to the usual least cost resolution procedures mandated for resolving a failed bank.[3] Earlier concerns about size *per se* making failure intolerable (too big to fail) have been replaced by a more nuanced consideration of mitigating the systemic effects of a failure. Greenspan (2000, p. 14) has noted that "…an organization that is very large is not too big to fail, it may be too big to allow to implode quickly." If such systemically important financial institutions indeed exist, the processes that come

[1]These innovations include a multitude of financial instruments such as swaps, options, forwards, futures, and securitizations, variously repackaged. For convenience, I use the term "derivatives" in this article generically.

[2]Whether or not any financial institution is truly systemically important is a matter of some debate and rather depends on how the term is interpreted. It is unlikely that the failure of any one or few firms would lead to a total collapse of the financial system, and it is likely that the collapse of some firms in some circumstances would impose considerable costs on the financial system and the economy, though perhaps not catastrophic costs.

[3]12 USC 1823(c)(4)(G)

into play when such a firm becomes distressed will determine how costly and disruptive the event proves to be. Preventing quick implosion requires an understanding of the economic and legal issues surrounding the possible financial distress of a large complex financial organization (LCFO), and the regulatory and market mechanisms for dealing effectively with these issues. It thus behooves us to try to anticipate what might happen when an LCFO fails. In addition, the study of failure resolution is important to the understanding of market structure and risk management; for what happens when a firm fails determines at least in part the arrangements entered into when the firm is solvent and constrains the actions of various interested parties when the firm becomes distressed.

To understand why the resolution of LCFOs is particularly challenging to legal systems, I first provide an overview of the goals, objectives, and mechanisms of insolvency proceedings in different jurisdictions. It is against this background that the resolution process will play out and that efforts to reform the process must take place. Next, I examine the treatment of derivatives, specifically the ability of counterparties to terminate and net contracts. This represents a widespread exception to normal bankruptcy procedures that is critical for the operation of derivatives markets and has important implicatin for the resolution of LCFOs. Finally, I propose a model for resolving LCFOs that aims to overcome many of the problems in the current system: Timely intervention by regulators, working with counterparties to resolve a financially distressed LCFO without recourse to the formal bankruptcy process. This solution rests on two key elements: first, access to timely, relevant, accurate, and consolidated information on the distressed firm; and second, agreement among counterparties that it is in their best interests to have an informal coordinated resolution rather than to risk exercising their close-out rights through formal bankruptcy proceedings.

The organizational structure and complexity of LCFOs have evolved beyond simplistic corporate structures and contract types historically anticipated in our insolvency legislation and common law traditions, or in our economic models of firm structure for that matter. An important part of the evolution of financial markets over the last 30 years has been the development of derivatives and other nontraditional financial instruments. The involvement of large systemically important institutions in these markets makes it important to consider how these contracts are treated under insolvency

and whether this affects the ability of legal and regulatory authorities to resolve these institutions in an orderly and efficient manner.

Taken together, these factors suggest that our current practices, laws, and institutions are ill equipped to minimize the costs of failure of an LCFO. This paper suggests one alternative for mitigating the potential problem: timely regulatory intervention to facilitate voluntary non-judicial resolution of weak or insolvent financial companies. The resolution of Long-Term Capital Management (LTCM) in 1998 provides a recent example of such an approach.

1.1 *Why LCFOs?*

The distinction between banks (insured depositories) and other financial institutions has important bases in law and regulatory frameworks, particularly in the U.S., but is increasingly anachronistic in today's financial markets. Financial markets are increasingly broad and interlinked. Few of the largest banks are engaged solely in traditional banking activities—deposit taking, lending, and payment processing. Most of the largest U.S. banking organizations embed one or more chartered, insured deposit-taking banks within a bank holding company that also owns non-bank subsidiaries. The importance of asset securitization, derivatives dealing, and structured finance has deeply involved banks in the broader financial markets: Banks and non-banks participate in the same financial markets, offer many of the same financial products, compete with each other, and are each others' major counterparties. The U.S. practice, confirmed in the 2000 Gramm–Leach–Bliley banking reform legislation, of segregating depository institutions from other financial firms for regulatory treatment, even when they coexist in the same holding company, ignores this reality. In Europe, universal banks have long been the norm, so the regulatory treatment there is more consistent with market practices. European regulation already recognizes the importance of LCFOs, as exemplified by the EU Financial Conglomerates Directive. The consolidation of regulatory powers in unified authorities, such as the Financial Services Authority (FSA, 2001) in the U.K. and the Bundesanstalt fur Finanzdienstleistungsaufsict (BAFin, 2002) in Germany, has further facilitated a unified approach to supervising large complex financial groups. In contrast,

in the U.S., historical bifurcations between investment and commercial banking, a "banks are special" idée fixe, and a preoccupation with deposit insurance issues (moral hazard, pricing, examination) have long held sway, leading to a more narrow focus on the part of banking system regulators.

Developed financial markets are generally robust, and the failures of small financial firms, while painful for the parties directly involved, rarely endanger significant numbers of counterparties. This being widely understood, the failure of a small financial institution raises few systemic concerns. However, the failure of a large institution raises concerns that it will directly trigger other failures; for example, by failing to pay its creditors, the insolvent LCFO may cause these other firms to become insolvent.[4] Furthermore, uncertainty in the markets as to who is directly affected by the failure, and to what extent, may lead participants in the payments system and the short-term capital markets to take defensive measures, thus causing a general contraction of liquidity. This in turn may lead to financial distress in vulnerable firms that do not have direct exposures to the firm whose failure triggered the crisis.

The failure of an LCFO, of all firms, raises the greatest potential for such systemic consequences. This is because financial institutions provide capital and other financial services to all sectors of the economy and they form the backbone of the financial markets, markets that rely to a great extent on trust. Thus, the failure of a financial intermediary calls into question a multitude of business relations. In contrast, the failure of a non-financial corporation of comparable size is more easily localized: Witness the recent string of bankruptcies of technology firms that have raised no fears of systemic risk in the usual sense of a freezing up of financial markets, in spite of the unprecedented size of the firms involved. Nor are banks the sole source of systemic risk concerns. The latest distressed firm episode to have raised systemic risk concerns in the

[4]Recent research suggests that fear of such "direct contagion" may be unwarranted, for example, Furfine (2003).

minds of a significant number of observers was LTCM, a hedge fund.[5] Though not huge by financial institution standards, with $145 billion in assets, the possible failure of LTCM was viewed as potentially much more serious at the time than the actual failure in 2002 of WorldCom with a comparable $107 billion in assets. Other examples of non-bank systemic risk episodes include the stock market crash of 1987, any number of sovereign debt defaults, and the failure of Drexel Burnham Lambert in 1990.

This highlights two important points. The first is that it is not only banks, but also other major financial market participants that are potential sources of systemic financial market risk. The second is that size per se is not the sole determinant of systemic concern. Rather it is the real or perceived risk to financial markets that a particular firm's failure might engender that matters. This potential impact is certainly correlated with size, but it depends importantly on the depth and importance of the particular markets in which the firm is involved.

1.2 *Overview of the paper*

LCFOs present a number of challenges that affect the resolution process. These are broadly issues of *coordination*, relating to reconciling the objectives of different regulators, legal jurisdictions, and creditors; *opacity*, relating to the inability of traditional accounting methods to provide sufficient information about contingent liabilities in off-balance-sheet activities and derivatives portfolios; and *time*, relating to the difficulty of managing the orderly resolution of firms that have large portfolios of derivatives, some of which are exempted from the "time out" imposed on other counterparties in bankruptcy proceedings. I explore all of the issues in detail in the following sections. While none of these issues are unique to LCFOs, they are apt to come together with particular severity if an LCFO becomes distressed.

[5]LTCM was a large hedge fund with an illustrious set of general partners, including two Nobel laureates and a former Governor of the Federal Reserve Board. Equity grew from $1.3 billion in February 1994 to $7.0 billion in December 1997, at which time it had approximately $1 trillion in notional value of derivatives positions outstanding, making it the largest investor in a number of financial markets. In late 1998 the fund experienced massive losses, which threatened to wipe out its equity. The Federal Reserve Bank of New York, which had been monitoring the situation and fearing that default would trigger severe disruptions of the financial markets, convened a consortium of 16 major creditors, who agreed to inject additional capital into LTCM to ensure its solvency while its positions were unwound. Thereafter, LTCM was gradually liquidated without further losses.

The essential fact is that markets move quickly, while courts do not. Normal bankruptcy procedures involve a stay or "time out" while the courts gather information; explore resolution possibilities; and in liquidations, pay off claims in an orderly manner, in reorganizations, oversee renegotiation of contracts. Central to this solution process is the ability to delay settling claims, thus keeping assets under the control of the insolvency administrator, until things can be sorted out. LCFOs are heavily involved in derivatives markets, and for these contracts the ability of the courts to suspend their execution (termed "stays") has been effectively eliminated.[6] This, in turn, raises the possibility that a substantial portion of the firm may quickly disappear out from under the control of the bankruptcy administrator(s), frustrating their efforts at orderly resolution. In addition, the complexity of LCFOs, both their legal and financial structures and their financial positions vis-à-vis counterparties, and the volatile values of derivatives contracts create problems for bankruptcy administrators forced to act in a rapidly changing environment.

This dark picture is further dimmed by the conflicts across jurisdictions—as to the specifics of their bankruptcy processes, as well as how they react when multiple jurisdictions are involved. Bankruptcy law is designed to solve various coordination problems amongst the creditors of the insolvent firm and other parties. For firms operating across multiple legal jurisdictions, the insolvency process itself creates a coordination problem across the very agents charged with solving the coordination problem amongst creditors.

The organizational complexity of financial companies and the integration of their products into the financial system demands effective consolidated supervision of those that may properly be viewed as systemically important. This would require legislative changes in the U.S., as well as an informal understanding among regulators and market participants as to the norms for achieving early and cooperative intervention. Sadly, the prospects for addressing the problem by means of legal convergence and formal

[6]Not all derivatives—swaps, options, futures, forward rates agreements—are exempted, though most of those covered by master agreements (vide infra) are. Just what is and what is not covered is a source of legal uncertainty. A few additional (non-derivative) financial contracts are also exempted—including repurchase agreements and various transactions cleared through clearing houses (payments and exchange traded derivatives). Most financial contracts, however, are not exempt from bankruptcy stays.

mechanisms for international crisis resolution through political processes, both in the U.S. and abroad, are remote.

2 Bankruptcy objectives and procedures

Early Roman personal bankruptcy procedures purportedly involved dividing up the debtor and distributing the parts to the creditors if he could not pay within a stipulated period.[7] Placing the debtor into slavery was an alternative and widely practiced resolution procedure that preserved the productive capacity of the debtor but transferred the benefits to the creditor.[8] Similar thinking underlies modern corporate bankruptcy processes, and these ancient solutions find their modern equivalents in the two major outcomes to corporate bankruptcy: liquidation and reorganization.

While the evolution of legal processes to deal with bankruptcy dates back to the beginnings of written history, the analysis of these processes in an economic framework is comparatively recent. Jackson (1982) argues that bankruptcy procedures function to provide a collective debt collection mechanism designed to maximize the returns to creditors.[9] If creditors are allowed individually to enforce their claims, an uncoordinated bankruptcy proceeding involving multiple creditors is likely to lead to the dismemberment of an insolvent corporation and to a loss of value. Many insolvent firms have greater value as going concerns than can be extracted by liquidating their physical and financial assets. The intangible assets—such as human capital and business relationships—are dissipated or destroyed in the process of liquidation. Furthermore, creditors who are successful in seizing assets have little or no incentive to maximize the liquidation value of those assets once their own claim is satisfied, because any excess recoveries must invariably be turned over to the remaining creditors. Thus, without a credible means of ensuring cooperation amongst creditors, each creditor has every incentive to try to act in their own interest and seize what assets they can, even though they are aware that in doing so, they diminish the value that will be recovered by the creditors as a group.

[7]See Kennedy (1994) and Knight (1992). This process would today be considered undesirable. Whether this insolvency procedure was helpful in reducing the incidence of default is unrecorded.
[8]Homer (1977) notes that the Code of Hammurabi (Babylonia, circa 1800 BC) limited the bankrupt's term of personal slavery for debt to three years—an early form of debtor protection.

Corporate bankruptcy processes solve this problem by coordinating the resolution of claims. A court (or administrator), interposed between the insolvent firm and its creditors, imposes a time out, termed a "stay," to prevent the untimely and inefficient liquidation of assets. Having taken control of the situation, the court then determines the best method of realizing the value of the firm (orderly liquidation of assets and/or reorganization), ascertains the value of all creditors' claims, and then determines how those claims will be discharged. Of these several steps, the power of the court (or administrator) to stay the execution of creditors' claims on the firm's cash flows and assets is absolutely crucial.

The creditor-coordination perspective views bankruptcy law as a means of protecting creditors from each other. An alternative perspective is that the function of bankruptcy is to provide a means of protecting the debtor from the creditors. In the U.S., firms that file for protection under Chapter 11 of the bankruptcy code enjoy considerable powers to manage the renegotiation of their creditors' claims. The purpose of Chapter 11 is to preserve the insolvent firm as a viable economic entity.[10] Reorganization frequently involves violation of seniority rights in the final settlements and reduced recovery rates for creditors.[11] Notwithstanding, reorganization is viewed in many cases as socially desirable as it may benefit non-creditors (for instance, employees) who are not formally party to insolvency proceedings. Again, critical to the success of a reorganization is the ability of courts to compel counterparties to stay claims (for payment of debts) and to keep contracts (for instance, for services) in force.

The recent development of credit protection has altered the incentives of parties to an insolvency proceeding and poses a potentially serious threat to future resolutions.[12] Credit protection, for instance in the form of credit default swaps, protects the creditor who purchases the protection in the event of a counterparty's default. However, "default" may be narrowly defined so that the protection only obtains in certain events. Thus, a creditor who has purchased credit protection from a third party may be better off if the

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[9]Armour (2001) provides a thorough analysis of this and alternative analytic frameworks.
[10]Kahl (2002) finds that "Chapter 11 may buy poorly performing firms some additional time, but it does not seem to allow many of them to ultimately escape the discipline of the market for corporate control."
[11]See, among others, Franks and Torous (1994).
[12]See discussions on the impact of credit default swaps on the restructuring of Marconi debt in the *Economist*, May 17th, 2003, p. 67 and *Derivatives Weeks*, September 16th, 2002, p. 8.

debtor is liquidated. Their recovery from the debtor may be reduced vis-à-vis what they could obtain in a reorganization, even though reorganization may result in greater aggregate recoveries, but their losses are made good by the credit default protection writer. Thus, creditors with protection may resist coordinated solutions that would fail to trigger the credit protection they have purchased. Writers of the credit protection, who would have an incentive to cooperate, are not generally party to the bankruptcy process since they are not direct creditors of the insolvent firm. This creates a potential situation, already made manifest in a number of distressed workouts, where protected creditors have sharply different incentives than the unprotected creditors.

2.1 *Bankruptcy laws*

This neat picture of the problem of insolvency and its solutions becomes less reassuring when we consider LCFOs. As usual, the devil is in the details. The insolvency of an LCFO necessarily raises questions of competing jurisdictions, with potentially conflicting objectives. And as we will see, the treatment of derivatives contracts, and the enforceability and effect of their termination and netting provisions, to some extent undermines the procedural niceties assumed in the bankruptcy procedures.

Bankruptcy laws vary across countries in their details, as one would expect, but more importantly they vary in their underlying philosophies.[13] This makes reconciliation of bankruptcy codes something of a challenge. Attempts at international harmonization of bankruptcy laws have met with only limited success, in part because of conflicting philosophies and legal traditions. 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 to change their own codes to conform to the model.[14] In contrast, the recently enacted European Insolvency Regulation has the advantage of being binding on EU members. EU countries must recognize each other's bankruptcy laws and insolvency administrators and their agents. For cross-border insolvencies, the courts of

[13]The philosophical background to differences in bankruptcy law is discussed in Bliss (2003).
[14]As of October 2002, the model law had been adopted, at least in part, in Eritrea, Japan**,** Mexico, South Africa, and within Yugoslavia, Montenegro (www.unicitral.org).

the country in which the company's "centre of main interest" is located will take the lead, and proceedings in other jurisdictions will play a secondary and supportive role.[15]

2.1.1 *U.S. bankruptcy laws*

Bankruptcy law in the U.S. is unusually, perhaps uniquely, complex. The Federal Bankruptcy Code (generally referred to as simply "the Code") governing most corporations allows for both liquidation and reorganization. Cases involving firms subject to the Code are heard in special federal bankruptcy courts. The Code overlays the commercial law of the relevant state which in turn governs the contracts that underlay the claims to be adjudicated. Thus, the law applicable in any bankruptcy proceeding is a combination of the Federal Bankruptcy Code and various non-bankruptcy statutes, including state commercial codes and various federal laws (ERISA, governing retirement plans, is an example). Thus, variations in applicable law can vary from case to case. The bankruptcy code is generally pro-debtor, with some exceptions. There is no general right of set-offs, or netting, of obligations.

Various laws have carved out exemptions to the Code. Depository institutions (banks), insurance companies, government-sponsored entities (GSEs, for example, Fannie Mae), and broker-dealers all have distinct resolution procedures, and certain types of financial contracts receive special treatment under the Code.

Insolvent insured depository institutions are resolved under the Federal Deposit Insurance Act (FDIA), as amended by the Financial Institutions Reform, Recovery, and Enforcement Act (FIRREA), and subsequent acts.[16] Closure authority for banks lies with the appropriate regulator, depending on the bank's charter. Creditors cannot force a bank into bankruptcy since banks are specifically exempted from the Code. The appointment of the Federal Deposit Insurance Corporation (FDIC) to administer an insolvent bank is mandated for federally chartered, federally insured institutions and is usual for state chartered, federally insured intuitions. The FDIC either acts as receiver to liquidate the bank or as conservator to arrange a workout (merger, sale, or refinancing).

[15]This is rather a smaller step forward than it may appear. Conflicts in bankruptcy laws remain and are likely to give rise to anomalies such as French pro-debtor courts enforcing British pro-creditor laws in subsidiary proceedings to a UK-based bankruptcy. Furthermore, the absence of mechanisms for Europe-wide registration of creditors will make coordination of related proceedings difficult. (See Willcox, 2002.)
[16]12 USC 1811 *et seq*. (1989).

2.1.2 *Conflicting jurisdictions*

The resolution of an LCFO will necessarily involve multiple legal jurisdictions, which leads to two problems. The first is whether the insolvent firm should be resolved as a single entity regardless of the location of creditors and assets, or whether each of the several jurisdictions in which the creditors and/or assets are located should be treated separately. There are two basic approaches to this fundamental question: the unitary or single-entity approach, which treats the firm as a whole, and the "ring-fence" or separate-entity approach, which seeks to carve up the firm and resolve claims in each jurisdiction separately. The second problem, which is not unrelated to the first, is whether to conduct multiple proceedings in each relevant jurisdiction or have one jurisdiction take the lead and other jurisdictions defer to it. Ring fencing has the practical advantage of placing assets at the disposal of the court most likely to have control of them and minimizing the dependence on cross-jurisdictional information sharing. It also provides an admittedly crude solution to conflicts in laws and legal objectives. In the case of insured depository institutions, ring fencing serves the interests of the deposit insurers by ensuring that the insolvency of a holding company does not strip assets out of a bank subsidiary. Potentially however, ring fencing can make coordinated cross-border (and cross-jurisdiction) resolutions more difficult because it leads to differential payoffs for creditors—(domestic) creditors in jurisdictions where the ratio of assets to claims is higher will enjoy higher recoveries. Ring fencing also leads to potentially adversarial competition among jurisdictions, each seeking to maximize the value of assets available to their own creditors—the very problem that bankruptcy procedures are supposed to solve, now writ large.

British bankruptcy law takes a single-entity approach to resolving international firms, regardless of the location of assets or the nationality of the creditors. The UK court makes every effort to obtain control of all the firm's assets, which it then divides equally among the creditors (in a liquidation). The court makes no distinction between domestic and foreign creditors, even in the distribution of domestically controlled assets directly under its control.[17] Importantly, however, UK bankruptcy law recognizes that it may be more appropriate in some cases for another, perhaps the home country's, court to take the

lead in the resolution of an international firm. In such cases, the UK provides local support for agents of the foreign courts, for instance in obtaining control of assets located in the UK, so long as the creditors are not made worse off than they would be under a UK resolution.[18]

The U.S. approach to these issues is complex and fragmented. Where a branch or agency of a foreign bank becomes insolvent, a U.S. administrator can attach (seize) all of the foreign parent's assets in the U.S. even if they are part of a different nonbank subsidiary.[19] The U.S. court or administrator would ring fence those assets and use them to satisfy domestic claims, paying any surplus to satisfy creditors in any foreign proceedings.[20] This necessarily means that domestic creditors are given precedence over foreign ones. On the other hand, in resolving a U.S. bank, the FDIC takes a single-entity approach and seeks to obtain control of offshore assets.[21] Resolution of LCFOs is further complicated because in the U.S. specialized laws and procedures apply to banks, broker-dealers, and insurance companies. Thus, where these activities are co-located in a single holding company, the ring fencing can apply to parts of the same domestic entity. Bank subsidiaries are ring fenced vis-à-vis nonbank subsidiaries of the same holding company. The FDIC may seize the assets of affiliated banks (subsidiaries of the same holding company), while federal bankruptcy courts would take control of the assets of an insolvent parent bank holding company.

It is the policy of the Federal Reserve that bank holding companies must provide unlimited support for their banking subsidiaries.[22] Efforts to enforce this policy, either after the bank was closed (for example, MCorp in 1989) by requiring that bank holding company assets be transferred to the FDIC, or through asset transfers prior to closing of the bank (for example, Bank of New England in 1991), later challenged as voidable, have resulted in repeated litigation between the bankruptcy trustees and the regulators, the outcome of which has been inconclusive. These examples well illustrate the potential for

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[17]Beaves (1999), p. 244.
[18]Ibid, p. 246.
[19]12 USC 3102(j)(1).
[20]12 USC 1821(d)(11)(A) together with 12 USC 1813(l)(5)(A). See Curtis (2000) for a full discussion.
[21]Mattingly et al. (1999), p. 270.
[22]Banking law unambiguously acknowledges only a limited obligation to provide support—up to a maximum of five percent of the subsidiary's assets prior to the subsidiary becoming undercapitalized (12 USC 1831o(e)(2)(E)(i)(I)).

adversarial proceedings when multiple authorities are involved in the resolution of complex organizations.

3 Termination and netting of contracts[23]

In most business relations, netting and set-off are not significant issues. Generally, firms either buy from or sell to other firms, but rarely do both simultaneously. So, in the event of bankruptcy, few if any contracts could be netted or set-off. However, financial markets can generate huge numbers of bi-directional transactions between counterparties. Interbank payments systems involve banks sending each other funds to clear thousands of transactions throughout the day, and the direction and amount of individual transfers are unpredictable. The gross amounts of such transactions are huge, but at the end of the day the net transfers are relatively modest. Similarly, many large commercial and investment banks make markets in derivatives securities and hedge their positions with each other. Again the gross positions are huge, but the net positions are modest.[24]

There are two types of netting rules. Those that apply in the course of ordinary business—payments netting, also called settlement netting or delivery netting—and those that apply in resolutions of insolvent firms—close-out netting, also called default netting, open-contract netting, or replacement contract netting. Close-out netting agreements consist of two related rights: the right of a counterparty to unilaterally terminate contracts under certain specified conditions (close-out), and the right to offset amounts due at termination of individual contracts between the same counterparties when determining the final obligation. In the U.S. and some other jurisdictions, the governing contracts typically contain terms stipulating the actions to be taken in the event of default. In other jurisdictions, such as the UK, a common law netting right exists.

Both payments and close-out netting are widely seen as reducing systemic risk by limiting counterparty exposures to net rather than gross exposures. This in turn makes the operation of financial markets more efficient. The widespread adoption of carve-outs,

[23]The exposition in this section borrows heavily from Johnson (2000).

[24]In 2002 U.S. banks had total derivatives credit exposures of $525 billion, 96 percent of which (measured by notional value) was concentrated in seven banks. Netting reduced banking system-wide gross exposures by 75.8 percent, a figure that had increased from 44.3 percent in the second quarter of 1996. Still, a number of major banks have (net) derivatives credit exposures exceeding their risk-based capital, in the case of J. P. Morgan Chase by a factor of 589 percent. (Preceding data are from OCC, 2002.)

providing pro-creditor protection for payments systems and derivatives securities, particularly in the form of collateral arrangements and netting agreements, represents one of the great successes in international legal harmonization. This process has been shepherded by the International Swap and Derivatives Association (ISDA), a trade group that coordinates industry documentation practices, drafts model contracts, and lobbies for legislative changes to support the enforceability of those contracts. Central to the ISDA approach to netting is the concept of a master agreement that governs transactions between counterparties. The Master Agreement constitutes the terms of the agreement between the counterparties with respect to general questions unrelated to specific economic transactions: credit support arrangements, netting, collateral, definition of default and other termination events, calculation of damages (on default), documentation, and so forth. This Master Agreement constitutes a single legal contract of indefinite term under which the counterparties conduct their mutual business. Individual transactions are handled by confirmations that are incorporated by reference into the Master Agreement. This device of placing individual transactions under a single master agreement that provides for netting of covered transactions has the effect of finessing the problem of netting under various bankruptcy codes. Having only a single contract between each pair of counterparties to a Master Agreement eliminates the problem of netting multiple contracts.[25] Netting legislation covering derivatives has been adopted in most countries with major financial markets (the UK being a notable exception, where netting has long been provided for in the bankruptcy code), and ISDA has obtained legal opinions supporting their Master Agreements in most relevant jurisdictions.

3.1 *Close-out netting*

Close-out netting involves not only the treatment of interrupted bilateral payments flows, but also the treatment of outstanding contracts between solvent and insolvent counterparties.[26] The netting of obligations in the event of default is the subject of

[25]In some cases, there may be several Master Agreements covering different classes of contracts and with different divisions of the same holding company. Thus, counterparty netting protection may be less than complete. This has led to the development of Cross-Product Master Agreements, in effect Master Master Agreements. ISDA is lobbying for legislative recognition of these innovations to reflect industry risk management practices. Recent proposed changes to the U.S. bankruptcy code have supported this idea.
[26]An additional major issue is the treatment of collateral, which I do not cover in this discussion.

considerable legal debate and differences in laws, as is the related issue of termination rights.

In general, close-out netting involves the termination of all contracts between the insolvent and a solvent counterparty. Broadly speaking, there are two relevant classes of contracts: executory contracts are promises to transact in the future (but where no transaction has yet occurred), such as a forward agreement to purchase foreign currency; and other contracts, such as a loan, where a payment by one party has already occurred, I refer to as "non-executory contracts," since no single legal description applies. These two types of contracts are treated differently under close-out netting in jurisdictions where such laws apply.

Non-executory contracts, such as loans, may contain clauses that permit the creditor to accelerate future payments—for instance, repayment of loan principal—in the event of default or the occurrence of a stipulated credit event, for example a downgrade by a rating agency. Acceleration is not netting per se but a precursor to netting and determines in part the amounts due. The handling of non-executory contracts where payments are due to the insolvent counterparty depends on the contract terms and legal jurisdiction. The most common treatment is to accelerate all contracts between solvent and insolvent counterparties when determining net obligations.

Whereas non-executory contracts may be accelerated in insolvency, executory contracts are terminated. Termination cancels the contract and creates a claim for compensation, usually the cost of reestablishing the contract on identical terms with another counterparty.

Where close-out netting is permitted, the general procedure is that upon default or contractually agreed "credit event,"[27] executory contracts are marked-to-market and any payments due from acceleration of terminated non-executory contracts are determined. These values are then netted and a single net payment is made. If the solvent counterparty is a net creditor, the solvent counterparty becomes a general creditor for the net amount. Usually, the solvent counterparty determines the values of the contracts being terminated and payments owed. These computations are subject to subsequent litigation. However,

[27]Termination events may include cross defaults (defaulting on other contracts), mergers, changes in legal or regulatory status, changes in financial condition, and changes in credit rating (Johnson, 2000).

disputes over the exact valuation do not affect the ability of the solvent counterparty to terminate and replace the contracts with a different counterparty.

Acceleration and termination change the amounts immediately due to and from the solvent counterparties vis-à-vis what would have been currently due had the credit event (default, downgrade) not occurred. Terminations of contracts with the resulting demands for immediate payments may precipitate financial collapse of a firm and make it impossible to resolve the firm in an orderly manner or to arrange refinancing.[28] For this reason, many jurisdictions limit the rights of counterparties to enforce the termination clauses in their contracts. The court can impose a stay, which does not invalidate termination clauses in contracts but rather overrides them, perhaps temporarily, at the discretion of the court or an administrator. Staying contracts keeps them in force; normal payments are still due. This differs from cherry picking, which involves disavowing unfavorable contracts and forcing the counterparties to become general creditors for the firm.

3.2 *U.S. legal treatment of close-out netting*

Although close-out and netting are two separate issues, they are intimately linked in the case of derivatives. Close-out refers to the termination of contracts, while netting refers to the setting off of multiple claims between solvent and insolvent counterparties. For most contracts these are separate issues.

In the U.S., stays of indefinite term are automatic for most contracts when a corporation files for protection under the Code.[29] Furthermore, netting of most contracts is not generally recognized under the Code, thus cherry picking is permitted. However, as noted earlier, various carve-outs or exceptions provide special netting and termination rights for certain financial contracts and certain types of counterparties, though the treatment is Byzantine. In general, for financial contracts governed by ISDA and similar master netting agreements, cherry picking is prevented and termination rights are recognized.

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[28] A recent example is the acceleration of some $4 billion of Enron's debt following its downgrade by rating agencies. The firm could not meet the resulting demand for immediate payment of principal and was forced to file for bankruptcy. Until that time, Enron had not actually failed to make a payment on any obligation, though it was almost surely already insolvent.

[29] 11 USC 362.

Under U.S. common law, when a bank depositor also has (performing) loans outstanding with the bank, the amount of uninsured deposits may be netted against the principal outstanding on the loan in the event of insolvency of either the bank or a bank borrower. Where the defaulting party is a corporation or a nationally chartered bank, federal laws apply.[30] For state-chartered banks, state law applies.[31] While the common law principle of netting of certain bank depositor obligations is widely recognized, it is still subject to legal uncertainties and is narrow in scope. This has led to the enactment of a number of specific laws governing certain types of financial contracts and certain types of financial institutions.

The Code permits netting of swap contracts and prohibits stays of swap contracts.[32] Furthermore, swap contracts may be terminated for reasons of insolvency, commencement of bankruptcy proceeding, or appointment of a trustee, though such terminations are expressly prohibited for other types of financial contracts, for instance, unexpired leases.[33] Swaps are generally considered to include most derivatives contracts entered into under ISDA and similar master agreements. Thus, counterparties of firms whose insolvency is governed by the Code have some degree of protection of their netting and termination rights, though the scope of what qualifies as a "swap" is perhaps unclear. However, this provides no protection when the insolvent counterparty is a bank, broker/dealer, GSE, or insurance company, which would not be subject to resolution under the Code.

For insolvent insured depository institutions, FDIA as amended by FIRREA provides for netting of "qualified financial contracts" between insolvent insured depository institutions and other counterparties regardless of type. The term "…'qualified financial contract' means any securities contract, commodity contract, forward contract, repurchase agreement, swap agreement, and any similar agreement," with the FDIC being

[30]Scott v Armstrong 146 U.S. 499 (1892).
[31]For instance, the right of the depositor to offset the value of the deposits against the depositor's indebtedness was recognized in Heiple v. Lehman, 358 Ill. 222, 192 N.E. 858 (1934) and FDIC v. Mademoiselle of California, 379 F.2d 660 (9th Cir. 1967). In all cases "mutuality" of obligations must be established. For instance, if a holding company fails, deposits made by one subsidiary usually may not be seized to pay off a loan taken out by another subsidiary. Where insured deposits are involved, netting occurs prior to the determination of insurance coverage.
[32]11 USC 362(b)(17) and 11 USC 560.
[33]11 USC 365(e)(1).

given the authority to make the final determination as to which contracts qualify.[34] This definition covers most OTC derivatives governed by ISDA and similar master agreements. The FDIC, as administrator or conservator of a failed insured depository institution, may transfer qualified contracts to another financial institution, for instance a bridge bank, subject to a requirement to notify the parties involved by noon on the next-business day.[35] The FDIC may also repudiate any contract but must pay compensatory damages, which has much the same effect as termination initiated by a solvent counterparty.[36] The FDIC has announced that it will not selectively repudiate contracts with individual counterparties—that is cherry pick—but its legal obligations in this regard are unclear. However, the FDIC may not stay the execution of termination clauses, except where termination is based solely on insolvency or the appointment of a conservator or receiver.[37] Thus, the take-over of a bank by the FDIC is not an enforceable "credit event" under ISDA contracts in the U.S., so long as there is not some other basis for terminating an agreement, such as a failure to make a payment. If contracts are transferred, all contracts between the insolvent depositor institution and a given counterparty must be transferred together, thus prohibiting cherry picking of transferred contracts.[38]

The Federal Deposit Insurance Corporation Improvement Act of 1991 (FDICIA) permits enforcement of netting agreements in financial contracts between financial institutions.[39] However, FDICIA's support for termination rights is a matter of some uncertainty. The FDIC maintains that FDICIA does not preempt the ability to stay termination under FDIA when the insolvent institution is a bank under conservatorship. A legal opinion obtained by ISDA disagrees. To date, the matter has not been tested in the courts.[40] Oft agreed, never passed, changes to the bankruptcy code (see footnote 31) support this reading of Congressional intent. The Federal Reserve Board and ISDA's

[34] 12 USC 1821(e)(8)(D)(i).
[35] 12 USC 1823(d)(2)(G) and 12 USC 1821(e)(10).
[36] 12 USC 1821(e)(1) and 12 USC 1821(e)(3).
[37] 12 USC 1821(e)(8)(E) and 12 USC 1821(e)(12). Proposed changes in the U.S. bankruptcy laws would greatly enhance the FDIC's ability to stay termination of qualified financial contracts for banks under conservatorship for most reasons other than actual non-payment. For banks under receivership a one-day stay would be provided for (H.R. 975, Sec 903(a)(3)).
[38] 12 USC 1821(e)(9)
[39] 12 USC 4401–05.
[40] See Bergman et al. (2003) for a detailed discussion.

legal opinion on the enforceability of close-out termination rights under ISDA Master Agreements conclude that the wording of 12 USC 4405, which prohibits stays of netting agreements (but is silent on termination agreements), does preempt the FDIC's claim of powers to stay close-out netting for insolvent banks. Financial institutions are broadly defined as "… broker or dealer, depository institution, futures commission agent, or other institution as determined by the Board of Governors of the Federal Reserve System."[41] According to the Federal Reserve's criteria for determining whether an institution qualifies (laid out in Regulation EE), the firm must be a trader or dealer, rather than an end user, and meet a minimum size requirement.[42] For such designated financial institutions, the ability to net payment obligations under netting agreements is quite broad. However, this law only recognizes the enforceability of netting agreements in contracts; it does not create a general right to net obligations. Furthermore, these provisions are limited to contracts between designated financial institutions and, thus, provide no protection for contracts between financial institutions and nonfinancial institutions.

Overall, therefore, the patchwork of laws governing termination and netting of derivatives contracts provides some protection of close-out and netting agreements, but remains a source of legal uncertainties. For example, it is not clear whether unenumerated derivatives contracts such as credit, equity, energy, and weather derivatives would fall under the rubrics of either "swap" or "qualified financial contract." Furthermore, the enumerated classes of covered counterparties—stockbrokers, financial institutions, and securities clearing agencies—fail to cover all important financial market participants. The FDIC's various rights under FDICIA remain unclear and untested in the courts. Attempts have repeatedly been made to eliminate the legal uncertainty, going back at least to 1996. Most recently, both the House and Senate passed broadly similar bills (H.R. 333 and S. 420) to address these issues as part of a larger reform of the Bankruptcy Code. These efforts were strongly supported by trade groups, the Federal Reserve, and the Treasury. However, the resulting piece of legislation failed to pass due to unrelated political considerations.

[41] 12 USC 4402(9).

4 Other issues in resolving LCFOs

As noted earlier, bankruptcy and, in the U.S., bank resolution procedures are predicated on the orderly liquidation or reorganization of a troubled firm under the supervision of a court, an administrator, or in the case of U.S. banks, the FDIC. The first step is to stay the exercise of most claims against the firm while the administrator ascertains assets and liabilities, determines the validity of claims, realizes the value of assets, and pays off creditors in a liquidation or negotiates with creditors to arrange a reorganization. These procedures take considerable time, sometimes even years.[43]

The issues discussed above were largely related to coordination—across competing legal and regulatory jurisdictions. Next, I discuss some additional issues complicating the bankruptcy process for LCFOs. These issues fall into two general categories—opacity and time.

4.1 *Opacity*

LCFOs tend to be informationally opaque to outsiders because accounting methods are not designed to provide detailed information about contingent liabilities embedded in off-balance-sheet activities and derivatives portfolios. More importantly, for the purposes of failure resolutions, this detailed information is often unavailable to insiders as well. Rather, much of the information available to managers, counterparties, and regulators and/or courts is of a summary nature.

Accounting statements are simply too crude to capture these complexities, and the infrequent and aggregated values they present are insufficiently informative of the positions and risk exposures of a modern financial institution. Such obfuscation is inherent in the ambiguity of financial accounting rules and is therefore endemic. It is further exacerbated by the failure of accounting rules to come to grips with valuation of assets and liabilities whose values change rapidly. The accounting treatment of off-balance-sheet activities also leaves much to be desired. While accounting statements can provide estimates of the current values of assets of on- and off-balance-sheet positions,

[42]The size requirements are $1 billion of gross notional principal outstanding or $100 million of gross marked-to-market value of outstanding positions (Johnson, 2000, p. 87).
[43]Franks and Torous (1994) report that in their sample of firms filing for Chapter 11, a median 27 months was required to complete reorganization.

current accounting methods are unable to account for contingencies embedded in these positions and rapidly changing portfolio composition and values render nugatory analysis based on annual or even quarterly assessments. These problems lie in a basic disconnect between the goals of accounting—to report what is—and the goals of risk management—to anticipate what may be.

Take the simple case of a long-term bond with a due-on-downgrade provision in its indenture that requires the issuer to immediately redeem the bond if its rating is downgraded below a certain level. An investor might look at the ratio of the firm's income before interest and taxes to the periodic interest payments—the "times interest earned" ratio—to assess the creditworthiness of the firm. The information for doing this can be inferred, if somewhat imprecisely, from the balance sheet and the income statement. But in the event that a rating downgrade triggers the obligation for immediate repayment of principal, these computations become meaningless. If the debt is publicly traded, the presence of these triggers will appear in the bond indentures, though few analysts or portfolio managers trouble to read these. If the debt is privately placed, there is unlikely to be any publicly available information regarding this contingent liability.

Mark-to-market or mark-to-model accounting (whereby assets and liabilities are restated on the balance sheet to reflect their observed market values, or for infrequently traded assets and liabilities, using valuation models) can do little to alleviate the information problem. Even if the due-on-downgrade covenant was noted, evaluating that information requires sophisticated models whose output will depend on a myriad of assumptions. This is not information that can be synthesized in an accounting statement. The market or model valuation itself provides some information, but it is based on conditions at the time the evaluation was made (and the model used). Without detailed information regarding all embedded contingencies, one cannot infer the payment obligations for the bond or its value under possible alternative scenarios.

This is of course true for most assets and some traditional liabilities. Inventory may prove more or less valuable depending on fluctuating market prices; the value of pension liabilities depends on changes in rates of return and the performance of the pension portfolio. What is special about contingent liabilities and derivatives is the potential for rapid and large changes in payment obligations.

A second issue of concern has to do with the summary nature of much of the information available to managers, counterparties, and regulators and/or courts. LCFOs tend to manage their activities in a decentralized manner. Firm-wide coordination and risk management (where it exists) is usually based on summary information of profits, losses, risk exposures, and so forth passed up from the divisions to the head office(s). This summary information, where it is correctly structured, should be sufficient for risk management purposes. However, in the event of financial distress, when the firm or an administrator seeks to sell off the derivatives positions, more detailed information is needed. The problem of decentralized information is sometimes exacerbated by incompatible legacy accounting systems arising from recent mergers. Few large complex firms are in a position to rapidly provide detailed firm-wide information about individual positions at a level of detail sufficient for a potential buyer to make an informed valuation.[44] The result is that buyers will only purchase a derivatives book at a price well below the true market value, since in effect they are buying a grab bag of contracts with only a vague idea of the contents.

4.2 *Time*

Banking regulation frequently seeks to avoid the resolution process by having regulators become increasingly involved in a bank's activities as it approaches insolvency. In the U.S. the prompt corrective action provisions of FDICIA dictate a series of increasingly rigorous actions that supervisors are required to take as a bank's capital declines below the regulatory minimum.[45] These plans for preventing a bank from becoming insolvent presume that the decline in a bank's condition will be observable and sufficiently gradual to permit timely intervention. Prompt corrective action cannot work when perceived asset values change rapidly, either because their true value has been hidden and is suddenly realized or because of fluctuations in market values. Recent notable bank failures have been the result of fraud (First National Bank of Keystone, 1999) or incorrect valuation (perhaps fraudulent) of derivative assets (Superior Federal Savings Bank, 2001). Changing market conditions rather than fraud caused LTCM's

[44]Following Enron's failure, J. P. Morgan announced revised firm-wide exposures over a period of several weeks.
[45]12 USC 1831o.

equity to go from $4.8 billion in January 1998 to $600 million in September, with the clear danger that leverage (approaching 100 to 1 by that time) and margin calls (forcing liquidation of its positions in illiquid assets) would wipe out the residual in a matter of days (see Edwards, 1999).

While fraud and rapid changes in asset values can frustrate the (ex ante) procedures that managers, counterparties, and regulators have adopted to prevent or minimize the incidence of insolvencies, the treatment of derivatives during an insolvency is apt to frustrate the (ex post) procedures for the orderly resolution of firms with large portfolios subject to close-out netting. The inability of insolvency administrators to effectively prevent or stay close-out of a significant portion of the distressed firm's contracts means that these contracts and their related collateral can be terminated and liquidated. This may leave the firm so impaired as to make reorganization impractical. Attempts to prevent such close-outs "for reasons solely of filing for protection" are unlikely to prove effective—contracts usually provide other termination conditions beyond the control of courts and/or regulators, for instance, "due-on-downgrade" clauses, which are likely to be triggered at the same time.

There exists some possibility that the close-out can be preempted by selling the book, or in the case of a bank insolvency transferring it to a bridge bank, but these decisions must take place with incomplete information about the assets to be sold or transferred and under extreme time pressure—close-out can only be postponed with the forbearance of the solvent counterparties that hold the option to exercise termination once the firm becomes sufficiently distressed. Since large firms have multiple counterparties, the situation is likely to be extremely unstable. The value of derivatives positions is liable to change rapidly due to the actions of other counterparties. Once one counterparty exercises its close-out rights, a "rush for the exit" will inevitably develop—counterparties will seek to liquidate their collateral and positions before the actions of others depress prices (the "fire-sale" effect) and their own losses increase.[46] This is the same problem

[46]This is markedly different from other assets. If a bank collateralizes a loan with a real asset such as an apartment building and the borrower defaults, the building is not going to disappear and its value is unlikely to change significantly over the next few weeks. On the other hand, terminated derivatives contracts cease to exist and the value of financial assets that are held as collateral can change rapidly.

that gave rise to coordinated bankruptcy procedures—now recurring because removing the stays effectively exempts derivatives contracts from the process.

5 Recommendations

I have provided an overview of the bankruptcy laws and the problems relating specifically to resolution of LCFOs. The combination of rapidly developing insolvency, opaque derivatives positions, and the exemption from stays has the potential to preempt the usual options open to regulators and courts to conduct a deliberate and well considered (that is, leisurely) liquidation or reorganization of an LCFO. Below, I present what I believe to be a potentially effective means to resolve LCFOs.

One may be tempted to suggest that policymakers should simply reverse the legislative carve outs from bankruptcy stays that apply to derivatives through the master agreement mechanism. This would place derivatives back into the coordinated resolution process and eliminate the problems that close-out netting might precipitate. But these carve outs serve a useful purpose; indeed, the entire over-the-counter derivatives market is predicated on the contractual mechanisms that have evolved along with these markets. Eviscerating the master agreement concept risks massive and in this case partially foreseeable consequences. The over-the-counter derivatives markets as we know them would probably disappear—dealers would be unable to maintain the current levels of positions if prudence and/or regulators required holding capital against gross instead of net exposures, causing liquidity to shrink. This in turn would fundamentally undermine the ability of firms across the economy to manage risks.

The alternative is to leave the carve outs in place, expand them where it leads to improvements in markets, risk management, and systemic risk reduction, and to then differentiate between systemically important firms and firms that are not systemically important through regulatory oversight in a manner consistent with these "facts on the ground." Not every firm that fails with large derivatives positions poses a threat to the financial markets—Enron is an example. However, firms whose failures do pose a systemic threat and whose resolutions cannot be effectively handled under insolvency procedures, or whose insolvency resolution presents considerable legal risks, need to be treated differently—they need to be prevented from ever reaching formal insolvency

proceedings.[47] In other words, the principle of "prompt corrective action," already found in U.S. banking regulation, needs to be applied to LCFOs. The procedure I have in mind would require mechanisms and agencies for coordinating extra-legal and, therefore, voluntary resolution (workouts) of these particular financial firms when they become distressed.[48]

This conclusion requires subordination of two other considerations: the possible reduced monitoring incentives that the current derivatives contracts and rules may induce, and the pro-debtor criticism that any such informal procedure might protect derivatives counterparties at the expense of other creditors who may not be parties to the workout.[49] The first of these concerns is theoretical and has not been empirically confirmed.[50] The second is philosophical and presumes that the workout is likely to be unsuccessful, for if the workout is successful the "other creditors" will receive their due in full. It is worthwhile to note that workouts, including LTCM's, frequently involve creditors who are party to the workout putting additional capital into the financially distressed firm, rather than stripping assets out of the firm. Informal workout procedures have proven effective in the past in reducing the incidence of formal bankruptcy proceedings with their attendant costs (see Armour and Deakin, 2000).

However, to be effective, voluntary coordinated intervention in a financially distressed LCFO requires elements not currently in place. One is timely, relevant, accurate, and consolidated information. Another is agreement among the counterparties that it is in their interests to have an informal, coordinated resolution.

Different accounting standards make interpretation of division and subsidiary level financial statements difficult; and consolidated statements do not provide sufficient detail to anticipate potential problems arising from the location of assets and liabilities. That current accounting standards produce financial statements that are not always

[47]This is one of the recommendations made by the President's Commission on Financial Markets in its 1999 analysis of lessons from the LTCM debacle.

[48]Use of voluntary rather than formal (legal) procedures has been shown to reduce the deadweight costs of resolution (Franks and Torous, 1994); an added benefit.

[49]Of course, any workout cannot negotiate away these other claimants' rights unless the claimants are party to the negotiation and agree to the reduction. However, the workout can result in a restructuring that, if unsuccessful, may ex post have transferred value away from those parties who were not party to the workout. But this already happens in the case of post-insolvency (debtor in possession) financing, whereby the administrator can negotiate debt agreements that are senior to those of the existing creditors.

[50]See Bergman et al. (2003) for a detailed discussion of the theoretical arguments.

informative is no longer subject to question. Banking secrecy and privacy laws may provide further impediments to information sharing across jurisdictions. Thus, while the level of detail needed for regulators to anticipate financial distress and trigger informal resolution procedures would not be as fine as that needed to dispose of assets, the process would still require more and better information than is currently available.

Furthermore, to be able to implement this failure resolution process, consolidated supervision is necessary for LCFOs so that a single regulatory agency is looking at the entire firm in detail.[51] This would help to prevent fraud that relies on no one supervisor knowing the total position of the firm and would allow the supervisor to assess firm-wide risk exposures. This knowledge can best come through a consolidated supervision process.

The European Parliament has recently enacted a series of directives requiring consolidated supervision of financial conglomerates. In the cases of EU subsidiaries of non-EU parent companies, the home country must provide equivalent consolidated supervision of the worldwide activities of the firm, or the subsidiary must be separately incorporated in the EU and subject to EU supervision. The U.S. also requires consolidated supervision by home country authorities of foreign financial firms seeking to operate bank or financial holding companies in the U.S., but provides only rudimentary consolidated supervision for domestic financial holding companies. The Gramm–Leach–Bliley Act (2000) provides for the Federal Reserve to act as the umbrella supervisor of financial holding companies, and the Federal Reserve is separately charged with regulating bank holding companies. But under this umbrella role, the direct supervision is delegated to other agencies—the OCC, the FDIC, the SEC, and state bank and insurance regulators. Information flow between these parties is subject to frictions, and different agencies have different agendas. For instance, the SEC, which focuses on investor protection, fraud, and more recently on corporate governance, has not been historically

[51]Consolidated supervision, in contrast to functional regulation by multiple regulators, requires only that a single regulator examine and supervise a given firm in its entirety for safety and soundness. Consolidated supervision does not necessarily imply a single regulator for all financial firms—domestically or globally—nor does it mean that multiple regulators could not address different unrelated issues, for instance work place safety, fair lending, or equal employment opportunities.

much concerned with safety and soundness or systemic risk. The result is that consolidated supervision in the U.S. is more theoretical than real.[52]

Where the home country is not the principal place of business of a multinational financial firm, the incentives for the home country supervisor to monitor are attenuated. And where the home country is small, the ability of the home country supervisor to monitor may be non-existent. Unfortunately, political rather than economic and prudential considerations may result in a reluctance to prohibit firms from gaming differential regulatory regimes. This has in the past led to strategic positioning of countries of incorporation for purposes of minimizing oversight—BCCI's basing itself in Luxembourg being an example.[53] The result is that consolidated supervision alone does not guarantee good supervision.

The goal of supervision and information gathering should be to detect problems sufficiently early to intervene. LTCM, recall, still had a positive net worth when the Fed stepped in. Once a firm becomes clearly insolvent, counterparties may be unwilling to continue to do business with it, and voluntary workouts may become impossible.

The second requirement after timely detection is for the counterparties to agree that it is in their interests to have an informal coordinated resolution rather than to risk exercising their close-out rights with concomitant costly liquidation of positions and ultimate resolution of (net) claims through formal bankruptcy proceedings. The benefits of informal coordinated resolution are usually obvious, but because a few creditors may be better off if they liquidate their positions quickly enough, counterparties need a mechanism to encourage collective rather than individual action. This requires that the creditors agree to the process and agree on an agent to coordinate their discussions. Such an agent has to be seen as credible and impartial. Armour and Deaken (2000) have analyzed the development of such a "norm" in the London financial markets. The process was driven initially by the Bank of England, which arranged the workouts, no doubt

[52]This has naturally led to discussions between U.S. and EU regulators as to whether European subsidiaries of U.S. financial institutions meet EU requirements under the Consolidated Supervision Directive.

[53]BCCI is the classic example of a corporate structure designed to facilitate fraud. "BCCI's headquarters were established in countries with weak supervisory authorities, strong secrecy laws and neither lenders of last resort nor deposit insurers who would have financial reasons to be concerned about the solvency of banks chartered in their jurisdictions. … [S]eparate auditing firms were hired for each [subsidiary] bank." (Herring, 2002)

applying a bit of moral suasion to get the creditors to come to the table. However, after informal workouts became accepted and creditors realized that they would continue to deal with each other in the future, and hence that they would be penalized for uncooperative behavior, the Bank of England was able to withdraw, and the creditors determined among themselves which lead bank would coordinate (collect information, chair discussions, and act as arbiter) the process.[54] The Federal Reserve Bank of New York provided much the same role in the resolution of LTCM. It had the ability to bring creditors to the table (the New York Fed's table) and to create an atmosphere that allowed the firm to avoid the pending margin calls that would have precipitated a rush to close-out by all. This is perhaps a useful model for dealing with future resolutions, if impending problems can be anticipated in time.

While some may wish to keep regulatory agencies out of the process, there is no obvious alternative. Financial markets are too competitive and institutions face too many incentive problems to expect the self-managed London Approach to operate internationally: The will to cooperate may be there, but the willingness to delegate considerable power to a competitor to act as lead bank and arbiter is unlikely to be present. Only a central bank or financial authority can have the credibility for coordinating such a process, and only a few have the resources and expertise. Central bank or financial authority participation is also needed because these institutions have a unique ability to "encourage" participation—to twist arms, as it were. The key ingredient that made the privately managed London Approach work—reputation effects based on ongoing business relations—is disappearing as the lifespan of individual financial firms becomes increasingly uncertain due to mergers and (non-distressed) restructurings. A key corollary is that all parties must perceive that they benefit from the process, that each is made better off because all arms are being equally twisted.

Some will be concerned that intervention by a central bank, or even a financial supervisory authority, may create an implicit guarantee that the government will bail out the participants if the restructuring is not successful. This criticism has been made of the

[54]Notably, the process has begun to break down as American "vulture" funds, which purchase defaulted debt to realize quick returns, have entered the market. These firms have no expectations of ongoing business relations with other creditors and have aggressively pursued maximizing their current claims, effectively breaking the bond that made cooperation possible.

Federal Reserve Bank of New York's intervention in the LTCM case. It is thought that such implicit guarantees might lead to excessive risk taking by parties to the agreement. However, so long as participation is voluntary—so long as no party is positively barred from exercising their legal rights to terminate or to resort to the courts—even if participation is "strongly encouraged," it is not obvious that guarantees need be implied. In any case, with any guarantee being at best implicit, the central bank can decline to bail out creditors if it perceives that they have acted unwisely. In the end though, the possible costs of central bank or financial supervisory authority involvement in private resolution must be balanced against the costs of not facilitating private resolution and dealing with the resulting consequences, for a credible non-public alternative does not exist.

This recommendation more closely encompasses the principal of prompt corrective action, rather than too-big-to-fail. The facilitated private resolution I am proposing may return the distressed firm to economic viability or may simply allow the firm time to be restructured so as to no longer pose a systemic threat. Again, the LTCM example is useful—the consortium recapitalized the firm sufficiently for it to unwind its positions in an orderly manner, after which it ceased to exist. However, the legislated prompt corrective action mandated under FDICIA does not present a useful model. Firstly, the political hurdles to enacting such a policy within the U.S. and internationally make a legislative approach impractical—witness the repeated failure of bankruptcy reform in the U.S. Secondly, the "bright line triggers" (mandated regulatory actions tied to specified levels of capital adequacy) embedded in past prompt corrective action legislation have invited litigation as to whether the thresholds have been breached. Lastly, legislatures tend to be nationalistic; it is just as unlikely that France would permit passage of an EU law allowing a U.S. regulator to facilitate the resolution of a French LCFO as it is that the U.S. would pass one allowing for an EU facilitator of a U.S. LCFO. The solution to the political intractability of a formal legalistic approach lies in the informality of the old London Approach by which parties simply agreed to participate. In this case, the parties would include the various regulatory agencies and, at least tacitly, their governments, as well as the LCFOs and their major counterparties.

My proposal also presumes an appropriately motivated, credible, and informed regulator with sufficient technical resources to perform the function. To the extent that

regulators are perceived to favor the interests of certain interested parties, for instance, deposit insurers, their credibility as neutral arbiters may be limited. Other regulatory shortcomings that have been mentioned by various commentators in various situations include a disinclination to recognize problems ("not on my watch"), self-aggrandizement (empire building), desire to steer market developments in certain directions, and susceptibility to political interference. Notwithstanding these myriad potential problems, the test of a regulator's ability to facilitate a voluntary resolution lies in the market participants' willingness to accept them in the role. The successes of the New York Fed in the LTCM workout and the Bank of England in initiating the London Approach show that the requisite degree of credibility and acceptance is achievable.

However, this model would still require a minimum of legislative reform. The Federal Reserve's weak umbrella regulator role, acting through other functional regulators, would need to be replaced by a consolidated regulator with direct supervisory responsibility for systemically important LCFOs. In Europe, banking secrecy laws may need to be modified to permit the necessary information gathering and sharing, a process already under discussion to address other problems (such as money laundering and terrorist financing).

Whether the appropriate regulators will be willing to take the role I am suggesting in the future and whether they should signal their terms of engagement in advance as a matter of principle or remain constructively ambiguous are issues that need to be further discussed. Regulators also need to establish mechanisms for deciding which single regulator will act in any given case, as multiple or competing coordinators opens the possibility for mischief.

However, until the informational problems are solved, it will only be by happenstance that LCFOs are discovered to be distressed when they are still sufficiently solvent to allow for a voluntary coordinated resolution. Until then our financial institutions and markets operate in a world where the normal mechanisms for resolving potential insolvencies of our major financial organizations may prove inadequate to cope with these systemically important institutions.

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