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## Systemic Risk And The Long-Term Capital Management Rescue

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## **ABSTRACT**

Systemic risk is generally defined as the possibility that a financial problem in one firm or market may spread by “contagion” to others, and that, if panic spreads far enough, general confidence in financial institutions may be impaired, the flow of funds from lenders and investors to borrowers may be disrupted, and the real economy may suffer a loss of jobs and productive investment. Economists are divided on the nature, and even the existence of systemic risk, but in the wake of the recent global financial turmoil, congressional interest has increased. Several committees and subcommittees have held hearings, and legislation affecting hedge funds may be considered by the 106<sup>th</sup> Congress. This report will be updated as needed to reflect legislative, regulatory, and marketplace developments.

# Systemic Risk And The Long-Term Capital Management Rescue

## Summary

In September 1998, the Federal Reserve Bank of New York coordinated a rescue of Long-Term Capital Management (LTCM), a hedge fund that was on the brink of failure. The survival of a hedge fund, a private investment partnership available only to wealthy individuals and institutions, is normally not a matter of public concern. This case was different: LTCM had used such extensive leverage — it had augmented the size of its investments by borrowing and through use of derivative financial instruments — that its failure seemed to carry a “systemic” risk to financial markets in general and to the economy.

Systemic risk is generally defined as the possibility that a financial problem in one firm or market may spread by “contagion” to others, and that, if panic spreads far enough, general confidence in financial institutions may be impaired, the flow of funds from lenders and investors to borrowers may be disrupted, and the real economy may suffer a loss of jobs and productive investment. Economists are divided on the nature, and even the existence of systemic risk, but in the wake of the recent global financial turmoil — of which the LTCM incident is a part — congressional interest has increased. Several committees and subcommittees have held hearings, and legislation affecting hedge funds may be considered by the 106<sup>th</sup> Congress.

In April 1999, the President’s Working Group on Financial Markets (an interagency group of financial regulators) issued a report on the implications of the LTCM case. The report focused on the systemic risk posed by highly-leveraged financial institutions, which include not only hedge funds, but many large banks and securities firms. The failure of one of these institutions could be contagious to others, because they trade heavily with one another.

The challenge to policy is to constrain excessive leverage. The Working Group report concludes that the best defense against excessive risk taking is market discipline, but notes that history shows that from time to time market participants become complacent and fail to monitor the risks posed by their creditors and trading partners. Firms themselves may often underestimate the risks of their own financial positions and trading activities: measurement of risks involved in complex, global investment strategies is difficult. What was thought to be a safe position may be revealed as highly risky in a market crisis.

The Working Group puts forward a number of specific recommendations, some requiring legislative action, including more disclosure by hedge funds and the firms that trade with them, improvement in risk measurement techniques by regulators and private firms, enhanced authority to monitor affiliates of regulated institutions, and the imposition of international standards on offshore financial centers.

This report will be updated as needed to reflect legislative, regulatory, and marketplace developments.

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# Systemic Risk and the Long-Term Capital Management Rescue

In September 1998, the Long-Term Capital Management (LTCM) hedge fund<sup>1</sup> nearly failed when its investment strategy — devised by Nobel prize-winning economists and legendary Wall Street traders — fell apart in the market turmoil that followed the Asian financial crisis and Russia’s default on its government bonds. Rather than allow the fund to collapse, the Federal Reserve Bank of New York called in officials of 13 large investment and commercial banks (all of which had money in LTCM, either as investors or as creditors) and had them contribute \$3.6 billion in new capital to allow the fund to meet its short-term obligations; in return, they became 90% owners of LTCM.

Even though no government funds were used, many were critical of the Fed’s involvement in the LTCM rescue. Hedge funds are limited by law to wealthy, sophisticated investors and they are known to pursue risky investment strategies. Why should the failure of such an entity warrant a government response? It is commonly assumed that the Federal Reserve may take steps to prevent the collapse of a large bank with billions in federally-insured deposits (such as Continental Illinois), or that banks will be directed to extend credit to brokerage houses during market disruption such as that of October 1987. In this role, the Fed is the “lender of last resort,” the final bulwark against financial chaos.

Critics of the LTCM rescue view the Fed’s intervention as a dubious expansion of the lender-of-last-resort function. Why should a private partnership, with only a few dozen employees, dedicated to high-risk speculation on behalf of a small group of wealthy investors be saved from its own mistakes? More generally, if a hedge fund can be considered “too big to fail,” won’t similar institutions be tempted to assume excessive risks? For capital to be allocated to the most productive sectors of the economy, investors must bear the risks, not just reap the rewards, of their investment choices. Those decisions will be distorted if market participants believe there is a chance that the government will cushion their losses — the savings and loan failures of the 1980s are a recent example of this.

The Fed certainly anticipated that many would interpret its LTCM role as an unjustifiable expansion of the “safety net” under financial institutions and markets. Still, it chose not to let LTCM go into default. In public explanations, the Fed has stated that in the unsettled market conditions of the fall of 1998, LTCM was indeed too big to fail. It was not just a matter of losses to the fund’s partners, lenders, and trading partners:

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<sup>1</sup> For background on hedge funds, which are essentially unregulated mutual funds, see CRS Report 94-511E, *Hedge Funds*, by (name redacted).

[With] the failure of LTCM, ...substantial damage could have been inflicted on many market participants, including some not directly involved with the firm, and could have potentially impaired the economies of many nations, including our own....The plight of LTCM might scarcely have caused a ripple in financial markets or among federal regulators 18 months ago — but in current circumstances it was judged to warrant attention.<sup>2</sup>

In other words, losses from a default might not have been confined to those with direct stakes in the hedge funds, but could have encompassed other institutions and markets throughout the financial system and the real economy: LTCM posed a systemic risk.

The notion that a single private firm engaged in speculative trading could threaten the financial system has drawn congressional interest. Several hearings since the LTCM rescue have addressed hedge funds,<sup>3</sup> and legislation has been proposed in the Senate (Sen. Amdt. 313 to S. 900) that would bring some hedge funds under the regulations that apply to public mutual funds. On April 28, 1999 the President's Working Group on Financial Markets, representing the Fed, the Treasury, the Securities and Exchange Commission (SEC), and the Commodity Futures Trading Commission (CFTC), delivered to Congress a report on the implications of the LTCM episode.<sup>4</sup> The report contains a number of recommendations, some of which could not be implemented without new legislation.

This report analyzes systemic risk as a policy issue, briefly summarizes the conflicting positions of economists on the issue, and surveys the conclusions and recommendations of the Working Group's report. Just as the Fed's role the LTCM rescue broke new ground, the Working Group's report offers a new look at the problem of maintaining financial stability in markets that are changing.

## Systemic Risk as a Policy Issue

There is no standard definition of systemic risk. Most definitions, however, contain common elements: financial trouble in one firm or market is transmitted to others, in a kind of domino effect, until confidence in the entire financial system is impaired. With a loss of confidence, financial intermediation — the process by which savers' funds are allocated to productive investments that produce real goods and

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<sup>2</sup> Statement of Alan Greenspan in: U.S. Congress. House. Committee on Banking and Financial Services. *Hedge Fund Operations*. Hearing, 105<sup>th</sup> Congress, 2<sup>nd</sup> session, October 1, 1998. Serial No. 105-80. p. 23.

<sup>3</sup> In the House Banking and Financial Services on October 1, 1998 and May 6, 1999 (full committee); March 3, 1999 (Subcommittee on Capital Markets); March 24, 1999 (Subcommittee on Financial Institutions); and in the Senate Agriculture Committee on December 16, 1998.

<sup>4</sup> President's Working Group on Financial Markets. *Hedge Funds, Leverage, and the Lessons of Long-Term Capital Management*. April 1999. [Hereinafter cited as *Working Group Report*.] Available on the Internet at <[www.cftc.gov/tm/hedgerefundreport.htm](http://www.cftc.gov/tm/hedgerefundreport.htm)>.

services — also breaks down: lenders refuse to lend, investors are unwilling to buy stocks and bonds, and businesses cannot raise money. A fall in business investment has short-run costs in lost jobs and long-run costs in terms of lower than optimal growth in the economy.

If these are the consequences, clearly there is a public interest in controlling systemic risk. One could argue that in the United States the central institutions of financial regulation were set in place principally to reduce systemic risk: modern banking regulation (with deposit insurance and the separation of commercial and investment banking) and federal securities regulation (with restrictions on short selling and limits the use of debt to finance securities purchases) both came into being in the 1930s, aimed in great part at preventing a recurrence of the bank failures and stock market crash that preceded the Great Depression.

On the other hand, economists and policy makers agree that risk-taking is essential to economic growth. Financial resources must be placed in the hands of those who can produce innovations in technology or business organization that will create wealth and raise the standard of living. This unavoidably creates risk for the intermediaries that oversee the allocation of capital, and some of them will fail. If regulators are too fearful of the systemic consequences of such failure, they may curtail risk-taking by, for example, requiring financial institutions to maintain unnecessarily high capital reserves against possible losses.

If financial risk is over-regulated, the result will be less investment and slower growth. Under-regulation, on the other hand, may lead to financial instability. As regulators seek to strike the right balance, the more information they have about systemic risk — about the pathways and processes by which financial trouble becomes contagious — the better their judgements will be. However, despite the existence of an enormous (and rapidly growing) literature on the subjects of financial crises and systemic risk, there is no consensus among economists and market participants about how financial crises start or spread, how to prevent or contain them, or even whether regulators should be concerned with systemic risk at all.

## **Different Views of Systemic Risk<sup>5</sup>**

The Asian financial crisis of 1997-1998 provides a useful illustration of the different concepts of systemic risk. A number of countries, most of which had experienced very impressive rates of economic growth over the preceding decade, were struck by dramatic currency depreciations, sudden drops in the price of stocks and other assets, withdrawals of capital by domestic and foreign investors, and disruptions in banking and capital markets. Subsequently, several suffered (and some continue to suffer) rises in unemployment and either recession or sharp reductions in

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<sup>5</sup> For a lengthier treatment of this topic, see: Crockett, Andrew. Why is Financial Stability a Goal of Public Policy? In: Federal Reserve Bank of Kansas City. *Maintaining Financial Stability in a Global Economy*. A Symposium, August 28-30, 1997. p. 7-54.

the rate of growth in the real economy. More remarkably, the crisis did not strike the entire region at once, but appeared to hopscotch from one country to the next.<sup>6</sup>

Economists' ways of looking at these events can be divided into three basic groups. One group tends to see financial crisis as a byproduct of some underlying fundamental economic imbalance. In this view, government energy is better spent on macroeconomic policies: if these are sound, the financial markets will generally take care of themselves. A second view is that the crisis originates within the financial system itself, but probably is the result of some market imperfection or government policy that impedes the optimal functioning of the markets. The third group would agree with the second that the crisis may be endogenous to the financial sector, but it views instability as inherent: the nature of financial markets makes them vulnerable to intermittent episodes of instability.

The first group sees the financial disturbances as nothing but a symptom of some underlying fundamental problem. The problem, according to this analysis, does not reside in the financial system but in the real economy. For example, the Asian currencies were pegged to the dollar while the dollar was gaining value against the yen, making Southeast Asian goods more costly relative to Japanese, depressing exports, and so on. Or, it may be that the problem was overinvestment in manufacturing capacity, triggering deflation in prices of commodities and goods.

Whatever the assigned cause, the financial shocks do not generate the crisis, and are in themselves relatively unimportant. The best known analysis of this kind is Friedman and Schwartz's argument, made in the early 1960s against the prevailing opinion of the time, that the depression of the 1930s was not caused by financial shocks from the banking and stock markets, but by the monetary policy response.<sup>7</sup> The policy prescriptions flowing from this analysis tend to be laissez-faire — private markets are seen as better judges than government about how much risk to take on or the appropriate prices for financial assets. Volatile financial markets represent the process of adjusting to new information about firms and the economy: markets will stabilize themselves when a new equilibrium price is reached. Let government maintain price stability and enforce private contracts and it will do more to foster financial stability than by worrying about systemic risk.

The counter argument, in the Asian case and elsewhere, is that financial crises often seem to be grossly out of proportion to the fundamental problem said to be the cause: an exchange rate imbalance, for example, need not (and does not always) cause widespread financial devastation. The second and third types of analysis, therefore, focus on the financial system itself as the source of the crisis.

The second view is that markets can become unstable because of factors that cause bias in investment decisions. After the crisis, the Asian markets were said to be in the grips of "crony capitalism," where loans were made on the basis of family

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<sup>6</sup> For more information on the Asian crisis, see CRS Report RL30012, *Global Financial Turmoil: Contagion, Effects, and Policy Responses*, by (name redacted).

<sup>7</sup> Friedman, Milton, and Anna Schwartz. *Monetary History of the United States, 1867-1960*. New York, National Bureau of Economic Research, 1963.



or political connections rather than where the return was likely to be highest. In addition, both private and public accounting and disclosure systems were said to be inadequate, so that investors were not aware of problems in institutions and markets until too late. There were also accusations that hedge funds and other speculators were engaged in market manipulation, driving currency prices below their fundamental values.

Solutions for problems of this type are well known, and are among the basic features of U.S. market regulation. Keep investment decisions in the hands of those who stand to lose if the investment goes bad; require institutions and market participants to disclose certain financial data to regulators or the public (“transparency”); and maintain a system of trading rules and market surveillance to deter manipulation.

These steps certainly contribute to market transparency and efficiency, but in the third view, they do not guarantee stability. That is, markets even in the state of perfect competition experience occasional bouts of instability. These occur because investors are not always rational, but sometimes subject to what is variously described as animal spirits, the herd instinct, irrational exuberance, or “lemming-like” behavior. This irrationality may manifest itself in asset price bubbles (where fundamental values and history are disregarded and investors act as though prices will rise forever), which eventually end in panic which takes the form of a rush for the exits. In this view, financial crisis is driven by internal market dynamics and there is little point in seeking an exogenous cause: any random event may trigger the crisis. When the panic is on, the fundamentals do not matter.

In the Asian context, this view suggests why the crisis appeared in virtually identical form in countries with quite different economic conditions and regulatory structures. It supports the idea of financial contagion as a source of systemic risk: trouble here may undermine confidence over there, and so on.

This view of markets, which sees instability as a result of human nature, lends support to a regulatory focus on crisis management and containment, such as the function of lender of last resort. Most regulators subscribe to this view in practice, if not in theory. However, it is offensive to many economists of the first group, who believe that explanations based on economic fundamentals can account for even the most extreme instances of financial volatility. It also challenges a fundamental axiom of market economics, that individuals can be counted upon to act rationally in their own self-interest. The concept of contagion, for instance, suggests that investors are unable to distinguish between sound and failing institutions or firms.

Two statements, made in different places, may be combined to form an exchange illustrating this basic division. Merton Miller, a Nobel-prizewinning student of markets, in mock exasperation with regulators obsessed with vague concepts of systemic risk, said: “I wish they would stop crying and tell us *exactly* what is bothering them.”<sup>8</sup> From the regulatory perspective, here is E. Gerald Corrigan,

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<sup>8</sup> Miller, Merton. *Merton Miller on Derivatives*. New York, John Wiley and Sons, 1997.  
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former president of the Federal Reserve Bank of New York, replying to a question about how to tell a crisis from a movement of market prices: “You’ll know it when you see it.”<sup>9</sup>

In other words, even though systemic risk cannot be modeled to the satisfaction of many academic economists, regulators are not prepared to discount it.<sup>10</sup> Judging by the report of the President’s Working Group on Financial Markets, the LTCM incident has not changed their minds.

## **How LTCM Created Systemic Risk: The Working Group’s Report**

### **LTCM’s Strategy and Market Positions**

Details on LTCM’s investment strategy and the contents of its portfolio have not been made public. Nevertheless, the broad outlines of its market positions and problems have appeared in the press and are included in the Working Group’s report.

LTCM’s core strategy was convergence trading. This means it analyzed price relationships between different types of securities and took positions when those relationships diverged from their historical patterns, expecting to profit when prices returned to normal. After the Asian turmoil in 1997, the price of U.S. Government bonds was high relative to other bonds: LTCM bet, in effect, that the price spreads between Treasuries and other bonds would narrow as markets settled down. Instead, with the Russian default, demand for Treasuries grew, the spread widened, and LTCM’s strategy became extremely unprofitable.

In the spring of 1998, LTCM’s basic capital — the equity of its investors — was about \$3.5 billion. Using various forms of leverage, it was able to take a much larger market position. With short sales and repurchase agreements,<sup>11</sup> LTCM amassed a

<sup>8</sup> (...continued)  
p. 35.

<sup>9</sup> Remarks of E. Gerald Corrigan in: Federal Reserve Bank of Kansas City. *Maintaining Financial Stability in a Global Economy*. A Symposium, August 28-30, 1997. p. 35.

<sup>10</sup> The academics can explain this, of course. Regulators can make two kinds of errors in capital regulation: they can set prudential requirements either too high or too low. In the first case, the cost of capital will be a little higher than it should be, but the effects will be spread over the whole economy and hardly visible. But if regulation is too lenient and a major institution fails, the regulators themselves will be front-page news. Naturally, they prefer to err on the side of caution.

<sup>11</sup> A short seller sells securities it has borrowed, in hope that it will be able to replace them at a lower cost if the market price falls. In a repurchase agreements, a security owner sells the security with a commitment to buy a security back from the purchaser at a specified price at a designated future date. In the meantime, the seller can use the proceeds of the sale to buy more securities. Also called a repo, it represents a collateralized short-term loan, where the

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securities position of about \$100 billion. In addition, it took positions in futures markets valued at about \$500 billion, which gave it about 5% of the total market in some U.S. futures contracts. Finally, LTCM had over-the-counter derivatives contracts (swaps, forwards, and options) with a value of about \$750 billion.<sup>12</sup> Even without the futures and derivatives positions, then, the leverage ratio of LTCM's portfolio was about 30:1 — 30 dollars borrowed for every dollar contributed by investors. Even though the securities it held — 80% of them were government bonds of G-7 nations<sup>13</sup> — were not risky in themselves, the degree of leverage employed meant that even a relatively small percentage decline in the value of the total portfolio could wipe out LTCM's capital base.

LTCM's total position was extremely complex, involving over 60,000 individual trades. Derivatives and futures were employed to manage risk: LTCM's portfolio was designed to be “market-neutral,” to show a profit whether the overall market went up or down, as long as the price relationships converged on their historical norms. However, market conditions following the Russian default in the summer of 1998 overwhelmed its hedging strategies: risks that it thought were hedged, or mutually offsetting, turned out to be correlated. LTCM lost money on both sides of its trades and the firm's capital was reduced to a few hundred million dollars by the time of the rescue.

### **The Systemic Risk Scenario**

Why was an LTCM default viewed by the Fed as a threat to the financial system at large, rather than just to the institutions and investors directly involved with the hedge fund? The report discusses the risks that accompany the failure of any highly-leveraged institution.<sup>14</sup> Such institutions, in accumulating leverage, in effect assume risk from other market participants. When they fail, those risks are discharged back into the market. Therefore, highly-leveraged institutions have the potential to exacerbate instability in the market as a whole.

There are direct and indirect effects of such an institution's failure. The direct effects are losses to lenders, trading partners, and derivatives counterparties. More serious are the indirect effects: losses to other market participants through price changes caused by the disappearance of investors willing to assume higher risk. How do these indirect effects occur?

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<sup>11</sup> (...continued)

collateral may be a Treasury security, money market instrument, federal agency security, or mortgage-backed security. .

<sup>12</sup> This figure, like the figure for futures contracts, is a *notional* one. LTCM's derivatives positions were, in effect, an imaginary portfolio valued at over a trillion dollars. Changes in the value of that portfolio were payable in real money. For basic information on OTC derivatives, see CRS Report RS20077, *Derivatives: Risk and Regulation*, by (name redacted).

<sup>13</sup> The United States, Canada, Germany, France, the UK, Italy, and Japan.

<sup>14</sup> *Working Group Report*, Section II.

The failure of a highly-leveraged institution will often be followed by a disorderly liquidation of assets to satisfy the claims of creditors. Markets may already be under stress, as they were in the LTCM case, so this liquidation will very likely be a “fire sale” at depressed prices. If volatility and price declines are exacerbated, the ability of market participants to judge credit risk will be impaired. Uncertainty about credit standing will begin with those firms believed to have links to the failed institution but may not stop there. There may follow a general disruption of the intermediation of credit — the market will not be able bring borrowers and lenders together. The final result will be to heighten the risk of a contraction in economic activity.

### **Excessive Leverage: Policy Implications**

In the Working Group’s analysis, LTCM posed a systemic threat not because of any feature unique to hedge funds, but because it was highly leveraged. Other highly leveraged institutions include some commercial banks and securities firms. The failure of one of these could likewise pose systemic risk, particularly since they trade heavily with each other. The key question addressed by the report is how excessive leverage can be constrained. In the answer lie the major policy prescriptions of the report.

The principal constraint on excessive leverage must be market discipline. In normal times, market discipline is an effective check on excessive risk-taking. First, banks and securities firms have the incentive and the capability to use a variety of risk management tools to protect themselves. They should be able to measure the risk of their own trading activities — and that of firms to whom they supply credit — so that they can survive a market reverse. Second, shareholders of these institutions (and hedge fund customers) can exert pressure if they believe a firm has taken on too much risk. Third, hedge funds and other risk-takers cannot get leverage without using the credit and clearing services of the banks and brokerages that are at the center of derivatives and securities markets.

Why did market discipline fail to operate in the LTCM case? The report notes several reasons. LTCM, as noted above, had a stellar cast of managers and was highly profitable during its first years of operation. Banks and securities firms judged it highly advantageous to do business with it and similar hedge funds: the funds were active traders, yielding significant brokerage revenues; they were willing to assume risks that banks and brokerages wished to lay off; and banks and brokerages may have sought to follow the hedge funds’ trading strategies. As a result, LTCM’s creditors and counterparties were willing to lend more with less disclosure from the hedge fund than was customary, and the collateral and margin arrangements that protect lenders and counterparties were relaxed. In effect, the report notes, “the main limitation of LTCM’s scale and leverage was that provided by its own managers and principals.”<sup>15</sup>

According to the report, similar relaxations of market discipline can be expected to recur. “History tells us that creditors, counterparties, and investors from time to

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<sup>15</sup> *Working Group Report*, Section I (C).

time misjudge their risks, and that sometimes they become complacent in their risk assessments in an attempt to achieve higher returns.”<sup>16</sup>

Another major problem is the measurement of risk. Highly-leveraged institutions that trade actively depend on complex computer models to gauge the overall risks of their positions. These models generally base the probability of a large loss on historical market behavior, but in the wake of LTCM it is not clear that firms can anticipate how all the components of their portfolios will behave in turbulent markets. LTCM, as noted, had 60,000 trades on its books — it expected that the risk correlation of these many positions was relatively low, that when some lost value, others would gain. The fund’s actual experience suggests that many global portfolios of large institutions may in certain conditions be less diversified than the models predict.

Banking regulators in recent years have placed growing reliance on banks’ internal risk models to calculate the amount of capital reserves an institution should hold against the possibility of loan or trading losses.<sup>17</sup> If these models are less robust than assumed, it means that institutions may be more risky than regulators believe.

However, the breakdown in market discipline in the LTCM case does not lead the regulators in the Working Group to set aside their conclusion that market discipline, rather than government policy, is the main defense against excessive leverage and systemic risk. If financial institutions are required by regulation to set aside enough capital to ensure their survival even in rare periods of extremely volatile market, the result would be to disrupt trading and financial intermediation that support the financing of the economy.

The report also notes that the innovations in risk management techniques, such as derivative instruments that allow risks to be “unbundled” and transferred to willing counterparties have “most likely lowered the financing costs borne by the real sectors of the economy.”<sup>18</sup> The tradeoff, of course, is that the risk shed by nonfinancial businesses and others must be assumed by someone, very likely a highly-leveraged hedge fund, bank, or brokerage, whose financial condition may thereby become more fragile.

Finally, the Working Group does not discuss directly the circumstances under which the government ought to intervene in the markets as lender of last resort. But the general tenor of the report is that the LTCM rescue was fully justified. As a theoretical basis for such intervention, the report offers this observation: “no firm has an incentive to limit its risk taking to reduce the danger of contagion to other firms.”<sup>19</sup> In other words, there is a social cost to private risk taking that only government can meet.

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<sup>16</sup> Ibid., Section III.

<sup>17</sup> See: General Accounting Office. *Risk-Based Capital: Regulatory and Industry Approaches to Capital and Risk*. GAO/GGD-98-153. July 1998. 186 p.

<sup>18</sup> *Working Group Report*, Appendix A, Section 3.

<sup>19</sup> Ibid., Section III.

## Specific Recommendations

The specific recommendations put forward by the Working Group's report are the following:

- **Improved disclosure by hedge funds.** Hedge funds that now report to the CFTC as commodity pool operators should report quarterly, rather than annually. The reports should include estimates of the total value at risk in the fund's positions — including stress testing for worst-case scenarios. The reports should be available to the public. An alternative means for disclosure should be developed for hedge funds not reporting to the CFTC. (This would require legislative action.)
- **Disclosure of exposure to hedge funds.** Publicly-traded firms (that report to the SEC) should include with their quarterly and annual reports a statement of their credit exposure to hedge funds and other highly-leveraged institutions.
- **Risk measurement.** International financial supervisors should develop a meaningful measure of the future credit exposure implicit in a present leveraged position. Regulators should also encourage improvement in the internal risk measurement systems of private institutions.
- **Risk assessment authority.** The Congress should enact greater authority for the CFTC and the SEC to oversee risk in affiliates of regulated broker/dealers and futures commission merchants. Specifically, the regulators would like the authority to require more detailed reporting from affiliates and to review risk management controls at the holding company level.
- **Offshore financial centers.** Regulators should consider creating stronger incentives for offshore financial centers to comply with international capital, accounting, and other financial standards.

## Conclusion

The Working Group's report began as an investigation into the risks posed by hedge funds, but took an unexpected turn. It concludes that LTCM posed a threat to financial stability not because it was a hedge fund — unregulated, secretive, and prone to high-risk speculation — but because it was a highly-leveraged institution, a classification that includes many large banks and securities firms. This is a new way of looking at financial markets.

Classic financial panics often had their origins in the structure of banking balance sheets: liquid liabilities versus illiquid assets. Banks' assets are long-term loans, while their liabilities are short-term deposits. If enough depositors demand their money at any one time, the bank is in trouble, and depositors know this. Historically, if one bank failed, others were liable to runs even though their financial condition was fundamentally sound. Deposit insurance has made bank runs rare in the United States.

Securities firms, on the other hand, have not traditionally been viewed as sources of financial contagion. Their assets are primarily marketable securities, which can be sold as needed to meet liabilities. Thus, even very large securities firms — such as Drexel Burnham Lambert in the late 1980s — have been allowed to fail without systemic repercussions.

Why does the Working Group now lump banks and securities firms together as potential sources of systemic risk? As markets have evolved, both types of institutions now rely more on proprietary trading as a source of profits — they act as principals rather than as intermediaries. A greater change is that both are represented among the major dealers in the over-the-counter derivatives market. Derivatives allow users — financial institutions, corporations, and governments — to limit financial risk, but that risk may then be concentrated among two dozen or so dealers, the commercial and investment banks that account for over 90% of a global \$70 trillion market. Since there is no ready market for many derivatives contracts, dealers' assets have become less liquid, like bank loans in the old days. Dealers seek to limit their risk exposure by assuming offsetting risks, but in extreme market conditions, the correlation of those risks may not act as expected.

What is the systemic risk scenario implied here? A number of factors could combine to set off a widespread financial panic that could threaten the real economy. These include:

- the possibility of a major bank or securities firm taking on excessive leverage in support of its derivatives and proprietary trading positions;
- the interdependence of large financial institutions;
- the historical tendency of market participants to become complacent about risk; and
- the globalization of financial markets and the mobility of capital, which mean that a disturbance in one national market is more likely than in the past to be transmitted to others.

Is this an alarmist vision, a “fabrication of overheated imaginations of academics and regulators?”<sup>20</sup> To regulators, the probability may be small, but the economic damage that might result is potentially severe enough to justify attention to systemic risk concerns. However, given the lack of consensus about the nature and seriousness of systemic risks, and the acknowledged costs of over-regulation, no elegant solution is likely to be found. Instead, regulators will press for the kind of incremental improvements in government oversight and private market practices that are recommended by the Working Group's report.

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<sup>20</sup> Schwartz, Anna. *Systemic Risk and the Macroeconomy*. Presented at a conference sponsored by the Office of the Comptroller of the Currency, Washington DC, December 2, 1994. p. 2.

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