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Long-Term Capital Management: A Retrospective—Part II

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This article provides a retrospective on the occasion of the twentieth anniversary of the near failure of Long-Term Capital Management in September 1998. It highlights elements of the Long-Term Capital Management story that provided warnings of some of the forces that would contribute to the near collapse of the U.S. financial system in September 2008. It also discusses the regulatory responses to the Long-Term Capital Management episode.

The announcement of the private sector rescue of Long-Term Capital Management ("LTCM") on September 23, 1998 produced immediate calls for study of the events leading up to the rescue and the implications of the rescue for the operation of the U.S. financial system. Two days after the announcement of the rescue, Secretary of the Treasury Robert Rubin announced that the President's Working Group on Financial Markets (the "President's Working Group") would undertake a study of the LTCM episode and its implications for the hedge fund industry. The President's Working Group published its report in April 1999.[110] Congress held a series of hearings in 1998 and 1999 to examine the LTCM episode and its fallout. The first hearing occurred a week after the announcement of the LTCM rescue.[111] Several members of Congress also called on the United States General Accounting Office (the "GAO") to prepare its own report on the LTCM episode. The GAO released its report in October 1999.[112]

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Footnotes are continued from Part I of this article, which appeared in the September 2018 issue of *The Banking Law Journal.*

[110] THE PRESIDENT'S WORKING GROUP ON FINANCIAL MARKETS, HEDGE FUNDS, LEVERAGE, AND THE LESSONS OF LONG-TERM CAPITAL MANAGEMENT (1999) [hereinafter PWG REPORT ON LTCM].

[111] *Hedge Fund Operations: Hearing Before the H. Comm. on Banking & Financial Services,* 105th Cong. (1998).

[112] U.S. GENERAL ACCOUNTING OFFICE, GAO/GGD-00-3, LONG-TERM CAPITAL MANAGEMENT: REGULATORS NEED TO FOCUS GREATER ATTENTION ON SYSTEMIC RISK (Oct. 1999) [hereinafter GAO REPORT ON LTCM].

Signaling the global interest in the LTCM episode, the Basle Committee on Banking Supervision (the "Basle Committee") released two reports in January 1999 relating to banks' interactions with highly leveraged institutions ("HLIs") like LTCM.[113] In January and February 1999, the Office of the Comptroller of the Currency (the "OCC") and the Federal Reserve Board issued supervisory guidance to their regulated banking entities.[114] Also in January 1999, a group of 12 of the largest internationally active commercial and investment banks announced the formation of the Counterparty Risk Management Policy Group (the "CRMPG").[115] The objective of the CRMPG was to promote enhanced practices in counterparty credit and market risk management by financial intermediaries. The CRMPG issued a detailed report on improving counterparty risk management practices in June 1999, addressing important parts of the legacy of the LTCM episode.[116] The CRMPG issued subsequent reports in 2005 and 2008, addressing newly emerging problems in the trading markets, such as those relating to credit default swaps.[117] Finally, the President's Working Group issued a report in November 1999, addressing the over-the-counter ("OTC") derivatives markets.[118] Although the report stood in the shadows of the LTCM episode, it made only glancing references to the President's Working Group Report on LTCM. It focused on the legal status of OTC derivatives and related concerns under the Commodity Exchange Act (the "CEA"), and not on the risk management issues or the systemic risk issues that the LTCM episode appeared to raise. Its most important recommendation was that OTC derivatives should not be made subject to regulation under the CEA.

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[113] BASLE COMMITTEE ON BANKING SUPERVISION, BANKS' INTERACTIONS WITH HIGHLY LEVERAGED INSTITUTIONS (Jan. 1999) [hereinafter BASLE COMMITTEE REPORT ON BANKS' INTERACTIONS WITH HLIs]; BASLE COMMITTEE ON BANKING SUPERVISION, SOUND PRACTICES FOR BANKS' INTERACTIONS WITH HIGHLY LEVERAGED INSTITUTIONS (Jan. 1999) [hereinafter BASLE COMMITTEE REPORT ON SOUND PRACTICES].

[114] *OCC Bulletin 1999-2: Risk Management of Financial Derivatives and Bank Trading Activities—Supplemental Guidance* (Jan. 25, 1999) [hereinafter OCC Bulletin 1999-2]; *Federal Reserve Board Div. of Banking and Supervision, SR 99-3 (SUP): Supervisory Guidance Regarding Counterparty Credit Risk Management* (Feb. 1, 1999) [hereinafter SR 99-3].

[115] *See* COUNTERPARTY RISK MANAGEMENT POLICY GROUP, IMPROVING COUNTERPARTY RISK MANAGEMENT PRACTICES (June 1999) [hereinafter CRMPG REPORT].

[116] *Id.*

[117] COUNTERPARTY RISK MANAGEMENT POLICY GROUP, TOWARD GREATER FINANCIAL STABILITY: A PRIVATE SECTOR PERSPECTIVE (July 27, 2005); COUNTERPARTY RISK MANAGEMENT POLICY GROUP, CONTAINING SYSTEMIC RISK: THE ROAD TO REFORM (Aug. 6, 2008).

[118] The PRESIDENT'S WORKING GROUP ON FINANCIAL MARKETS, OVER-THE-COUNTER DERIVATIVES MARKETS AND THE COMMODITY EXCHANGE ACT (1999) [hereinafter PWG REPORT ON OTC DERIVATIVES].

This Part of the article analyzes the conclusions and recommendations of these various reports. The focus of the analysis in this Part is both retrospective, *i.e.*, how these reports addressed or failed to address the problems evidenced by the LTCM episode, and prospective, *i.e.*, how these reports anticipated or failed to anticipate the recurrence of similar problems in the buildup to the financial crises in 2008.

INITIAL SUPERVISORY RESPONSE

The initial supervisory response to the LTCM episode took the form of targeted reviews conducted during the fourth quarter of 1998 by the Federal Reserve Board and the OCC of a number of large banks with hedge fund exposures.[119] The results of these reviews were incorporated into supervisory guidance issued by the Federal Reserve Board and the OCC for their regulated entities in January and February of 1999.[120] The findings of these targeted reviews also served as the primary source for two reports on HLIs issued by the Basle Committee in January 1999.[121] It was no coincidence that William J. McDonough, President of the Federal Reserve Bank of New York, was at that time also serving as the Chairman of the Basle Committee and that senior officials from the Federal Reserve Board, the Federal Reserve Bank of New York, and the OCC were important members of the working group at the Basle Committee that prepared the two reports.[122] The Basle Committee afforded the U.S. supervisors a global platform to address the risks highlighted by the LTCM episode. The LTCM episode would in any event have been of interest to the Basle Committee because nearly half of the consortium members for the LTCM rescue were internationally active foreign banks, and one such foreign bank, Union Bank of Switzerland, suffered the largest aggregate loss from the

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[119] *See The Operations of Hedge Funds and Their Role in the Financial System: Hearing Before the Subcomm. on Capital Markets, Securities & Government Sponsored Enterprises of the H. Comm. on Banking & Financial Services*, 106th Cong. 5 (1999) (statement of William J. McDonough, President, Federal Reserve Bank of New York).

[120] *See* OCC Bulletin 1999-2, *supra* note 114, and SR 99-3, *supra* note 114.

[121] *See* BASLE COMMITTEE REPORT ON BANKS' INTERACTIONS WITH HLIs and BASLE COMMITTEE REPORT ON SOUND PRACTICES, *supra* note 113. For purposes of these reports, the Basle Committee used a working definition of HLIs as large financial institutions that have the following characteristics: (i) they are subject to little or no direct regulatory oversight; (ii) they are subject to limited disclosure requirements; and (iii) they take on significant leverage. *See* Press Release, Banks' Interactions with Highly Leveraged Institutions (Jan. 28, 1999), https://www.bis.org/press/p990128.htm.

[122] *See id.*

LTCM episode because of its exposure on a bespoke warrant transaction with the management of LTCM.[123]

In Congressional testimony on the supervisory response to the LTCM episode in March 1999, President McDonough emphasized the importance of the Basle Committee reports.[124] He noted that while the Basle Committee does not have formal rulemaking power, its recommendations are widely implemented by supervisors in leading jurisdictions. He also noted that because the Basle Committee's jurisdiction is limited to matters of banking supervision, the primary focus in its review of LTCM and other HLIs had been in ensuring that banking institutions prudently manage their exposures to HLIs. He said that the best way to achieve that was through the adoption of sound risk management processes by the banking industry.[125]

The Basle Committee Report on Banks' Interactions with HLIs discussed a number of deficiencies in the credit and risk management processes that were identified through the targeted review of banks with hedge fund exposure. Among the deficiencies was too great a reliance on collateral, which caused banks to neglect other critical elements of credit risk management, such as in-depth credit analysis of counterparties, effective exposure measurement, and

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[123] *See* NICHOLAS DUNBAR, INVENTING MONEY: THE STORY OF LONG-TERM CAPITAL MANAGEMENT AND THE LEGENDS BEHIND IT 232 (2001).

[124] *Bank Lending To and Other Transactions With Hedge Funds: Hearing Before the Subcomm. on Financial Institutions & Consumer Credit of the H. Comm. on Banking & Financial Services*, 106th Cong. 10 (1999) [hereinafter *Hearing on Bank Lending to Hedge Funds*] (statement of William J. McDonough, President, Federal Reserve Bank of New York).

[125] *Id.* The Basle Committee also considered the desirability and feasibility of direct regulation of HLIs, but concluded that an assessment of the costs, benefits and effectiveness of direct measures would require a comprehensive review of the potential impact on the financial markets and that developing such a regulatory approach would extend beyond the competence of the bank supervisors and require a political initiative. Thus, the recommendations in the two Basle Committee reports relate only to encouraging better risk management by banks in their dealings with HLIs. Shortly after the issuance of the Basle Committee reports, the International Organization of Securities Commissions ("IOSCO") announced that it would investigate the dealings by securities firms with hedge funds and the ways in which risk management by securities firms could be improved to complement the work done by the Basle Committee with respect to banks. A technical committee of IOSCO issued a report on hedge funds and other highly leveraged institutions in November 1999, paralleling the reports issued by the Basle Committee and seeking to coordinate the oversight activities of securities regulators with those of banking regulators. *See* Press Release, International Association of Securities Commissions, Hedge Funds and Other Highly Leveraged Institutions (Nov. 9, 1999).

use of stress testing.[126] Another finding of the Basle Committee was that banks did not have sufficient financial information to make a full assessment of how much and what types of risks had been assumed by HLIs and that banks did not sufficiently understand the ability of HLIs to manage their own risks.[127] The targeted reviews indicated that the banks did not obtain the information needed to measure the leverage of HLIs or to understand the concentrations of exposure to particular markets and to particular risk categories at HLIs. Another finding was that banks had to develop better measures of the credit exposure from different types of trading, particularly as to potential future exposure. The inability to forecast potential future exposure meant that the collateral holdings on a trading exposure could quickly become "grossly insufficient" to cover the exposure.[128]

In his testimony, President McDonough noted that it appeared that banks generally had tightened their credit risk management standards for their HLI exposures after the near failure of LTCM, but that the supervisors had to ensure that the progress continued.[129] Thus, the Basle Committee Report on Sound Practices was intended to encourage the continued development of stronger risk management practices in handling exposures to HLIs. The Basle Committee Report on Sound Practices provided more detailed recommendations for credit and risk management processes at banks to address the shortcomings identified by the Basle Committee.[130] President McDonough offered the further view that it would not be easy to develop a workable approach for the direct oversight of hedge fund activities. He cited the problem that imposing direct regulation on hedge funds entities organized in major countries would likely result in the movement of all their operations offshore.[131] The ultimate conclusion of the Basle Committee was that rigorous enforcement of enhanced risk management practices by banking institutions should substantially contribute to limiting excessive risk-taking and leverage at HLIs.[132] President

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[126] *See Hearing on Bank Lending to Hedge Funds*, *supra* note 124, at 10 (statement of William J. Donough).

[127] *Id.* at 11.

[128] *Id.*

[129] *Id.* at 12.

[130] *See* BASLE COMMITTEE REPORT ON SOUND PRACTICES, *supra* note 113.

[131] *Hearing on Bank Lending to Hedge Funds*, *supra* note 124, at 13 (statement of William J. McDonough).

[132] BASLE COMMITTEE REPORT ON SOUND PRACTICES, *supra* note 113, at 2.

McDonough referred to this approach as an "indirect" strategy, but one that he was reasonably confident would succeed.[133]

The guidance issued by the Federal Reserve Board on February 1, 1991 likewise built on the targeted reviews of large banks conducted after the LTCM episode.[134] The guidance document stated that the targeted reviews found varying degrees of potential weaknesses in the counterparty policies, practices and internal controls at some banking institutions. It observed that a "confluence of competitive pressures, pursuit of earnings, and over-reliance on customer reputation *may* have led to substantive lapses in fundamental risk management principles."[135] The authors of the guidance need not have been so tentative in their conclusion.

Testifying on the Federal Reserve Board guidance in March 1999, Federal Reserve Board Governor Laurence H. Meyer said that the primary issues raised by the LTCM episode appeared to revolve around the question of how to control leverage and risk taking in unregulated financial institutions such as hedge funds so that they do not become a source of systemic risk.[136] Echoing the sentiments in Chairman Alan Greenspan's testimony in the October 1998 House hearing on LTCM, Governor Meyer stated that "[i]n our market-based economy, the discipline provided by creditors and counterparties is the primary mechanism for 'regulating' this risk taking" and that "promot[ing] market discipline by strengthening the risk management systems of creditors and counterparties offers the most immediate and efficient way to achieve the desired objective of minimizing the potential for systemic risk arising from the activities of hedge funds."[137] Governor Meyer cited the issuance of guidance by the Basle Committee, the Federal Reserve Board, and the OCC as significant steps in achieving the goal of enhanced market discipline and as "an effective, quick, and needed response" to the LTCM event.[138] But he also looked forward to the prospective industry report from the CRMPG to provide even more detailed advice and additional tools for implementing sound counterparty credit risk management practices. The supervisors were in effect encouraging the banks and securities firms as counterparties to take a strong lead in establishing their own best practices.

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[133] *Hearing on Bank Lending to Hedge Funds*, *supra* note 124, at 13.

[134] SR 99-3, *supra* note 114, Attachment I at 2.

[135] *Id.* (emphasis added).

[136] *Hearing on Bank Lending to Hedge Funds*, *supra* note 124, at 107 (statement of Laurence H. Meyer, member of Board of Governors of Federal Reserve System).

[137] *Id.* at 107–108.

[138] *Id.* at 121.

Of the supervisory guidance documents issued by the Basle Committee, the Federal Reserve Board and the OCC, the document issued by the OCC was the most prescriptive. It was also the most expansive. It applied broadly to the risk management of financial derivatives and other bank trading activities, including, but not limited to, transactions with hedge funds and other highly leveraged institutions. In this respect the OCC guidance document was broader than the Basle guidance documents, which focused specifically on counterparty risk management for banks with credit exposures to HLIs.[139] The OCC's guidance applied to all derivatives and trading activities, regardless of whether the bank was engaged in hedge fund-related business, but it also included specific guidance based on the LTCM experience. The scope of the OCC guidance was broader than just credit risk because the guidance was intended to address the risk management deficiencies noted in areas that presented greater financial exposure than those related solely to hedge funds, such as the other general market risks and trading exposures that produced significant losses to banks in 1997 and 1998.[140] The guidance was designed to aid examiners in identifying design weaknesses in bank risk management systems and to incorporate a full menu of "lessons learned" from various financial services firms over the course of the prior eighteen months.[141]

The supervisory guidance issued in the immediate aftermath of the LTCM episode was designed to respond to the lessons learned from the LTCM episode as well as from the general market disruptions in 1997 and 1998. Favorable market conditions in subsequent years, however, whetted the risk appetite of many financial institutions and led to an erosion in risk management practices at many of the institutions. The financial crisis in 2008 would again reveal fundamental risk management failures at many of the largest banks and securities firms.[142]

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[139] *Id.* at 132 (statement of Michael L. Brosnan, OCC Deputy Comptroller for Risk Evaluation).

[140] *Id.* In addition to credit risk and market risk, the OCC guidance document also covered such matters as compliance risk and transaction risk. The transaction risk category covered such problems as unconfirmed trades and unsigned master agreements and the need for independent valuation on illiquid trading positions. These problems would assume an even higher profile in subsequent years as the volume of derivative transactions grew exponentially. *See, e.g.*, COUNTERPARTY RISK MANAGEMENT POLICY GROUP, TOWARD GREATER FINANCIAL STABILITY: A PRIVATE SECTOR PERSPECTIVE iv (July 20, 2005) (discussing serious back-office and potential settlement problems in the credit default swap market).

[141] *Hearing on Bank Lending to Hedge Funds, supra* note 124, at 132 (statement of Michael L. Brosnan).

[142] *See* SENIOR SUPERVISORS GROUP, OBSERVATIONS ON RISK MANAGEMENT PRACTICES DURING THE

PRESIDENT'S WORKING GROUP REPORT ON LTCM

The President's Working Group Report on LTCM released in April 1999 was the most comprehensive public report on LTCM and its implications for the U.S. financial system. It discussed the background of LTCM's operations and the risks that ultimately led to its near failure. It also provided a general primer on hedge fund operations, together with extensive appendices discussing the legal framework applicable to hedge funds, the limited regulatory requirements applicable to hedge funds under the CEA, the supervisory requirements applicable to banks dealing with hedge funds, and the special provisions in the Bankruptcy Code applicable to derivatives. The Report contained a number of high-level recommendations derived from the LTCM experience. With the benefit of hindsight, particularly that afforded by the events of 2008, the analysis in the Report would appear to have been technically proficient, but its recommendations would prove to be functionally inert.

The Report began with the observation that the principal policy issue arising from the LTCM episode was how to constrain excessive leverage in large financial institutions.[143] The Report said that the near failure of LTCM illustrated the need for all participants in the financial system, not just hedge funds, to face constraints on the amount of leverage they assume. It observed that LTCM's leverage ratio of 25-to-1, at the beginning of 1998 even before it began to suffer its large losses, "implie[d] a great deal of risk."[144] But it also observed that other financial institutions were often larger and more highly leveraged than hedge funds. It reported that at year-end 1998, the five largest commercial bank holding companies had an average leverage ratio of 14-to-1, but that the five largest investment banks had an average leverage ratio of 27-to-1.[145] The Report nonetheless offered no specific observations on the need to constrain the high level of leverage then existing at the large investment banks. The Securities and Exchange Commission (the "SEC") subsequently may have facilitated an increase in leverage at these investment banks in 2004 when it adopted its Consolidated Supervised Entity program.[146] The Consolidated Supervised Entity initiative was later identified by certain commentators

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RECENT MARKET TURBULENCE (MARCH 2008); SENIOR SUPERVISORS GROUP, RISK MANAGEMENT LESSONS FROM THE GLOBAL BANKING CRISIS OF 2008 (OCT. 2009).

[143] PWG REPORT ON LTCM, *supra* note 110, at 1.

[144] *Id.* at 12.

[145] *Id.* at 29.

[146] *See* Alternative Net Capital Requirements for Broker-Dealers That Are Part of Consolidated Supervised Entities, 69 Fed. Reg. 34,428 (June 21, 2004).

as a significant contributing factor to the fragility of the investment banking model in the financial crisis of 2008.[147]

Reaffirming the prevailing regulatory philosophy enunciated by Chairman Greenspan in his October 1998 testimony, the Report observed that the U.S. market-based economy relied primarily on market discipline to constrain the leverage of both regulated and unregulated financial entities. However, the Report noted that, in the case of LTCM, the investors, creditors and counterparties of LTCM did not provide an effective check on its activities and that some of the same market and credit risk management weaknesses that allowed LTCM to achieve its "extraordinary" leverage were evident in other market participants, including some of the creditors and counterparties of LTCM.[148] The Report observed that in the immediate aftermath of LTCM's near collapse, credit risk management practices vis-à-vis highly leveraged institutions had been tightened, but in an observation that was at once prescient and ironic, the Report acknowledged that market history indicates that painful lessons recede from memory with time.[149] The authors of the Report presumably hoped to record the lessons of LTCM, such as the risk of excessive leverage, for posterity. Several of the painful lessons learned in the LTCM

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[147] *See, e.g.*, JAMES R. BARTH ET AL., GUARDIANS OF FINANCE: MAKING REGULATORS WORK FOR US 100 (2012) (asserting that as a result of the change in the net capital rule, "investment banks were permitted to use their own mathematical models of asset and portfolio risk to compute appropriate capital levels" and that "[t]hey responded, naturally, by issuing more debt to purchase more risky securities without putting commensurately more of their own capital at risk"); VIRAL V. ACHARYA ET AL., REGULATING WALL STREET: THE DODD-FRANK ACT AND THE NEW ARCHITECTURE OF GLOBAL FINANCE 149 (2011) (asserting that the use of internal models to set capital requirements under the 2004 amendment resulted in leverage "skyrocketing from a 22:1 debt-to-equity ratio to 33:1 within just three years"). *But see* THE FINANCIAL CRISIS INQUIRY REPORT, FINAL REPORT OF THE NATIONAL COMMISSION ON THE CAUSES OF THE FINANCIAL AND ECONOMIC CRISIS IN THE UNITED STATES 153–154 (2011):

> Leverage at the investment banks increased from 2004 to 2007, growth that some critics have blamed on the SEC's change in the net capital rules. . . . In fact, leverage had been higher at the five investment banks in the late 1990s, then dropped before increasing over the life of the CSE program—a history that suggests that the program was not solely responsible for the changes.

See also U.S. GOVERNMENT ACCOUNTABILITY OFFICE, GAO-09-739, FINANCIAL MARKETS REGULATION: FINANCIAL CRISIS HIGHLIGHTS NEED TO IMPROVE OVERSIGHT OF LEVERAGE AT FINANCIAL INSTITUTIONS AND ACROSS SYSTEM 40–41 (July 2009) (indicating that four of the five investment bank holding companies had leverage ratios equal to or greater than 28-to-1 in 1998 which was higher than their leverage ratios in 2007).

[148] PWG REPORT ON LTCM, *supra* note 110, at viii.

[149] *Id.*

episode, however, were subsequently forgotten as the memory of the LTCM episode receded.

The Report's discussion of what it characterized as the principal policy issue arising from the LTCM case, *i.e.*, how to constrain excessive leverage, may have been reasonably balanced, but it led to no actionable item. The Report concluded that requiring a uniform degree of balance sheet leverage for all classes of investors did not seem reasonable.[150] The Report further observed that a balance sheet leverage test was not in any event an adequate measure of risk and might induce additional risk taking or shifting of risk to off-balance-sheet activities.[151] The Report noted that an alternative measure to balance sheet leverage would be a ratio of potential gains or losses (such as under a value-at-risk ("VAR") approach) to net worth. It noted, however, the pitfalls of a VAR approach, such as faulty or incomplete modeling assumptions or too narrow time horizons. In fact, the LTCM experience provided compelling evidence of the limitations of relying exclusively on a VAR approach. The Report concluded that enforcing a meaningful regulatory capital requirement or leverage ratio for a wide and diverse range of investment funds would be difficult. It suggested that, at least for hedge funds, the best approach was to continue to rely on counterparty credit risk management to constrain leverage (even though it had failed conspicuously in the LTCM case).[152]

The Report also indulged in a general discussion of the credit risk management techniques available to constrain excessive leverage. The Report cited collateralization and the use of credit-risk spreads on credit exposures as alternative ways to manage credit risk. These alternatives allowed the borrower more flexibility. A borrower that could easily provide information on its creditworthiness might prefer to acquire credit on an unsecured basis because the credit-risk spread would be lower than the cost of providing collateral. The Report also observed that supervisors and regulators of banks and securities firms usually do not interfere with the private choices regarding the different approaches to managing credit risk, such as the decision whether to require collateralization by a counterparty, as long as prudential standards are satisfied (the latter qualification virtually consuming the preceding proposition).[153] The Report also cited with approval the diversity in credit risk management approaches in the use of variation margin. It observed that while variation margin can reduce credit risk, it does so at the cost of imposing higher liquidity

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[150] *Id.* at 24.

[151] *Id.*

[152] *Id.*

[153] *Id.* at 25.

risk on the counterparty. It concluded that allowing diversity in credit risk management practices can result in a more efficient financial system.[154] These observations may have been technically correct, but they were curious in the context of the Report which otherwise identified serious failures in credit risk management by virtually all the major counterparties of LTCM. It may be that the authors of the Report viewed LTCM as an anomaly rather than an example because of LTCM's unique position in the hedge fund sector.

The impression left by the Report was that it was its intent to tread lightly on the prerogatives of the private sector in choosing risk management approaches. In effect, the Report was suggesting that it was up to the private sector (with the encouragement of the regulators) to implement the necessary market discipline that was so lacking in the case of LTCM. The underlying philosophy of the Report was clear from several of its general statements, such as the observations that: "[c]ounterparty discipline can serve as an effective tool to mitigate the risks of excessive leverage" and "in our market-based economy, market discipline of risk taking is the rule and government regulation is the exception."[155]

The Report included a number of high-level recommendations, but they were not calculated to impose much discipline on marketplace participants. The first recommendation was that hedge funds should disclose additional information relating to their market risk, such as VAR results or stress test results, but without requiring the disclosure of proprietary information on strategies or positions, and that public companies should publicly disclose a summary of their direct material exposures to significantly leveraged financial institutions.[156] The Report was not more precise as to this high-level recommendation and the President's Working Group apparently never submitted its own draft of legislation to implement this recommendation. In any event, no legislation was ever adopted in response to this recommendation. The second recommendation was that regulators should encourage improvements in the risk management systems of their regulated entities.[157] The Report noted of course that the Basle Committee and the U.S. banking regulators had in January and February 1999 issued additional guidance to their regulated entities and their own examiners on counterparty credit risk, model risk, and estimating potential future credit risk. The Report endorsed the action taken by the banking regulators in issuing their guidance, but did not appear to call for further action by the banking

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[154] *Id.*

[155] *Id.* at 25–26.

[156] *Id.* at 32–33.

[157] *Id.* at 34.

regulators. It did indicate, however, that the SEC and the Commodity Futures Trading Commission (the "CFTC") should ensure that their regulated entities adopt prudential practices for their counterparty and credit relationships similar to those that the bank supervisors had adopted for their regulated entities.[158]

The third recommendation was that financial institutions as a group should draft and publish enhanced standards for their own counterparty risk management.[159] As noted above, in January 1999, a group of large commercial and investment banks, presumably in anticipation of the approach to be recommended in the Report, had organized the CRMPG with the endorsement of Secretary of the Treasury Rubin, Chairman Greenspan, and Chairman Arthur Levitt of the SEC. The purpose of the CRMPG was to promote improvements in counterparty credit and market risk management by individual private firms. The CRMPG issued its report in June 1999.[160] Among the disclaimers in the CRMPG Report was that its recommendations for industry sound practices "should not be viewed as a roadmap for new regulation or even as a mandated checklist for supervision."[161] The President's Working Group Report likewise recommended that hedge funds as a group should develop their own set of sound practices for hedge fund risk management.[162] A group of hedge fund managers published the first edition of Sound Practices for Hedge Fund Managers in 2000. The Managed Funds Association, a trade group for hedge funds, published updated and expanded versions of a sound practices document in subsequent years.[163] Reliance on private sector initiatives rather than government regulation would become the hallmark of subsequent reports from the President's Working Group.[164]

The fourth recommendation was that prudential supervisors and regulators should promote the development of more "risk sensitive" approaches to capital adequacy.[165] The Report specifically cited the work already underway at the Basle Committee to make capital treatment for derivatives more sensitive to

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[158] *Id.* at 34.

[159] *Id.* at 35.

[160] *See* CRMPG REPORT, *supra* note 115.

[161] *Id.* at 2.

[162] PWG REPORT ON LTCM, *supra* note 110, at 37.

[163] *See, e.g.*, News Release, Managed Funds Association, Managed Funds Association Leaders Call for Improved Sound Practices by Hedge Fund Managers (Nov. 5, 2007).

[164] *See, e.g.*, Press Release, U.S. Dep't of the Treasury, PWG Private-Sector Committees Release Best Practices for Hedge Fund Participants (April 15, 2008), https://www.treasury.gov/press-center/press-releases/pages/hp927.aspx.

[165] PWG REPORT ON LTCM, *supra* note 110, at 37-38.

both credit risk and market risk for banking institutions. The Report said that VAR and other risk models should be subject to validation and back-testing to confirm the reliability of the results. The Report also said that the SEC should explore more risk sensitive approaches to capital for securities firms building on its experience with its "broker-dealer lite" approach to capital for derivative affiliates of broker-dealers.[166] In a qualification that would later take on unexpected significance, the Report said that "it is not the intent of this recommendation that capital requirements for broker-dealers should be reduced."[167] It may not have been the intent, but ultimately it was the result.

The President's Working Group Report contained no recommendations for general regulatory oversight of the OTC derivatives markets. The only related regulatory recommendation in the Report was that the authority of the SEC and the CFTC to require information on the unregulated affiliates of broker-dealers and futures commission merchants ("FCMs") (where OTC derivative activities were generally conducted) should be enhanced.[168] As part of the enhanced authority, the SEC, the CFTC and the Treasury should be authorized to require broker-dealers, FCMs and their unregulated affiliates to report credit-risk information by counterparty as well as data on concentrations, trading strategies and risk models. No legislation was ever adopted to implement this recommendation.

The only other legislative recommendation in the Report was that Congress should amend the Bankruptcy Code to expand the ability of counterparties to net exposures on derivatives and to protect the ability of a counterparty to exercise immediate liquidation rights on collateral in the event of a bankruptcy filing by a hedge fund in a foreign jurisdiction. Legislation covering these points was already pending in Congress at the time that the President's Working

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[166] *Id.* at 38. In November 1998, the SEC adopted a so-called "broker-dealer lite" rule to provide for tailored capital, margin and other broker-dealer regulatory requirements for a class of broker-dealers called OTC derivative dealers. Registration as an OTC derivatives dealer under the SEC rule was optional and was an alternative to registration as a broker-dealer under the traditional broker-dealer regulatory structure. It was available only to entities that engaged in dealer activities in eligible OTC derivative instruments and that met certain financial responsibility and other requirements. The rule allowed OTC derivative dealers to use VAR models to calculate their net capital requirements. *See* OTC Derivative Dealers, 63 Fed. Reg. 59362 (Nov. 3, 1998). At the time of the issuance of the PWG Report on LTCM, only one firm had chosen to register its unregistered derivatives affiliate as an OTC derivatives dealer with the SEC. *See* GAO REPORT ON LTCM, *supra* note 112, at 29 n.43.

[167] PWG REPORT ON LTCM, *supra* note 110, at 38.

[168] *Id.* at 38–40.

Group issued its report. These points were eventually included in Bankruptcy Code reform legislation enacted in 2005.[169]

The generally supine character of the recommendations in the Report is perhaps best captured in this statement from the Report:

> The Working Group will be monitoring and assessing the effectiveness of the measures outlined above. If further evidence emerges that indirect regulation of currently unregulated market participants is not effective in constraining excessive leverage, there are several matters that could be given further consideration; however, the Working Group is not recommending any of them at this time.[170]

The additional steps cited in the Report included consolidated supervision of broker-dealers and their unregulated affiliates, direct regulation of hedge funds, and direct regulation of derivative dealers unaffiliated with federally regulated entities.[171] The Report mentioned these steps merely as theoretical options with virtually no substantive discussion.

The recommendations of the President's Working Group Report were in fact modest. They were met, however, with an antiphonal chorus of praise from the members of the House Committee on Banking and Financial Services. The Chairman of the Committee commended the President's Working Group for producing a report that was "thoughtful" and "appropriately moderate" and that "realistically relies on the private sector, with only modest public help to police itself."[172] Other members of the Committee applauded the Report as "well balanced," "informative," "thorough" and "unanimous in nearly all respects," and as a "great contribution" to the discussion.[173] The members of the Committee appeared to have been imbued with a *fin de siècle* sentiment in favor of "light touch" regulation. Other observers were not as generous in their estimation of the Report. Invoking a phrase that would subsequently acquire a

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[169] *See* Bankruptcy Abuse Prevention and Consumer Protection Act of 2005, Pub. L. No. 109-8, 119 Stat. 23. For a discussion of how the changes to the Bankruptcy Code made by this legislation responded to certain of the concerns identified in the LTCM episode, see Rhett G. Campbell, *Financial Markets Contracts and BAPCPA*, 79 AM. BANKR. L.J. 697 (2005).

[170] PWG REPORT ON LTCM, *supra* note 110, at ix.

[171] *Id.* at 42.

[172] *The President's Working Group Study on Hedge Funds: Hearing Before the H. Comm. on Banking & Financial Services*, 106th Cong. 2 (1999) [hereinafter *Hearing on President's Working Group Study*] (statement of Rep. James Leach).

[173] *Id.* at 2 ("unanimous") (statement of Rep. John LaFalce), 5 ("great contribution") (statement of Rep. Marge Roukema) & 8 ("well balanced," "informative" and "thorough") (statement of Rep. Spencer Bachus).

much greater currency, Merton Miller, a Nobel laureate in economics, described the Report as a "nothing burger."[174] He said of the Report: "I haven't seen one serious suggestion for legislative change."[175] In fact, aside from the Bankruptcy Code amendments to enhance close-out netting on derivative contracts and to address foreign insolvency proceedings, no other legislative reforms were enacted in response to the Report.

CRMPG REPORT

The work of the CRMPG represented a leading example of a self-improvement project led by an industry group. The President's Working Group Report on LTCM endorsed the objective of the CRMPG to develop standards for strengthened risk management practices at securities firms and banks that provide credit-based services to major counterparties such as hedge funds.[176] The CRMPG Report issued in June 1999 was comprehensive and detailed. The purpose of the CRMPG Report was to promote "enhanced strong practices" for counterparty risk management, which was to be achieved by

> building on the self-improvement efforts being undertaken by individual firms in the immediate aftermath of last year's severe market disruptions, by extending the efforts through collective evaluation of potential new strong practices, by evaluating and proposing improvements in market-wide practices and conventions, and by compiling information on new strong practices and, where appropriate, sharing such information with regulators.[177]

But as noted earlier, the CRMPG Report also stated that its recommendations "should not be viewed as a roadmap for new regulation or even as a mandated checklist for supervision."[178]

The CRMPG Report was organized into four parts. The first part covered recommendations to improve the effectiveness and transparency of counterparty risk assessments done by large participants in the derivatives and other trading markets. The second part covered recommendations for improving elements of internal risk measurement, management and information flows for better risk awareness and decision-making within a firm. The third part covered

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[174] John Cassidy, *Time Bomb*, THE NEW YORKER, July 5, 1999, https://www.newyorker.com/magazine/1999/07/05/time-bomb.

[175] *Id.*

[176] PWG REPORT ON LTCM, *supra* note 110, at 37.

[177] CRMPG REPORT, *supra* note 115, at 2.

[178] *Id.*

recommendations for improvements in market practices and conventions. The fourth part covered what the Report characterized as a "limited range of initiatives for improving the quality, timeliness and relevance of information flows between major participants and their primary regulators."[179] The specific recommendations in the Report reflected six principal elements:

(i) implementing significant enhancements to information-sharing between counterparties, because better knowledge of one's counterparty is the foundation on which the other pillars of risk management rest;

(ii) applying an integrated analytical framework to evaluation of market risk, liquidity risk and leverage—one that treats leverage not as an independent source of risk, but as a factor that can accentuate market and liquidity risk;

(iii) systematically evaluating the integrated elements of market, liquidity and credit risk factors to develop liquidation-based estimates of potential counterparty credit exposure, as well as integrated efforts at market and credit risk stress testing;

(iv) linking all these pieces into stronger internal credit practices, which explicitly take account not only of current judgments of creditworthiness, but also potential liquidation cost estimates in setting limits and collateral standards;

(v) making significant enhancements in the quality of risk information, both for the firm's senior management and board of directors, as well as potentially for the regulatory authorities; and

(vi) improving and harmonizing standard industry documents, as well as standards for better performance in the completion and control of documents, such as ensuring that close-out arrangements using commercially reasonable valuations can be carried out in a practical and time-critical fashion during periods of market distress with a high degree of legal certainty; and harmonizing key provisions of standard industry documentation.

The CRMPG Report called for an ambitious program of self-improvement at the individual firm level and at the industry level. Nonetheless, subsequent experience in the run-up to the financial crisis in 2008 would indicate that there continued to be a wide diversity in the strength of credit risk and market risk

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[179] *Id.* at 3.

management at many of the largest financial firms in the decade following the 1998 financial crisis.[180]

GAO REPORT ON LTCM

At the request of several members of Congress, the GAO undertook its own study of the LTCM episode. The GAO issued its report in October 1999.[181] The GAO Report on LTCM generally synthesized the earlier reports issued on the LTCM episode and provided many of the same explanations for the near collapse of LTCM as the President's Working Group, including both problems with LTCM's leveraged structure and problems with the risk management practices of many of LTCM's creditors and counterparties. The principal conclusion of the GAO Report on LTCM was that

> LTCM was able to establish leveraged trading positions of a size that posed potential systemic risk because the banks and securities and futures firms that were its creditors and counterparties failed to enforce their own risk management standards.[182]

The GAO said that according to the federal financial regulators, the failure by the large financial institutions to enforce their own internal risk management standards arose in part from an overreliance on the reputations of the LTCM principals, the relaxation of credit standards that typically occurs during periods of sustained economic prosperity, and competition between banks and securities firms for hedge fund business.[183] The GAO noted that since the time of LTCM's near failure, the regulators and industry groups had taken steps to address many of the issues through revised examination guidance, expanded information reporting, and improved industry risk practices.[184]

Like the President's Working Group Report on LTCM, the GAO Report on LTCM identified one significant regulatory gap relating to the unregistered affiliates of securities firms and futures firms. The GAO Report noted that almost half of the total assets of four major securities and futures firms were held outside the registered broker-dealers.[185] The GAO concurred in the recommendation from the President's Working Group that the SEC and the

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180 *See* sources cited *supra* note 142.

181 GAO REPORT ON LTCM, *supra* note 112.

182 *Id.* at 2.

183 *Id.*

184 *Id.* at 3.

185 *Id.*

CFTC should be provided with expanded authority to obtain information from unregistered affiliates of broker-dealers and FCMs. But the GAO indicated that the President's Working Group recommendation did not go far enough. The GAO suggested that Congress should consider expanding the SEC's and the CFTC's authority over unregistered affiliates to include the ability to examine, set capital standards, and take enforcement actions.[186] It noted generally that "LTCM has renewed regulatory concerns about leverage and how to measure and manage it."[187] It noted specifically that

> [t]he authority to set capital standards, among other benefits, would provide a mechanism to better relate leverage to risk in the affiliates of securities and future firms, which may employ as much leverage as LTCM did.[188]

The authors of the GAO Report were less inclined to rely on market discipline to curb excessive leverage than the authors of the President's Working Group Report. The authors of the GAO Report were in fact calling for a more robust regulatory approach than the regulators themselves.

PRESIDENT'S WORKING GROUP REPORT ON OTC DERIVATIVES

As noted above, the President's Working Group Report on LTCM made only brief mention of reform measures related to the OTC derivatives market. The President's Working Group Report on LTCM noted that the near failure of LTCM raised certain issues related to the treatment of derivatives under the Bankruptcy Code. The first set of issues related to improvements that should be made to the Bankruptcy Code by expanding the definition of financial contracts eligible for netting under the Bankruptcy Code and by allowing eligible counterparties to net across different types of financial contracts, such as swaps, security contracts, and repos. The second set of issues related to the complications that could arise under section 304 of the Bankruptcy Code (as it existed at the time) if a party filed for bankruptcy protection under the laws of a foreign jurisdiction and then sought a judicial stay in a U.S. court to prevent its counterparties from exercising their right to immediately sell collateral securing their derivative contracts. The Report recommended amendments to the Bankruptcy Code to address these issues (which were ultimately adopted in 2005 as part of a major Bankruptcy Code reform measure). The Report otherwise did not discuss the issues that the LTCM episode appeared to raise

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[186] *Id.* at 26–29.

[187] *Id.* at 27.

[188] *Id.*

about the unregulated nature of the OTC derivatives market except in the general sense of recommending better counterparty risk management. In testimony after the release of the Report, a senior Treasury Department official and Chairperson Brooksley Born of the CFTC indicated that other issues relating to the derivatives market would be taken up in a separate report that the President's Working Group was preparing on the OTC derivatives markets.[189]

The President's Working Group issued a separate Report on OTC Derivatives in November 1999.[190] The principal thrust of the Report was to address areas of legal uncertainty with respect to the status of OTC derivatives and to promote innovative approaches to the OTC derivatives markets and futures markets. The most important recommendation in the Report was that bilateral trading of financial derivatives by eligible swap participants (as that term generally was defined by CFTC rules) on a principal-to-principal basis should be excluded from the CEA.[191] The effect of the recommendation would be to exclude most OTC financial derivatives from regulation by the CFTC. The Report noted that the CFTC Concept Release of May 1998 had been construed by market participants as creating uncertainty about the applicability of a 1993 exemption from the CEA issued by the CFTC for certain swaps.[192] Legislation enacted in October 1998 in response to the Concept Release at the request of the Treasury, the Federal Reserve Board and the SEC imposed a moratorium on the CFTC's rulemaking authority over OTC derivatives until March 30, 1999, and froze the legal status of swap agreements and hybrid instruments under previously issued CFTC exemptions, rules and statements.[193] The Report said that the 1998 legislation reduced the legal uncertainties created by implication under the Concept Release, but that it did not provide a permanent clarification of the legal status of derivatives under the CEA. The President's Working Group concluded that there was "no compelling evidence of problems involving bilateral swap agreements that would warrant regulation under the CEA" and that "the sophisticated counterparties that use OTC derivatives simply do not require the same protections under the CEA as those required by retail

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[189] *Hearing on President's Working Group Study*, *supra* note 172, at 11 (statement of Gary Gensler, Under Secretary for Domestic Finance, Dep't of Treasury) & 12 (statement of Brooksley Born, Chairperson, CFTC).

[190] *See* PWG REPORT ON OTC DERIVATIVES, *supra* note 118.

[191] *Id.* at 17.

[192] *Id.* at 12.

[193] *Id.* at 13.

investors."[194] It also indicated that most derivatives dealers were already affiliated with broker-dealers or FCMs that were regulated by the SEC or the CFTC or were financial institutions subject to supervision by bank regulatory agencies and so were already subject to direct or indirect federal oversight. The President's Working Group, however, reiterated the recommendation made in its April report on LTCM concerning enhanced risk assessments of unregulated affiliates of broker-dealers and FCMs.[195]

The Report also recommended several other amendments to the CEA to clarify uncertainties relating to the status of OTC derivatives and hybrid instruments. To promote efficiency in the OTC derivatives markets, it recommended enactment of legislation to permit electronic trading systems for OTC derivatives.[196] It also recommended enactment of legislation to facilitate the development of clearing systems for OTC derivatives. The Report noted that clearing systems could serve a valuable function in reducing systemic risk by preventing the failure of a single market participant from having a disproportionate effect on the overall market.[197] However, because a clearing system concentrates the credit risks of its individual participants, the Report said that any clearing system that might develop for OTC derivatives should be subject to a comprehensive regulatory framework and regulatory oversight by the CFTC.[198] At the time of the Report, a clearing system for any OTC derivative was merely a future prospect. As a result of the 2008 financial crisis, the Dodd-Frank Act would subsequently mandate the development of clearing systems for certain OTC derivatives.

The position taken by the President's Working Group in its report on the OTC derivatives markets was entirely predictable. The Treasury Department, the Federal Reserve Board and the SEC had already taken positions in 1998 in general opposition to the regulation of the OTC derivatives markets. Brooksley Born had resigned as Chairperson of the CFTC in June 1999 and thereupon a new and more accommodating CFTC Chairman had been appointed, assuring unanimity among the members of the President's Working Group on the question of the desirability of not regulating the OTC derivatives markets.

The Report found a receptive audience on the Hill. The legislators applauded the fact that the views of the members of the President's Working Group on the

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[194] *Id.* at 15–16.

[195] *Id.* at 16.

[196] *Id.* at 18.

[197] *Id.* at 14.

[198] *Id.* at 20.

desirability of not regulating the OTC derivatives market were now unanimous. Chairman James A. Leach of the House Banking Committee enthused that "[t]he Working Group's newly established and long overdue consensus on OTC derivatives is momentous for the banking industry, banking regulators and this committee."[199] The new Chairman of the CFTC testified firmly in favor of excluding OTC financial derivatives from the CEA because they did not present "regulatory concerns within the scope of the [CEA]."[200] In fact, much of the discussion in the House and Senate hearings on the President's Working Group Report on OTC Derivatives focused on extending the benefits of lighter regulation to U.S. futures exchanges. Its principal recommendation, later adopted into law in the Commodity Futures Modernization Act of 2000 (the "CFMA"), that OTC derivatives should not be subject to federal regulation, would set the stage for later recriminations at the time of the 2008–2009 financial crisis.

THE OUTCOME OF THE REPORTS ON LTCM

The LTCM episode was the subject of extensive analysis and review. The outcome of the analysis and review, however, was limited. Following the LTCM episode, U.S. banking regulators increased their scrutiny of the counterparty risk management practices of large banking institutions and strengthened their guidance on risk management practices. The CRMPG sought to enhance the general risk management practices in the industry. The President's Working Group produced a report on the issues presented by the LTCM episode and on the hedge fund sector generally, but it offered only a few modest recommendations. It did not make any recommendation for the regulation of hedge funds, although it did recommend some additional public reporting by hedge funds (which was never adopted). Likewise, it did not make any recommendation for regulation of the OTC derivatives market, although it did recommend some additional information reporting by the unregulated affiliates of broker-dealers and FCMs (which was never adopted). The President's Working Group produced a separate Report on OTC Derivatives. That Report concluded that OTC derivatives between sophisticated counterparties should be exempt from federal regulation.

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[199] *Recommendations by the President's Working Group on Financial Markets: Hearing Before the H. Comm. on Banking & Financial Services*, 106th Cong. 1 (2000) (statement of Rep. James A. Leach).

[200] *President's Working Group Report of OTC Derivatives—CEA Re-Authorization, Hearing Before the S. Comm. on Agriculture, Nutrition & Forestry*, 106th Cong. 15 (2000) (statement of William J. Rainer, Chairman, CFTC).

The most important development to flow from the analysis and review of the LTCM episode was a declination of regulation. This declination was most clearly reflected in the enactment of the CFMA, which exempted the OTC derivatives markets from regulation by the SEC or the CFTC. The CFMA prohibited regulation of the OTC derivatives markets by the CFTC by providing that the CEA did not apply to bilateral derivatives contracts between "eligible contract participants" (*i.e.*, financial institutions, regulated financial entities, institutional investors and businesses and individuals with assets of over $10 million) based on financial products or indicators. As a result, the OTC derivatives markets (which at the time were estimated to amount to $80 trillion in notional value) were exempted from the CEA's clearing, exchange-trading, capital, reporting and other requirements, as well as from any prohibitions on fraud, manipulation and excessive speculation.[201] The CFMA also prohibited the SEC from regulating OTC derivatives, except for its limited fraud jurisdiction over security-based swaps and credit default swaps. It excluded other credit derivatives from the definition of "security" under the Securities Act of 1933 and the Exchange Act of 1934 when entered into by eligible contract participants.[202] The Financial Crisis Inquiry Commission captured the view of many observers in the wake of the 2008–2009 financial crisis with the following observation on the CFMA:

> [t]he enactment of legislation in 2000 to ban the regulation by both the federal and state governments of over-the-counter (OTC) derivatives was a key turning point in the march toward the financial crisis.[203]

OTC derivatives, and particularly credit default swaps, grew rapidly in the years following the LTCM episode and the enactment of the CFMA.[204] Credit default swaps would play a central role in the subsequent financial crisis.

At the time of the LTCM incident, the prevailing instinct in Congress and at least some of the regulatory agencies was to place substantially greater faith in market discipline than in regulation. The failure of market discipline in the

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[201] *See, e.g.*, Testimony of Professor Michael Greenberger, "Role of Derivatives in the Financial Crisis," *Financial Crisis Inquiry Commission Hearing* (June 30, 2010), at 9–10.

[202] *See* CFMA §§ 206C, 302 and 303.

[203] FINANCIAL CRISIS INQUIRY REPORT, FINAL REPORT OF THE NATIONAL COMMISSION ON THE CAUSES OF THE FINANCIAL AND ECONOMIC CRISIS IN THE UNITED STATES, xxiv (2011).

[204] *See* John Kiff et al., *Credit Derivatives: Systemic Risks and Policy Options* (International Monetary Fund, Working Paper No. 09/254 (2009)) ("The aggregate gross notional amount of outstanding credit derivative contracts rose from about $4 trillion at year-end 2003 to just over $60 trillion at year-end 2007").

LTCM case was not sufficient to displace this faith. Subsequent events in the securities markets, such as those surrounding Enron, Global Crossing, Tyco, Adelphia and WorldCom, tarnished to some extent the faith in market discipline and led to a legislative response in the form of the Sarbanes-Oxley Act of 2002. But even that legislative response was subsequently criticized as excessive.[205]

THE MARCH TOWARD THE FINANCIAL CRISIS

In the years following the LTCM episode, references to LTCM would crop up in regulatory discussions, particularly those relating to hedge funds. The SEC itself drew attention to the hedge fund sector in July 2004 when it controversially proposed a rule to require hedge fund advisers to register under the Investment Advisers Act of 1940 (the "Advisers Act").[206] Two Commissioners filed a strong dissent from the proposed rule. The dissenting Commissioners noted that the President's Working Group Report on LTCM had previously concluded that "requiring hedge fund managers to register as investment advisers would not seem to be an appropriate method to monitor hedge fund activity."[207] In proposing the rule, the SEC nonetheless stated that it "has long been concerned about hedge funds and their managers, and the impact their investment activities can have on investors and the securities markets."[208] It did advert to its participation in preparing the President's Working Group Report on LTCM, but said that the focus of the proposed rule was quite different from the focus of the Report on LTCM, which was on the stability of the financial markets and counterparty risk.[209] One focus of the proposed rule was on a "troubling" growth in hedge fund fraud cases.[210] Another focus of the proposed rule was on the "retailization" of hedge funds, *i.e.*, the growing exposure of smaller investors and public and private pension plans, endowments and other charitable organizations to hedge fund investments.[211]

Most advisers to hedge funds were at the time exempt from registration under the Advisers Act based on the so-called "private adviser" exemption in the

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[205] *See, e.g.*, Roberta Romano, *The Sarbanes-Oxley Act and the Making of Quack Corporate Governance*, 114 YALE L.J. 1521 (2005).

[206] *See* Registration Under the Advisers Act of Certain Hedge Fund Advisers, 69 Fed. Reg. 45,173 (proposed July 28, 2004).

[207] 69 Fed. Reg. at 47,197 (quoting PWG REPORT ON LTCM, *supra* note 110, at B-16).

[208] *Id.* at 45,174.

[209] *Id.*

[210] *Id.* at 45,175.

[211] *Id.* at 45,176.

Advisers Act. The "private adviser" exemption exempted an adviser from registration if the adviser had fewer than fifteen clients in the preceding twelve months, did not hold itself out generally to the public as an investment adviser, and was not an adviser to a registered investment company.[212] The Advisers Act does not define the word "client." SEC rules had historically treated a fund or other entity as a single client for purposes of the fifteen-client limit in the "private adviser" exemption, notwithstanding the fact that the fund or other entity might have many investors.[213] The SEC now proposed to change its rules to require that each shareholder, partner or beneficial owner of a fund or entity be counted as a "client" for purposes of the private adviser exemption. The effect would be to require the registration of virtually all the firms serving as advisers to hedge funds that had previously relied on the "private adviser" exemption.[214] The SEC adopted the rule in final form in December 2004 with two Commissioners again filing an extensive dissent.[215] The SEC rule was overturned by a decision of the U.S. Court of Appeals for the District of Columbia in June 2006.[216]

In February 2007, nearly nine years after the LTCM episode, the President's Working Group returned to the subject of hedge funds when it released a document styled as an "Agreement among PWG and U.S. Agency Principals on Principles and Guidelines Regarding Private Pools of Capital."[217] The document reflected a continuing reliance on the private sector to impose market

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[212] *See* 15 U.S.C. § 80-3(b)(3) (2004) (amended by Pub. L. No. 111-203 (2010)). *See* 69 Fed. Reg. at 45,173.

[213] 69 Fed. Reg. at 45,173.

[214] The SEC staff estimated that 40 to 50 percent of hedge fund advisers were already registered under the Advisers Act, presumably because they did not meet the existing requirements for the "private adviser" exemption or otherwise volunteered to register. 69 Fed. Reg. at 45,190; 69 Fed. Reg. at 72,060 n.62.

[215] 69 Fed. Reg. 72,054 (Dec. 10, 2004).

[216] Goldstein *v.* SEC, 451 F.3d 873 (D.C. Cir. 2006). In testimony given shortly after the Court of Appeals decision, a senior official from the Treasury Department noted that the President's Working Group Report on LTCM did not include a recommendation for direct regulation of hedge funds and that neither the President's Working Group nor the Treasury ever took a formal position on the SEC rule. *See Regulation of Hedge Funds: Hearings Before the S. Comm. on Banking, Housing & Urban Affairs*, 109th Cong. 42 (2006) (statement of Randal K. Quarles, Under Secretary for Domestic Finance, U.S. Dep't of the Treasury). At the same hearing, Chairman of the SEC Christopher Cox continued to express concern for the unregulated situation of hedge funds. He said that the SEC had to address the "gaping hole that the Goldstein decision has left." *Id.* at 9 (statement of Christopher Cox).

[217] Press Release, U.S. Dep't of the Treasury, President's Working Group Releases Common Approach to Private Pools of Capital Guidance on hedge fund issues focuses on systemic risk,

discipline on hedge funds and other private pools of capital. Its principle on systemic risk was that "[m]arket discipline by creditors, counterparties, and investors is the most effective mechanism for limiting systemic risk from private pools of capital."[218] The February release by the President's Working Group was followed in September 2007 by an announcement that the President's Working Group had appointed two private sector committees, one comprised of investors, and the other comprised of asset managers, to develop best practices for hedge fund investors and for hedge fund managers.[219]

In the interim, however, the profile of hedge funds was raised again in June 2017 when the press reported that two hedge funds advised by Bear Stearns were close to collapse and that Bear Stearns proposed to engage in a $3.2 billion "rescue" of the funds.[220] The Bear Stearns proposal, which was actually to provide short-term repo financing to one of the funds, did not result in a rescue. The two funds filed insolvency petitions in the Cayman Islands at the end of July 2007. The problems at the funds drew the attention of members of Congress at a hearing in mid-July (before the announcement that the funds would actually enter insolvency proceedings).[221] At that hearing a Treasury official and a Governor of the Federal Reserve Board continued to speak in favor of the President's Working Group's reliance on private sector market discipline as the most effective mechanism for limiting systemic risks from hedge funds.[222] The collapse of the Bear Stearns funds did not result in systemic damage to the U.S. financial system, but it did provide a warning sign of the systemic risk that had already accumulated in the larger financial system through risky investments in mortgage-backed securities and collateralized debt obligations.

In due course, the President's Working Group released a report on Best Practices for the Hedge Fund Industry and a report on Principles and Best

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investor protection (Feb. 22, 2007), http://www.treasury.gov/press-center/press-releases/Pages/hp272.aspx.

[218] *Id.* at 3.

[219] Press Release, U.S. Dep't of the Treasury, PWG Announces Private Sector Groups to Address Market Issues for Private Pools of Capital (Sept. 25, 2007), https://www.treasury.gov/press-center/press-releases/Pages/hp575.aspx.

[220] *See* Julie Creswell & Vikas Bajaj, *$3.2 Billion Move by Bear Stearns to Rescue Fund*, N.Y. TIMES, June 23, 2007, https://www.nytimes.com/2007/06/23/business/23bond.html. The article referred to the proposed Bear Stearns rescue as the largest rescue of a hedge fund since LTCM.

[221] *Hedge Funds and Systemic Risk: Perspectives of the President's Working Group on Financial Markets: Hearing Before the H. Comm. on Financial Services*, 110th Cong. (2007).

[222] *Id.* at 12 (statement of Robert K. Steel, Under Secretary for Domestic Finance, U.S. Dep't of the Treasury) and 14 (statement of Kevin Warsh, Governor, Federal Reserve Board).

Practices for Hedge Fund Investors prepared by its private sector committees in April 2008.[223] The fact sheets released by the President's Working Group relating to these reports stated that the reports set "new" standards for hedge fund managers and investors. But the philosophy underlying the President's Working Group approach in 2007 and 2008 was not fundamentally different from that reflected in its report on LTCM in 1998. By the time of the release of the Best Practices reports in April, Bear Stearns itself had come close to failure and had to be rescued by JPMorgan Chase with assistance from the Federal Reserve System. After a comment period, the President's Working Group released the two reports in final form in January 2009, a few days before the inauguration of President Barack Obama.[224] The future path for the hedge fund industry and many other parts of the financial sector would be significantly altered by the much stronger reliance on regulatory measures taken by the Obama Administration.

During this same period, the public-sector view of the OTC derivatives market remained generally benign with the exception of concerns relating to energy derivatives after the Enron scandal and back-office problems on the documentation and assignment of credit default swaps. When the CEA came up for Congressional reauthorization in 2005, the regulatory agencies testified that the CFMA had been a success. An official from the CFTC said that the CFMA was truly "landmark legislation".[225] Similarly, an official from the Federal Reserve Board said that the Federal Reserve Board believed that the CFMA had "unquestionably" been a successful piece of legislation. He said that the CFMA had made the U.S. financial system and economy "more flexible and resilient by facilitating the transfer and dispersion of risk."[226] There were, however, a few admonitory voices, principal among them Timothy Geithner, the President of the Federal Reserve Bank of New York. In 2005 Mr. Geithner began a regular process of emphasizing the risks relating to exposures to hedge funds and credit default swaps. He noted, for example, in a 2005 speech an

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[223] Press Release, U.S. Dep't of the Treasury, PWG Private-Sector Committees Release Best Practices for Hedge Fund Participants (April 15, 2008), https://www.treasury.gov/press-center/press-releases/Pages/hp927.aspx.

[224] Press Release, U.S. Dep't of the Treasury, PWG Private-Sector Committees Finalize Best Practices for Hedge Funds (Jan. 16, 2009), https://www.treasury.gov/press-center/press-releases/Pages/hp1361.aspx.

[225] *The Commodity Futures Modernization Act of 2000 and Recent Market Developments: Hearing Before the S. Comm. On Banking, Housing & Urban Affairs*, 109th Cong. 11–12 (2005) (statement of Patrick J. McCarty, general counsel, CFTC).

[226] *Id.* at 13 (statement of Patrick M. Parkinson, Deputy Director, Div. of Research and Statistics, Federal Reserve Board).

erosion in counterparty discipline relating to these risks among the dealer community as well as the problem of a substantial backlog of undocumented or unconfirmed trades and the assignment of trades on OTC derivatives without the consent of counterparties.[227] He regularly returned to these risks in his speeches in 2006 and 2007.[228]

THE ROAD TO COMPREHENSIVE REGULATORY REFORM

The financial crisis, which commenced in 2007 and extended well into 2009, produced calls from many quarters for fundamental financial reform, including stronger regulation of virtually every sector of the U.S. financial system. Enacting comprehensive regulatory reform for the U.S. financial markets was one of the top priorities of the Obama Administration as it entered office. In June 2009, the Treasury Department published a comprehensive regulatory reform proposal, calling for the most significant changes in U.S. financial regulation since the time of the Great Depression (the "Regulatory Reform Report").[229] The Regulatory Reform Report prefaced its call for reform with an historical observation:

> The roots of this crisis go back decades. Years without a serious economic recession bred complacency among financial intermediaries and investors. Financial challenges such as the near-failure of Long-Term Capital Management and the Asian Financial Crisis had minimal impact on economic growth in the U.S., which bred exaggerated expectations about the resilience of our financial markets and firms.[230]

The Regulatory Reform Report called for a "rebuilding," and more fundamentally for a reordering, of the U.S. financial regulatory system. It called for more stringent requirements on financial institutions that were already subject to federal regulation and for the imposition of federal regulation on financial

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[227] *Key Challenges in Risk Management*, Keynote Address at the RMA/Risk Business KRI's Global Operational Risk Forum (Jan. 13, 2005).

[228] *See, e.g.*, *Risk Management Challenges in the U.S. Financial System*, Remarks at the Global Association of Risk Professionals 7th Annual Risk Management Convention (Feb. 28, 2006); *Hedge Funds and Derivatives and Their Implications for the Financial System*, Remarks at the Distinguished Lecture 2006 Sponsored by the Hong Kong Monetary Authority (Sept. 15, 2006); *Credit Markets Innovations and Their Implications*, 2007 Credit Markets Symposium hosted by the Federal Reserve Bank of Richmond (March 23, 2007).

[229] U.S. DEPARTMENT OF THE TREASURY, FINANCIAL REGULATORY REFORM: A NEW FOUNDATION: REBUILDING FINANCIAL SUPERVISION AND REGULATION (June 17, 2009) [hereinafter REGULATORY REFORM REPORT].

[230] *Id.* at 2.

entities or activities that were not previously subject to federal regulation. The proposal left few parts of the U.S. financial system untouched. From the perspective of this article, however, there are two areas of focus in the Regulatory Reform Report that are most relevant. The first was the proposed requirement for hedge funds and other private pools of capital to register with the SEC and provide the SEC with information on their potential systemic importance.[231] The second was the proposal for a comprehensive regulatory regime for OTC derivatives.[232]

The Regulatory Reform Report called for the registration under the Advisers Act of advisers to hedge funds and other pools of capital such as private equity funds and venture capital funds. It also called for these advisers to report information to the SEC so that a regulatory assessment could be made as to whether a private fund might pose a threat to U.S. financial stability. Various observers have concluded that hedge funds did not cause or significantly contribute to the severity of the financial crisis.[233] Nonetheless, the Regulatory Reform Report concluded that at various points in the financial crisis, de-leveraging by hedge funds contributed to strain on the financial market.[234] It said that in addition to gathering information on hedge fund activity, there was also a compelling investor protection rationale for filling the gaps in the regulation of investment advisers. For this purpose, the Regulatory Reform Report said that the SEC should conduct regular examinations of hedge funds. It further indicated that the regulatory reporting requirements for such funds should require reporting on a confidential basis of the amount of assets under management, borrowings, off-balance sheet exposures, and other information necessary to assess whether the fund or fund family is so large, highly leveraged or interconnected that it could pose a threat to U.S. financial stability.[235]

The Regulatory Reform Report took a much more comprehensive approach to the regulation of OTC derivatives. Many observers had cited the unregulated nature of the OTC derivatives markets, particularly that of credit default swaps, as contributing to the financial crisis.[236] The Regulatory Reform Report called

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[231] *Id.* at 12–13.

[232] *Id.* at 46–51.

[233] *See, e.g.*, VIRAL V. ACHARYA ET AL., REGULATING WALL STREET: THE DODD-FRANK ACT AND THE NEW ARCHITECTURE OF GLOBAL FINANCE 352 (2011).

[234] REGULATORY REFORM REPORT, *supra* note 229, at 37.

[235] *Id.*

[236] *See, e.g.*, KENNETH R. FRENCH ET AL., THE SQUAM LAKE REPORT: FIXING THE FINANCIAL SYSTEM 123–133 & 145–149 (2010); VIRAL V. ACHARYA & MATTHEW RICHARDSON, RESTORING FINANCIAL STABILITY: HOW TO REPAIR A FAILED SYSTEM 233–248 (2009).

for new regulatory requirements, including mandatory clearing of standardized OTC derivatives, robust regulation of OTC derivative dealers, and record-keeping and reporting requirements on OTC derivatives.

FINANCIAL REFORM UNDER THE DODD-FRANK ACT

The Regulatory Reform Report provided the starting point for an extensive legislative exercise in drafting comprehensive reform legislation. That legislative effort ultimately took the form of the Dodd-Frank Wall Street Reform and Consumer Protection Act (the "Dodd-Frank Act") enacted in 2010.[237] At the core of the Dodd-Frank Act lie various provisions designed to address systemic risk in the U.S. financial system. Title I of the Dodd-Frank Act creates a new regulatory regime for systemically important financial companies, designed to apply to the largest bank holding companies and to other nonbank financial companies that are designated as systemically important. The designation authority as to the latter category of financial institutions is provided by the Dodd-Frank Act to a newly created body, the Financial Stability Oversight Council (the "FSOC").[238] The Dodd-Frank Act provides the FSOC with a wide remit. Besides designating systemically important nonbank financial companies for heightened regulation by the Federal Reserve Board, the FSOC is directed *inter alia* to identify and monitor risks to the U.S. financial system, identify gaps in regulation that could pose risks to the U.S. financial system, and make recommendations to the primary financial regulatory agencies to apply new or heightened standards to financial activities or practices that could create or increase risks in U.S. markets.[239] Initially, it was thought (and feared) that the FSOC might designate a large asset management complex as a systemically important nonbank financial company. The FSOC did not make any such designation and it is highly unlikely that under the Trump Administration the FSOC will make any future designations of its own.[240]

The Dodd-Frank Act was in some respects more sweeping in its provisions than the proposals reflected in the Regulatory Reform Report because of the

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[237] Pub. L. No. 111-203, 124 Stat. 1376 (2010).

[238] 12 U.S.C. §§ 5321 & 5323 (2017).

[239] 12 U.S.C. § 5322(a)(1)&(2) (2017).

[240] *See* U.S. DEP'T OF THE TREASURY, REPORT TO THE PRESIDENT OF THE UNITED STATES, FINANCIAL STABILITY OVERSIGHT DESIGNATIONS 10 (Nov. 17, 2017) (characterizing the FSOC authority to designate nonbank financial companies as a "blunt instrument" for addressing risks to financial stability and recommending that the FSOC prioritize an activities-based or industry-wide approach to addressing risks to financial stability rather than a designation of individual institutions).

addition of such controversial provisions as the Volcker Rule and the so-called "push-out rule" for certain derivative activities (the latter was subsequently limited in its scope by an amendment in 2014).[241] With respect to the regulation of hedge funds and the OTC derivatives markets, the Dodd-Frank Act otherwise largely followed the broad outlines contained in the Regulatory Reform Report. Title IV of the Dodd-Frank Act in relatively short compass implements the recommendation for the registration of advisers to hedge funds and other private capital pools and for the confidential reporting of information on the advised funds to the SEC. Title VII in much greater compass implements the recommendations of the Regulatory Reform Report for the establishment of a comprehensive regime to regulate activities in the OTC derivatives markets and the major participants in those markets.

Hedge Funds

Registration under the Advisers Act

Before the Dodd-Frank Act, a hedge fund manager with fewer than fifteen clients during the preceding 12-month period that did not hold itself out to the public as an investment adviser was exempt from registration under section 203(b)(3) of the Advisers Act. The Dodd-Frank Act repealed this "private adviser" exemption.[242] The effect of the repeal was to require private fund managers (including hedge fund managers), with limited exceptions, to register with the SEC. Registration with the SEC under the Advisers Act imposes disclosure requirements and substantive obligations on the conduct of a registered investment adviser and on its business.[243] For example, registered investment advisers must (*i*) implement a compliance program with written policies and procedures reasonably designed to prevent violations of the Advisers Act; (*ii*) designate a chief compliance officer; (*iii*) implement a code of ethics delineating the standard of conduct applicable to the firm and its

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[241] *See* 12 U.S.C. § 1851 (2017) (Volcker Rule); 15 U.S.C. § 8305 (2017) (Swaps Push-Out Rule). The Volcker Rule generally prohibits banking entities from engaging in proprietary trading, but also from investing in, sponsoring, and having certain relationships with, hedge funds and private equity funds. Each of the prohibitions is subject to certain exceptions. As it applies to hedge funds and private equity funds, the Volcker Rule permits banking entities to sponsor such funds as part of a bona fide trust, fiduciary, or investment advisory business, to provide temporary seed capital to such sponsored funds and, after the permitted seeding period, to retain a de minimis investment not to exceed 3% of total ownership interests of each such fund and with the aggregate ownership in all such funds not to exceed 3% of the banking entity's Tier 1 capital. 12 U.S.C. § 1851(d)(1)(G); 12 C.F.R. § 248.12(a)(2)(ii) & (iii).

[242] Dodd-Frank Act § 403.

[243] *See, e.g.*, Securities and Exchange Commission, *Information for Newly-Registered Investment Advisers* (Nov. 23, 2010), https://www.sec.gov/divisions/investment/advoverview.htm.

employees; (*iv*) establish, maintain, and enforce written policies and procedures reasonably designed to prevent the misuse of material nonpublic information, and (*v*) adhere to an extensive set of books and records requirements. Other restrictions apply with respect to information presented in sales materials, custody of assets, and use of solicitors. Perhaps most importantly, registered investment advisers are subject to regular SEC inspection and examination.[244] These basic requirements are inherent in the regulatory regime for registered investment advisers under the Advisers Act. These are the requirements that the SEC had unsuccessfully sought to impose on unregistered advisers to hedge funds in its 2004 rule. The Dodd-Frank Act amendments to the Advisers Act did more than just require investment advisers to hedge funds and other private funds to register with the SEC. The Dodd-Frank Act also imposed a special reporting regime on advisers to private funds relating to systemic risk data.[245]

Systemic Risk Data

The Dodd-Frank Act was designed, among other things, to promote the financial stability of the United States by establishing a framework to monitor emerging systemic risks.[246] The Dodd-Frank Act authorizes the FSOC to issue recommendations to primary financial regulators, like the SEC and CFTC, for more stringent regulation of financial activities that the FSOC determines may create or increase systemic risk.[247] To support these efforts and provide the FSOC with relevant information, the Dodd-Frank Act amended the Advisers Act to provide that the SEC establish specific reporting and recordkeeping requirements for advisers to hedge funds and other private funds.[248]

Pursuant to the Dodd-Frank Act, the SEC and the CFTC jointly adopted Form PF, a form that private fund managers are required to file with the SEC that provides detailed information concerning the investment activities of private funds.[249] To satisfy CFTC filing requirements, Form PF is also filed with the SEC and the CFTC by certain commodity pool operators and commodity trading advisers registered with the CFTC who manage private

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[244] *Id.*

[245] Dodd-Frank Act § 404 (codified at 15 U.S.C. § 80b-4(b)).

[246] S. REP. No. 111-176, at 2–3 (2010).

[247] Dodd-Frank Act § 112 (codified at 12 U.S.C. § 5322) & § 120 (codified at 12 U.S.C. § 5330).

[248] Dodd-Frank Act § 404 (codified at 15 U.S.C. § 80b-4(b)).

[249] *See* Commodity Futures Trading Commission and Securities and Exchange Commission, Reporting by Investment Advisers to Private Funds and Certain Commodity Pool Operators and Commodity Trading Advisors on Form PF, Release No. IA-3308; File No. S7-05-11 (October 31, 2011) [hereinafter "Form PF Release"], https://www.sec.gov/rules/final/2011/ia-3308.pdf.

funds, whose investment advisers are also registered with the SEC, and who have at least $150 million in private fund assets under management.[250] Form PF is filed electronically on a confidential basis and is only accessed by the SEC and certain other financial regulators.[251] It is designed to provide FSOC "with important information about the basic operations and strategies of private funds and help establish a baseline picture of potential systemic risk in the private fund industry."[252]

While Form PF data is collected by the SEC and the CFTC, Form PF was principally designed to assist FSOC in its assessment of systemic risk in the United States. The Form PF Release specifically noted that the "design of Form PF is not intended to reflect a determination as to where systemic risk exists but rather to provide empirical data to FSOC with which it may make a determination about the extent to which the activities of private funds or their advisers pose such risk."[253] As such, the content and design of Form PF "reflect FSOC's role as the primary user of the reported information[.] The SEC would not necessarily have required the same scope of reporting if the information reported on Form PF were intended solely for the SEC's use."[254] The SEC and the CFTC, however, may also use information collected on Form PF in their regulatory programs, including examinations, investigations, and investor protection efforts relating to private fund advisers.[255] While Form PF is required to be filed by private equity funds and other types of private funds, the most detailed questions are reserved for hedge funds.[256]

Form PF is composed of four sections. With respect to hedge fund managers that are registered investment advisers, an adviser is required to complete and file section 1 in its entirety. Section 1 asks the adviser to provide general descriptive information regarding the adviser's identity and assets under management; each private fund's size, leverage and performance; and additional descriptive information specific to each hedge fund. This information must be submitted on at least an annual basis.

Large registered hedge fund advisers—that is, advisers with at least $1.5 billion in regulatory assets under management—must additionally complete

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[250] Securities and Exchange Commission, *Form PF Instructions, at 1*, https://www.sec.gov/files/formpf.pdf.

[251] *See supra* note 249 at 2.

[252] *See id.* at 8.

[253] *See id.*

[254] *See id.*

[255] *See supra* note 250 at 10.

[256] *See supra* note 250 at 2.

and file section 2 in its entirety. Section 2 focuses on additional information regarding the hedge funds managed, with particular attention paid to areas of financial activity that might raise systemic risk concerns. Large registered hedge fund advisers must file their Form PF each fiscal quarter. An appendix to this article contains a high-level summary of the information required by Form PF.

OTC Derivatives

Title VII of the Dodd Frank establishes a comprehensive regulatory regime for OTC derivatives, including mandatory clearing, margin, exchange trading, and reporting requirements, among other requirements. In order to deploy limited regulatory resources efficiently, certain of these requirements, as well as certain capital, business conduct, disclosure and other requirements, are targeted specifically at registered "swap dealers" and "security-based swap dealers"—new categories of regulated market participants that are required to register with the CFTC or the SEC (as applicable) if the notional amount of their derivatives activities exceeds certain thresholds.[257] By organizing the diffuse OTC derivatives markets around these regulated dealing entities and calibrating the registration threshold to include those dealers whose activities can significantly impact the soundness of the U.S. derivatives markets, regulators sought to obtain a more complete picture of the activities of these dealers and their underlying exposures while indirectly regulating the markets as a whole.

Mandatory Clearing

Perhaps the most consequential of the Title VII reforms is mandatory clearing of certain swaps. The goal of mandatory clearing is to reduce counterparty credit risk and ensure financial solvency by replacing bilateral arrangements with central counterparty ("CCP") clearing whenever possible.[258] Currently, the clearing mandate applies to certain categories of index credit

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[257] *See* 7 U.S.C. § 1a(49) (Pub. L. 111-203, title VII, § 721 (2010)); 15 U.S.C. § 78c(a)(71) (Pub. L. 111-203, title VII, § 761 (2010)); 7 U.S.C. § 6s (Pub. L. 111-203, title VII, § 731 (2010)); 15 U.S.C. § 78o-10 (Pub. L. 111-203, title VII, § 764 (2010)*See also* 17 CFR Part 23.

[258] *See, e.g.*, J. CHRISTOPHER GIANCARLO & BRUCE TUCKMAN, SWAPS REGULATION VERSION *2.0:* AN ASSESSMENT OF THE CURRENT IMPLEMENTATION OF REFORM AND PROPOSALS FOR NEXT STEPS (2010), at 3. The implementation of the clearing mandate has significantly increased the volume of swaps cleared through CCPs. According to CFTC data, about 85% of both new interest rate swaps and new credit default swaps were cleared in 2017, whereas only about 40% of interest rate swaps and 8% of CDS were cleared in 2010. *See id.*, citing PHILIP WOOLDRIDGE, *Central Clearing Predominates in OTC Interest Rate Derivatives Markets*, BIS QUARTERLY REVIEW, 22–24 (Dec. 2016).

default swaps and interest rate swaps (subject to an exception where at least one of the counterparties to the contract is a non-financial entity end-user that is using the swap to hedge or mitigate commercial risk).[259]

For swaps subject to the clearing mandate, both counterparties to the swap must legally assign (*i.e.*, "novate") the swap to a CCP for clearing. The CCP interposes itself between the original counterparties, extinguishing the contractual obligations of the parties to each other and replacing the original swap with two equal and opposite swaps between the CCP and each of the original counterparties. By running a perfect "matched book" and applying multilateral netting of trades, clearing reduces counterparty risk and minimizes cash flows between counterparties.[260]

Accounts at CCPs are limited to clearing members, which are subject to certain financial resources, risk management, margin, and operational requirements.[261] To protect against the possibility that a CCP would be left with losses in excess of margin (as a result of clearing member failures), CCPs are required to maintain additional prefunded default resources[262] and to establish a default management plan addressing the procedures to be followed upon a clearing member default (including for the prompt transfer or liquidation of a defaulting clearing member's positions). Furthermore, CFTC regulations require large and systemically important CCPs to establish recovery plans to remain viable as a going concern in extreme scenarios.[263]

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[259] 7 U.S.C. §§ 2(h)(1) and 2(h)(7); 17 C.F.R. 50.4. Title VII prescribes a specific process for the CFTC (or the SEC) to determine if a "swap, or group, category, type, or class of swaps" (or security-based swaps) should be subject to the clearing mandate.

[260] *See* GIANCARLO & TUCKMAN, SWAPS REGULATION VERSION *2.0*, at 8. *See* WILLIAM S. TOPHAM, RE-REGULATING "FINANCIAL WEAPONS OF MASS DESTRUCTION," OBSERVATIONS ON REPEALING THE COMMODITY FUTURES MODERNIZATION ACT AND FUTURE DERIVATIVE REGULATION, at 153, citing JOHN KIFF ET AL., *Credit Derivatives: Systemic Risks and Policy Options,* INTERNATIONAL MONETARY FUND, WORKING PAPER NO. 09/254, 2009, at 17.

[261] CCPs are required to collect two types of margin from their clearing members: variation margin (based on daily changes in the value of a contract) and initial margin (based on their exposure to a clearing member default).

[262] CFTC regulations impose a "cover-two" standard for large and complex CCPs, meaning the prefunded resources must be sufficient to cover losses from the failure of the two clearing members whose default (under "extreme but plausible market conditions") would cause the largest combined loss to the CCP. Most of the prefunded resources are collected from clearing members in the form of guarantee fund contributions, with the CCP itself contributing a relatively small portion (as "skin-in-the-game"). In addition, CCPs are authorized to make "assessments" (or "cash calls") on clearing members if the existing prefunded default resources are not sufficient to cover a CCP's losses.

[263] *See* 17 CFR Part 39. *See also* GIANCARLO & TUCKMAN, SWAPS REGULATION VERSION *2.0*, at

Margin for Uncleared Swaps

Title VII requires the U.S. banking agencies, the CFTC and the SEC to jointly adopt initial margin and variation margin requirements for uncleared swaps and security-based swaps.[264] Under the implementing regulations, dealers are required to post and collect variation margin on a daily basis on their swaps and security-based swaps with other dealers and with "financial end-users."[265] The amount of variation margin posted or collected each day must cover the cumulative mark-to-market change in the value of each swap (or "netting portfolio") since the last exchange of variation margin. In addition, dealers are required to post and collect initial margin on a daily basis on their swaps and security-based swaps with other dealers and with financial end-users with a "material swaps exposure" (*i.e.*, more than $8 billion in average daily aggregate notional amount of swaps over a specified period). Dealers are permitted to calculate their minimum initial margin requirements using an internal model, so long as the model satisfies certain criteria on an ongoing basis and is approved in advance by the relevant prudential regulator.[266] To ensure such required initial margin is protected in the event of the counterparty's failure, the regulations require that it be segregated at an independent third-party custodian.

Exchange Trading

To promote transparency and market liquidity, Title VII requires certain swaps subject to the clearing mandate to be traded and executed either on a "swap execution facility" ("SEF") (a new type of registered trading platform

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18. U.S. regulators are also working to coordinate the planning and execution of any CCP resolution (in the worst case scenario where a CCP's recovery plan is not successful in restoring a matched book or a CCP is otherwise unable to resume clearing services). *See id.* at 21–23.

264 7 U.S.C. § 6s(e) (Pub. L. 111-203, title VII, § 731 (2010)); 15 U.S.C. § 78o-10(e) (Pub. L. 111-203, title VII, § 764 (2010)).

265 *See* 17 CFR Part 23 (Subpart E). U.S. regulators deliberately set these requirements at levels higher than those for cleared swaps in order to incentivize market participants to shift derivatives activity to CCPs. *See, e.g.*, GIANCARLO & TUCKMAN, SWAPS REGULATION VERSION *2.0*, at 81–82 (citing, *e.g.*, BCBS/IOSCO, *Margin requirements for non-centrally cleared derivatives* (Mar. 2015), at 3). *See also* Federal Reserve Chair Janet L. Yellen, *Opening Statement on the Long-Term Debt and Total Loss-Absorbing Capacity Proposal and the Final Rule for Margin and Capital Requirements for Uncleared Swaps* (Oct. 30, 2016).

266 Among other requirements, the internal model must calculate an amount of initial margin that is equal to the potential future exposure of the swap (or netting portfolio), consistent with a 99% confidence interval for an increase in the value of the swap (or netting portfolio) due to an instantaneous price shock that is equivalent to a movement in all material underlying risk factors (including prices, rates and spread) over a 10-day holding period of risk.

created under Title VII) or on a "designated contract market" ("DCM") (a registered trading platform on which futures are traded). The requirement applies to those swaps that are subject to the clearing mandate and are "made available to trade" ("MAT") by a DCM or SEF.[267]

In the ensuing years, the CFTC adopted regulations establishing a process for determining which swaps are MAT (and therefore subject to the exchange trading mandate) and specifying the permissible methods of SEF trading and execution.[268]

Reporting

To improve transparency in the OTC derivatives markets, Title VII required all swaps to be reported to central "swap data repositories" ("SDRs").[269] The CFTC regulations call for two types of reports: real-time reports (public reports filed with SDRs as soon as technologically practicable after execution of a trade without disclosing the parties to the trade) and regulatory reports (confidential reports filed with SDRs, providing detailed information on the swap transaction and the parties involved). Real-time public reports enhance price transparency by providing pricing and other information to market participants, while regulatory reports facilitate regulatory monitoring by providing the CFTC with information on firms' exposures.[270]

While price transparency has improved and more information is now available to regulators on the swaps exposures of market participants, critics (including CFTC Chairman Giancarlo) argue that the reporting structure remains incomplete and that the CFTC rules do not provide sufficient technical specificity as to the exact information to be reported. The CFTC is expected to propose reforms in these areas.[271]

Position Limits

To prevent excessive leverage and reduce the concentration of large positions in the commodities markets, Title VII mandated that the CFTC impose limits

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[267] *See* 7 U.S.C. § 2(h)(8) (Pub. L. 111-203, title VII, § 723(a) (2010)); 15 U.S.C. § 78c-3 (Pub. L. 111-203, title VII, § 763(a) (2010)).

[268] 17 CFR Parts 37 and 38. The current CFTC Chairman, Christopher Giancarlo, has argued that these swap execution rules are contrary to Congressional intent and have "stunted" SEF trading by unnecessarily limiting the swaps that are required to be traded on SEFs and arbitrarily confining SEF execution methodologies. The CFTC is expected to propose reforms in these areas. *See* GIANCARLO & TUCKMAN, SWAPS REGULATION VERSION *2.0*, at 43–57.

[269] *See* 7 U.S.C. § 6r (Pub. L. 111-203, title VII, § 729 (2010)).

[270] *See* 17 CFR Parts 43 and 45.

[271] *See* GIANCARLO & TUCKMAN, SWAPS REGULATION VERSION *2.0*, at 29–38.

on the size of positions that a market participant may hold in certain physical commodity futures and options contracts,[272] as well as on swaps that are "economically equivalent" to such contracts, subject to exception for bona fide hedge positions.[273] The CFTC's implementing regulations are not yet final.

CONCLUSION

The 2008-2009 financial crisis prompted comprehensive changes in the U.S. regulatory system through the enactment of the Dodd-Frank Act. Among the many changes to the regulatory system made by the Dodd-Frank Act were several that addressed areas of concern that were identified in the LTCM case, but were left unaddressed at the time or addressed only by a continued reliance on private sector initiatives. One such area related to hedge funds. Title IV of the Dodd-Frank Act amended the Advisers Act to require advisers to hedge funds and certain other private funds to register as investment advisers. Title IV also imposed a financial reporting requirement on hedge fund advisers. This financial reporting by hedge fund advisers is intended to assist the FSOC in its assessment of systemic risk in the U.S. financial system. The reporting requirement is of a piece with the overall emphasis in the Dodd-Frank Act on the identification and monitoring of the sources of potential systemic risk in the U.S. financial system. It can also be seen as a belated response to the concerns surrounding LTCM as a potential source of systemic risk.[274]

Another area of concern identified in the LTCM case related to OTC derivatives. Title VII of the Dodd-Frank Act imposed a comprehensive regulatory regime on OTC derivatives. Title VII can be seen as a response to the events of the financial crisis as well as a belated response to the concerns surrounding OTC derivatives dating from the time of the LTCM episode, if not earlier.[275] The mills of regulation grind slowly for OTC derivatives, but they

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[272] These new position limits would be imposed on certain physical commodity futures and options contracts that are not already subject to such limits under the existing Part 150 of the CFTC regulations.

[273] *See* 7 U.S.C. § 6(a) (amended by Pub. L. 111-203, title VII, § 737).

[274] In the final year of the Obama Administration, the FSOC continued to analyze the effects of hedge fund operations on the financial system. In April 2016, the FSOC established an interagency working group to focus on hedge funds. In November 2016, the interagency hedge fund working group reported that additional data and improved data sharing among relevant regulators would be necessary to better assess the potential risks to financial stability that hedge funds might present. *See* 2017 FSOC ANNUAL REPORT 4, https://www.treasury.gov/initiatives/fsoc/studies-reports/Documents/FSOC_2017_Annual_Report.pdf.

[275] *See, e.g.*, U.S. GENERAL ACCOUNTING OFFICE, GAO/GGD-94-133, FINANCIAL DERIVATIVES: ACTIONS NEEDED TO PROTECT THE FINANCIAL SYSTEM 10-12 (1994) (recommending action to establish federal oversight of the OTC derivatives markets).

grind exceedingly fine. The process of finalizing the full range of regulations required under Title VII is not yet complete and almost certainly will be re-opened under the Trump Administration to modify certain of the regulations already adopted.

Other concerns identified in the LTCM episode were also addressed in the Dodd-Frank Act. One of the core objectives of the Dodd-Frank Act was to address the "too-big-to-fail" problem and its corollary, moral hazard. The too-big-to-fail problem was highlighted in the 2008 financial crisis by the case of AIG as it had been in the 1998 financial crisis by the case of LTCM. In announcing its major reform effort in 2009, the Obama Treasury Department said that when a large systemically important financial institution encountered financial difficulty, there were only two options for the company: (1) obtain funding from the federal government as in the case of AIG; or (2) file for bankruptcy and undergo a "disorderly" failure that would threaten the stability of the U.S. financial system as in the case of Lehman Brothers.[276] The Obama Treasury Department said that there should be a third option in the form of a new resolution authority for systemically important financial companies. This solution was ultimately adopted as the Orderly Liquidation Authority in Title II of the Dodd-Frank Act. Seen by its proponents as a necessary alternative to a bankruptcy process for a large, interconnected financial firm, Title II was seen by its opponents as a deeply flawed measure. Opponents of Title II argued that Title II would promote the bailout of a failing institution through the use of federal assistance specifically authorized under Title II and would actually exacerbate the too-big-to-fail problem and the related moral hazard problem.[277]

In a report issued in 2018, the Trump Treasury Department endorsed many of the concerns that the critics of Title II have expressed.[278] The impression left by the report is that the Trump Treasury Department would be most unlikely to use Title II and would instead rely on the use of the Bankruptcy Code if necessary to resolve a large financial company. Overall sentiment now seems to be running in favor of the use of Bankruptcy Code for the resolution of a large failing financial company, particularly if the institution has developed a credible

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[276] Press Release, U.S. Dep't of the Treasury, Treasury Proposes Legislation for Resolution Authority (Mar. 25, 2009), http://www.treasury.gov/press-center/press-releases/Pages/tg70.aspx.

[277] *See, e.g.*, FAILING TO END "TOO BIG TO FAIL": AN ASSESSMENT OF THE DODD-FRANK ACT FOUR YEARS LATER, REPORT PREPARED BY THE REPUBLICAN STAFF OF THE COMMITTEE ON FINANCIAL SERVICES, U.S. HOUSE OF REPRESENTATIVES (JULY 2014).

[278] U.S. DEP'T OF THE TREASURY, REPORT TO THE PRESIDENT OF THE UNITED STATES, ORDERLY LIQUIDATION AUTHORITY AND BANKRUPTCY REFORM (Feb. 21, 2018).

resolution plan under Title I of the Dodd-Frank Act.[279] Other large financial institutions would also be remitted to a Bankruptcy Code process, but the process might be "disorderly" because such institutions would not have been required to prepare a resolution plan under Title I.[280] One of the lessons learned from the Lehman Brothers bankruptcy was that the lack of advance planning for the possibility of a bankruptcy filing increased both the losses in the bankruptcy proceeding and the collateral damage suffered by the wider financial system.[281] The Title I resolution plan requirement is intended to address this problem.

Another lesson learned in the Lehman Brothers bankruptcy was the "massive destruction of value" for the bankruptcy estate that resulted from the immediate close-out and sale of collateral by the derivative counterparties of Lehman Brothers.[282] Derivative contracts and other financial contracts are excluded from the automatic stay in the Bankruptcy Code. Title II of the Dodd-Frank Act includes a provision intended to address this problem. Title II provides for

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[279] Nonbank financial companies designated by the FSOC under Title I (currently, there is only one company so designated, Prudential Financial, Inc.) and certain large bank holding companies (currently, those with $100 billion or more in total consolidated assets) must prepare resolution plans (or so-called "living wills") under Title I demonstrating that they can be resolved in an orderly fashion under the Bankruptcy Code. *See* 12 U.S.C. § 5365(d). For a detailed discussion of how developments under the resolution plan requirement in Title I have affected the debate over the use of Title II, see Paul L. Lee, *Bankruptcy Alternatives to Title II of the Dodd-Frank Act – Part I*, 132 Banking L. J. 437 (2015) & *Part II*, 132 Banking L. J. 503 (2015).

[280] A company that derives at least 85 percent of its total consolidated revenues from financial activities as defined in the Dodd-Frank Act would also be potentially eligible for resolution under Title II even if the company had not been designated by FSOC as a systemically important financial institution under Title I. *See* 12 U.S.C. §§ 5382(b) & 5383(b)(7). To invoke Title II, the Secretary of the Treasury must make various determinations, the most important of which is that the failure of the company and its resolution under applicable law such as the Bankruptcy Code would have "serious adverse effects on financial stability in the United States." 12 U.S.C. § 5383(b)(2).

[281] *See, e.g.*, Jeffrey McCracken, *Lehman's Chaotic Bankruptcy Filing Destroyed Billions in Value*, WALL ST. J., Dec. 29, 2008, at A10. See also Trustee's Preliminary Investigation Report and Recommendations, *In re Lehman Brokers Inc.* (U.S. Bankr. S.D.N.Y. Aug. 25, 2010) (recommending as a general regulatory matter that broker-dealers be required to maintain up-to-date liquidation plans); Anton R. Valukas, Report of Examiner, *In re Lehman Brothers Holdings Inc., et al.*, Chapter 11 Case No. 08-13555 (JMP) (Bankr. S.D.N.Y.), (March 11, 2010) (discussing the lack of planning for the Lehman Brothers bankruptcy filing).

[282] *See Too Big to Fail: The Role for Bankruptcy and Antitrust Law in Financial Regulatory Reform (Part I): Hearing Before the Subcomm. on Commercial and Administrative Law of the H. Comm. on the Judiciary*, 111th Cong. 72 (2009) (statement of Harvey Miller, bankruptcy counsel to Lehman Brothers).

a one-business-day stay of contractual close-out and collateral liquidation rights in the hope that the Federal Deposit Insurance Corporation (the "FDIC") as receiver under Title II for the failing company might be able during the stay period to transfer the derivatives book to an acquirer or to a "bridge company" created by the FDIC to take over parts of the operation of the failed company.[283] Title II also contains a provision that limits the effect of certain cross-default provisions in contracts entered into by affiliates of the failing company.[284]

Amendments to the Bankruptcy Code have been proposed to incorporate a temporary stay on close-out and collateral liquidation rights, to deal with cross-defaults in affiliate contracts and to authorize the use of a bridge company to assume the derivatives book.[285] These amendments have not yet been enacted. To preserve the option of using a Bankruptcy Code resolution rather than Title II for the largest banking organizations, the U.S. bank regulators have required banking organizations that are designated as global systemically important banking organizations to enter into contractual provisions with their counterparties providing for a temporary stay of close-out and collateral liquidation rights and limiting cross-default rights in affiliate contracts on terms paralleling those in Title II.[286] Financial institutions other than those designated as global systemically important banking organizations are not subject to these regulatory requirements. If such an institution were to file for bankruptcy, it might face the prospect of a mass close-out and liquidation of its derivatives and other financial contracts. This was precisely the prospect that LTCM's largest counterparties were seeking to avoid when they rescued LTCM. The U.S. regulatory requirements address this issue only for companies that are designated as global systemically important banking organizations.[287]

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[283] 12 U.S.C. § 5390(c)(10)(B) (2017) (one-business-day stay provision); 12 U.S.C. § 5390(h) (bridge company provision).

[284] 12 U.S.C. § 5390(c)(16) (2017) (affiliate cross-default provision).

[285] *See* Lee, *Part II*, *supra* note 279, for a more detailed discussion of the proposed changes to the Bankruptcy Code.

[286] *See* Restrictions on Qualified Financial Contracts of Systemically Important U.S. Banking Organizations and the U.S. Operations of Systemically Important Foreign Banking Organizations, 82 Fed. Reg. 42,822 (Sept. 12, 2017); Mandatory Contractual Stay Requirements for Qualified Financial Contracts, 82 Fed. Reg. 56,630 (Nov. 29, 2017). Eight U.S. bank holding companies are currently designated as global systemically important banking organizations for purposes of these requirements. In addition, the U.S. operations of five foreign banking organizations are currently designated as global systemically important foreign banking organizations for purposes of these requirements.

[287] As a practical matter, the global systemically important U.S. banking organizations

Another issue identified by the President's Working Group Report on LTCM was excessive leverage at financial institutions. As to excessive leverage at hedge funds, the President's Working Group had no specific recommendation other than relying on the risk management policies of counterparties to impose market discipline. As to excessive leverage at securities firms, the President's Working Group suggested that the SEC should explore more risk-sensitive approaches building on its "broker-dealer lite" approach to capital. The subsequent experiment with the SEC's Consolidated Supervised Entity program did not end well as a supervisory matter, but by happenstance it ended satisfactorily as a practical matter. In the course of 2008, the five large investment banks supervised by the SEC under the Consolidated Supervised Entity program ceased to operate in that form. Bear Stearns was acquired by JPMorgan Chase and became subject to the consolidated capital and leverage requirements imposed by the Federal Reserve Board on bank holding companies (and financial holding companies). The remnants of Lehman Brothers U.S. operations were acquired by Barclays and became subject to the capital and leverage requirements imposed by the Federal Reserve Board. Merrill Lynch was acquired by Bank of America and became subject to consolidated capital and leverage requirements imposed by the Federal Reserve Board. Morgan Stanley and Goldman Sachs themselves became bank holding companies (and financial holding companies) subject to consolidated capital and leverage requirements imposed by the Federal Reserve Board. As a result of these actions, the largest investment banking operations are now within the perimeter of consolidated supervision by the Federal Reserve Board.

The Dodd-Frank Act also directed the Federal Reserve Board to impose "enhanced" capital, leverage and liquidity requirements on large bank holding companies.[288] The largest investment banking operations, which are now parts of the largest bank holding companies, are subject to these enhanced capital, leverage and liquidity requirements pursuant to regulations issued by the Federal Reserve Board under the Dodd-Frank Act. In addition to a standard leverage ratio test (based on balance sheet assets), the largest bank holding

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represent most of the activity in the derivatives market. Four of the largest U.S. banking organizations represent 89.8% of the total banking industry notional amounts and 86.5% of the net current credit exposure on derivatives. OFFICE OF THE COMPTROLLER OF THE CURRENCY, QUARTERLY REPORT ON BANK TRADING AND DERIVATIVE ACTIVITIES FIRST QUARTER 2018 3 (2018).

[288] Dodd-Frank Act § 165(a) (codified at 12 U.S.C. § 5365(a)(2017)). Section 165(a), as originally enacted, made bank holding companies with $50 billion or more in total consolidated assets subject to certain enhanced prudential standards. By legislative amendment in 2018, the $50 billion threshold in section 165(a) has been revised to $100 billion effective as of May 2018 and to $250 billion effective as of November 2019. *See* Pub. L. No. 115-174 (2018).

companies are now also subject to a supplementary leverage ratio test that covers not only balance sheet exposures, but also various off-balance-sheet exposures such as OTC derivatives.[289] Global systemically important banking organizations are subject to a so-called "G-SIB" capital surcharge as well as a so-called "TLAC" (meaning total loss absorbing capacity) requirement.[290]

The Federal Reserve Board has also imposed consolidated liquidity requirements on large bank holding companies (i.e., those with $250 billion or more in total consolidated assets or $10 billion or more in on-balance sheet foreign exposure).[291] The combined effect of these and other enhancements to regulation such as capital plan requirements and the Federal Reserve Board's annual Comprehensive Capital Analysis and Review (CCAR) has been to significantly strengthen the regulated banking sector, making it far more resilient to financial events and far less vulnerable to a financial crisis. Systemically important U.S. banking organizations, for example, have increased their Tier 1 capital by more than 40 percent since 2009 and their high-quality liquid assets (relevant to their liquidity requirements) by more than 85 percent since 2010.[292]

The regulatory and supervisory changes made in response to the 2008-2009 financial crisis are now undergoing a re-evaluation with greater tailoring or recalibration already having been effected by legislative amendment in May 2018 and with more in the offing as an administrative matter. Even with this

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[289] A supplementary leverage ratio of 3 percent applies to bank holding companies with $250 billion or more in total consolidated assets (or $10 billion or more in on-balance sheet foreign exposure) and an "enhanced" supplementary leverage ratio of 5 percent applies to global systemically important banking organizations. *See* Regulatory Capital Rules: Regulatory Capital, Enhanced Supplementary Leverage Ratio Standards for Certain Bank Holding Companies and Their Subsidiary Insured Depository Institution, 79 Fed. Reg. 24,528 (May 1, 2014). The Federal Reserve Board has recently proposed changes to the enhanced supplementary leverage ratio standards. *See* 83 Fed. Reg. 17,317 (April 19, 2018).

[290] 12 C.F.R. § 217.400 *et seq.* (2018) (G-SIB capital surcharge). The TLAC requirement establishes required levels of equity and loss-absorbing long-term debt at the top-tier holding company level of a systemically important banking organization. The loss-absorbing long-term debt component of TLAC is to provide debt that can effectively be converted into equity in the event of significant financial difficulty occurring at the banking organization. 12 C.F.R. §252.60 *et seq.* (2018) (TLAC requirement).

[291] 12 C.F.R. § 249.1(b) (2018). A less stringent version of liquidity requirements currently applies to bank holding companies with total consolidated assets between $100 billion and $250 billion. 12 C.F. R. § 249.60 (2018).

[292] *Examining Capital Regimes for Financial Institutions: Hearing Before the Subcomm. on Financial Institutions and Consumer Credit of the H. Comm. on Financial Services*, 115th Cong. 2-4 (2018) (statement of Kevin Fromer, Pres. & CEO, Financial Services Forum).

tailoring or recalibration, the changes to the regulatory and supervisory system, particularly for the banking sector, made by the Dodd-Frank Act have significantly enhanced the capacity of the system to respond to adverse financial events. The enhanced regulatory and supervisory measures adopted in response to the 2008-2009 crisis have addressed many of the issues that were identified at the time of the LTCM episode, but were not addressed at the time. The financial crisis of August and September 1998 passed comparably quickly and did not spread to the larger U.S. economy as the financial crisis of 2008-20009 did. As a result, the financial crisis in 1998 did not provoke the kind of public call for action that the financial crisis of 2008-2009 did. Some observers might suggest that in 1998 we let a good crisis go to waste by not enacting any reforms. We did not make the same mistake after the financial crisis in 2008-2009. The reforms adopted in the Dodd-Frank Act have resulted in a long-term strengthening of the U.S. financial system.

Appendix

Section 1

Information Collected	Purpose
Identifying information about the investment adviser, including its name and the name of any related persons, and basic aggregate information about the adviser including assets under management.	To track size of advisers, nature of activities, size of assets managed, whether assets are managed or owned, and distribution of assets among funds.
For each fund managed, (*i*) gross and net assets under management; (*ii*) notional value of derivative positions; (*iii*) borrowings, including a breakdown by U.S. creditor and financial institution; (*iv*) percentage of equity held by the five largest holders; (*v*) value of the fund's investments in other funds and in parallel accounts managed alongside the fund; (*vi*) performance; (*vii*) gross and net management fees and other incentive fees and allocations; (*viii*) assets and liabilities classified by fair value hierarchy as per U.S. generally accepted accounting principles; and (*ix*) percentage beneficially owned by certain kinds of investors.	To monitor systemic trends like how funds perform and exhibit correlated performance under different market conditions and whether specific kinds of funds take risks that may have systemic implications. To examine borrowing practices, liquidity, and maturity mismatch.

For hedge funds managed, (*i*) investment strategy; (*ii*) percentage of fund's assets managed using high-frequency strategies; (*iii*) significant counterparty exposures, including identity of counterparties; (*iv*) trading and clearing practices; and (*v*) description of activities conducted outside the securities and derivatives markets.	To study counterparty exposures, correlation of strategies with market stresses, and activities conducted outside regulated exchanges and clearing systems.

Section 2

Information Collected	Purpose
Aggregate information on the (*i*) value of invested assets in specific categories of securities and commodities; (*ii*) duration and weighted average tenor or 10-year bond equivalent of fixed income portfolio holdings; (*iii*) turnover value of certain kinds of asset classes during the applicable reporting period; and (*iv*) geographical breakdown of investments held.	To observe asset classes in which hedge funds invest in and identify trends in exposures and concentrations that are building or transitioning over time. To examine hedge fund's role as a source of liquidity.
For hedge funds with at least $500 million of net asset value as of the month prior to the reportable fiscal quarter: • Certain information above must be further broken down by each qualifying hedge fund. This includes portfolio liquidity, holdings of unencumbered cash, concentration of positions, and some financing information. • The fund's practices with respect to collateral and whether the fund clears hedges through a central clearing counterparty.	To monitor (*i*) composition of exposures and liquidity overtime; (*ii*) credit counterparties' unsecured exposures to hedge funds; (*iii*) the hedge fund's exposure to counterparties and ability to respond to market stresses; (*iv*) interconnections overtime; (*v*) leverage; and (*vi*) a hedge fund's susceptibility to failure because of redemptions during periods of market stress.

• Hedge fund metrics, including value-at-risk and any other additional risk metrics that the adviser considers important. The adviser must additionally include the impact on the fund's portfolio holdings from specified changes to certain market factors.

• Specific financing information, including breakdown of secured and unsecured borrowings; value of collateral; credit support posted; types of creditors; and identity of, and amount owed to, creditors to which the fund owes an amount greater than 5% of the fund's net asset value. • Total notional derivative exposure, including mark-to-market value of uncleared derivatives and value of posted collateral to support credit lines.

• Information on investors' composition and liquidity, including side-pocket and gating arrangements.

• Percentage of fund's net asset value that is locked in for different time periods.