

Rogue Traders: Lies, Losses, and Lessons Learned



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Rogue trading has always been a hazard of market culture. Risk-taking is rewarded and minor infractions ignored. There is also an unwillingness to lose face, leading to further losses by traders trying to conceal an earlier error. Compounding these cultural issues, banks are hazarding ever larger amounts of their own capital on complex products.¹

Over the past few months, several financial firms have suffered significant economic losses apparently due, at least in part, to employees who played with “house” money and lost. In some cases, these employees acted as rogues, engaging in unauthorized trading and concealing their losses over a period of time. Sadly, these recent incidents of rogue trading are not new, and they remind us that lessons learned in the wake of past scandals are worth repeating.

This paper (i) reviews some of the more significant rogue trader scandals over the past two decades, and (ii) highlights some of the key lessons learned from those scandals – such as the need for robust review of trading activity by both front- and back-office staff, the critical role of risk managers, and the importance of knowledgeable supervisors who understand how traders are making money. Given recent market events, it may be worthwhile for firms to review their current systems and processes in light of past lessons.²

I. A Brief Chronology of Recent Rogue Trader Scandals

Rogue trader scandals are not a new phenomenon – indeed, as early as 1884, two rogue traders at the U.S. firm of Grant & Ward caused a national panic by illegally rehypothecating securities that already had been posted as collateral for margin purposes.³ The firm failed after this fraudulent conduct was discovered, ending up with liabilities of \$16 million and assets of only \$7 million. More recent rogue trader scandals have

¹ *The Top Rogue Traders*, FIN. TIMES (Jan. 24, 2008), available at 2008 WLNR 1340934.

² See also **Appendix A, “Lessons Learned” Checklist**.

³ Jerry W. Markham, *Guarding the Kraal – On the Trail of the Rogue Trader*, 21 J. CORP. L. 131, 136 (1995).

generated equal publicity and panic, causing billions of dollars in losses of firm capital. Below is a summary of some of the more notable cases.⁴

A. Daiwa Bank & Toshihide Iguchi: In 1984, Toshihide Iguchi began trading U.S. government bonds at Daiwa Bank's New York branch office. By 1989, he had lost more than \$575 million. Iguchi covered his losses by selling bonds the branch was holding in custodial accounts and then falsifying the records. By the time that Iguchi's fraudulent activity was disclosed in 1995, he had accumulated \$1.1 billion in unauthorized trading losses. Subsequently, Daiwa Bank was fined heavily, and the Federal Reserve ordered it to end all of its operations in the United States.⁵

B. Barings Bank & Nick Leeson: In 1992, a twenty-seven-year-old trader in the Singapore office of Barings Bank ("Barings"), Nick Leeson, lost over \$1 billion of the firm's money through transactions in futures contracts. Initially, Leeson had made large profits for the bank by dealing in derivatives and futures. After experiencing losses, however, he used an error account to disguise his bad trades. Because Leeson was involved in the settlement of his own trades, he was able to sustain this scheme until he left the firm in 1995. As a result of Leeson's losses, Barings eventually was declared bankrupt and sold to the ING Group.⁶

C. Allied Irish Bank & John Rusnak: In 1993, John Rusnak was hired by Allfirst Financial Inc. ("Allfirst"), the Baltimore-based subsidiary of Allied Irish Bank. Rusnak was hired to conduct an arbitrage trading strategy between foreign exchange options and the spot and forward markets. He claimed that he could make money by running a large options book hedged in the cash markets. In reality, however, his trading was directional and he sustained substantial losses at some point in 1997 by betting mainly on the Japanese yen. Rusnak hid his losses over several years by using fictitious options contracts. In addition, he manipulated the firm's Value at Risk ("VaR") calculation – the primary measure used by Allfirst to monitor his trading. It took until 2002 before routine checks finally uncovered the true extent of the firm's exposure. By that time, Rusnak had vastly exceeded his trading limit, secretly betting \$7.5 billion of firm capital on the yen rising against the dollar.⁷

D. Kidder, Peabody & Co. Incorporated ("Kidder") & Joe Jett: From a period beginning in November 1991 through March 1994, Joseph Jett, the former head of Kidder's government trading desk, conjured up \$350 million in phantom profits in a scheme to mask \$100 million in losses. Jett was a fixed income trader who was involved in exchanging Treasury securities known as strips ("STRIPs") for whole bonds (or "recon" transactions). He also entered trading contracts that involved the future exchange of STRIPs for bonds. It was through these forward contracts that Jett was able to conceal his

⁴ Any factual statements regarding the individuals or firms identified in this paper are based on allegations by regulators and/or reports examining their conduct.

⁵ Dick K. Nanto et al., *The Daiwa Bank Problem: Background and Policy Issues*, CRS Report for Congress 95-1164 E (Nov. 30, 1995) ("Report for Congress on Daiwa Bank"), available at <http://digital.library.unt.edu/govdocs/crs/permalink/meta-crs-202:1>.

⁶ Marcus W. Brauchli et al., *Broken Bank: Barings PLC Officials May Have Been Aware of Trader's Position*, WALL ST. J., Mar. 6, 1995; John Gapper and James Blitz, *Failure of Controls Sank Barings*, FIN. TIMES, July 19, 1995. See also Bank of England, Report of the Board of Banking Supervision Inquiry Into the Collapse of Barings, Ordered by the House of Commons, Her Majesty's Stationery Office (July 18, 2005) ("Bank of England Report").

⁷ Report to the Boards of Allied Irish Banks, p.l.c., Allfirst Financial Inc., and Allfirst Bank Concerning Currency Trading Losses Submitted by Promontory Financial Group and Wachtell, Lipton, Rosen & Katz (Mar. 12, 2002) ("Ludwig Report"), available at http://www.aibgroup.com/servlet/BlobServer?blobkey=id&blobwhere=1015597173380&blobcol=url_file&blobtable=AIB_Download&blobheader=application/pdf&blobheadername1=Content-Disposition&blobheadervalue1=document.pdf.

trading losses, by extending them again and again and recording phantom profits. He was able to perpetrate this fraud by exploiting a weakness in Kidder’s trading and accounting systems, which recognized a profit in connection with recons entered for settlement more than one business day forward. After the scandal, Kidder was sold to the Paine Webber Group.⁸

E. Société Générale (“SocGen”) & Jerome Kerviel: In early 2008, it was alleged that a Paris-based trader at SocGen, Jerome Kerviel, accumulated more than \$7 billion in losses by taking directional bets in the marketplace on so-called “plain vanilla” futures transactions and concealing his losses through the use of fictitious transactions in the opposite direction. Allegedly, Kerviel set up fictitious trades that cancelled out the risk from his huge bets on European stock market futures, covering up his true exposure to market movements. He was able to evade scrutiny from the middle office by omitting the name of the counterparty itself – known as “pending.” He also used time-dependent securities such as warrants for counterparties (because warrants were not confirmed by the back office until a few days before they expired). As a result of Kerviel’s alleged unauthorized trading, SocGen ended up with a position of €50 billion, and announced plans for a €5.5 billion capital increase.⁹

II. Lessons Learned

In the wake of the rogue trader scandals discussed above, there were post-mortem analyses, reports by independent parties, findings by special committees, and even Congressional hearings. In particular, following the disclosure of Rusnak’s fraudulent conduct, Allied Irish Banks commissioned Eugene Ludwig, a former U.S. Comptroller of the Currency, to provide an independent report (“Ludwig Report”) on what had gone wrong.¹⁰ Also, after the disclosure of Jett’s wrongful conduct, Kidder commissioned Gary Lynch, a former Director of the Division of Enforcement of the Securities and Exchange Commission (“SEC”) to provide an independent report (“Lynch Report”).¹¹ More recently, losses in the financial markets stemming from the subprime market collapse have triggered their own series of reports and recommendations on risk management and supervision, most notably the President’s Working Group on Financial Markets (“PWG”) and the Senior Supervisors Group (which is an international group of financial regulators, including the SEC, Federal Reserve Bank of New York, and the Office of the Comptroller of the Currency).¹²

Through these analyses, recommendations, and findings, several key risk management and supervisory control lessons emerge:

A. Setting the Right Tone from the Top: Senior Management and Boards Must Encourage a Culture of Compliance and Responsible Risk Taking. Collectively, these rogue trader cases and the subsequent analyses of them underscore the importance of setting the right “tone from the top.” In

⁸ See *In the Matter of Orlando Joseph Jett*, Exchange Act Release No. 49,366 (Mar. 5, 2004); Report of Inquiry Into False Trading Profits at Kidder, Peabody & Co. Incorporated Submitted by Gary G. Lynch, Davis Polk & Wardell (Aug. 4, 1994) (“Lynch Report”).

⁹ *Chronology – Timeline of Events in SocGen Fraud Case*, REUTERS NEWS (Jan. 29, 2008); *Hard-hitting Lagarde Points up Lack of Control*, FIN. TIMES (Feb. 4, 2008).

¹⁰ See Ludwig Report, *supra* note 7.

¹¹ See Lynch Report, *supra* note 8.

¹² Policy Statement of the President’s Working Group on Financial Markets (Mar. 13, 2008) (“PWG Policy Statement”), available at http://www.ustreas.gov/press/releases/reports/pwgpolicystatemkkturmoil_03122008.pdf; Senior Supervisors Group, *Observations on Risk Management Practices during the Recent Market Turbulence* (Mar. 6, 2008) (“Senior Supervisors Report”), available at http://www.newyorkfed.org/newsevents/news/banking/2008/SSG_Risk_Mgt_doc_final.pdf.

particular, senior management and boards of directors should emphasize integrity, and compliance concerns must be raised to independent functions within the firm and investigated and resolved – regardless of who is involved and how profitable the business unit appears to be. This policy should be communicated to all employees. In the case of Allied, Kidder, and Daiwa Bank, in particular, senior management ignored signs of potential wrongdoing and failed to establish robust controls or an environment of honesty and accountability. As a result, rogue traders at these firms were able to cover up losses and perpetuate fraud for years. As noted in the Lynch Report, some of those who had questions about Jett’s trading at Kidder stated that they were reluctant or unsure how to report their concerns about his trading.

In addition to emphasizing compliance and control, senior management and boards should play an active role in encouraging responsible risk taking. In its discussion of the causes of the current subprime market turmoil and losses to firm capital, the Senior Supervisors Report noted, in particular, the relevance of management. Firms that were more successful in mitigating losses through year-end 2007 had senior managers who played an active role in (i) identifying and understanding material risks, (ii) acting on that understanding to mitigate excessive risks, and (iii) surmounting organizational structures that tended to delay, divert, or distort the flow of information up the management chain of the firm.

B. Senior Managers Must Understand the Complexities of the Products Their Firms Trade.

Perhaps the most obvious, but fundamental, lesson is that proprietary trading is a high-risk activity, and not just for market risk reasons. The potential operational and market risks may outweigh the potential market returns, perhaps greatly. Given these risks, the Ludwig Report and other analyses have noted that it is critical that supervisors understand their traders’ strategies, the quantitative models, and mathematics of the products they trade – particularly before allocating more of the firm’s capital to those traders. Trading management should discuss trading rationale and strategy on a regular basis with traders. Also, directors should be adequately knowledgeable about derivatives and risk management to appreciate the risks that might lead to material trading losses.

The lack of knowledgeable senior management was, in particular, an issue at Allied Irish/Allfirst and Kidder. As noted in the Ludwig Report, the individuals who were charged with supervising Rusnak did not understand how he was making money with the firms’ capital. In the case of Kidder, the Lynch Report described a trading scheme that was so arcane that no one but Jett understood it – yet the firm allowed it to persist. According to that report, Jett’s “supervisors . . . never understood Jett’s daily trading activity or the source of his apparent profit.”¹³

C. Strong Business Line Supervisory Controls Are Essential. Business supervisors are the front-line defense against any authorized, fraudulent, or excessively risky trading. In that regard, the Ludwig Report recommended a number of supervisory controls to help detect and prevent such trading, including: (i) daily review of trades by a registered and qualified supervisor (which include not only the summary of the profit and loss in each ledger, but also the actual trade tickets or a computerized summary of the information that would include all pertinent information on a trade ticket); (ii) reviews of exception reports, which would show unusually large transactions, large profit and loss (“P&L”) swings, unusual settlement terms, and major counterparty activity; and (iii) procedures for the creation,

¹³ See Lynch Report, *supra* note 8.

monitoring, and enforcement of position and trading limits (and intraday monitoring to ensure that traders stay within these guidelines).

The Ludwig Report also recommended that, for each product a firm trades, the firm should document the market strategy, establish credit, trading, clearing, and settling procedures in advance, and then monitor results against document strategy. In the case of Jett and Rusnak, a comparison of the documented trading strategy with their unusually large P&Ls would have prompted investigation by their supervisors. Where there are exceptions, supervisors should not only inquire about the reasons for these exceptions, but also independently test the trader's explanation. For example, as noted in the Lynch Report, although Jett was occasionally questioned about his large P&L swings, his explanations were never independently verified by his supervisors.

D. Successful Traders May Require More, Not Less, Scrutiny. Turning a blind eye when it comes to top employees generating huge profits is an old story – but a costly lesson. As noted by former SEC Chairman, Arthur Levitt, Jr.: “I have found that where you have a firm where one person or a small group of people are contributing an inordinate amount of profitability to the enterprise, then that is a warning sign that should be examined closely.”¹⁴ Indeed, in the case of Kidder, the Lynch Report noted a failure on the part of Jett's managers and auditors who were “unwilling to ask hard questions” or investigate irregularities in Jett's trading. As further noted in that report, “[e]mployees throughout the firm appear to have deferred to the success of the fixed-income division and had been unwilling to ask hard questions about Jett, the division's rising star.” Similarly, in the Barings collapse, the Bank of England investigation found that “management failed at various levels and in a variety of ways to institute a proper system of internal controls, to enforce accountability. . . . to follow up on a number of warning signals over a prolonged period.” Years later, Leeson noted in an interview that “Barings would never have collapsed without the incompetence of others who should have known what was going on but either failed to detect it, didn't properly investigate, or turned a blind eye.”¹⁵

E. Management Should Ensure that Incentive Systems Don't Encourage Excessive Risk. Incentive systems may be important in managing risks associated with proprietary trading. For example, in the case of Kidder: Jett was given a bonus of \$11 million over two years, based primarily on bogus profits he appeared to have generated (when, in reality, he generated \$100 million in losses).¹⁶ His supervisor (and former head of fixed income at Kidder) earned \$28 million in bonus, salary, and other compensation during that period. Compensation also appeared to be a factor in Rusnak's trading at Allfirst. Indeed, the Ludwig Report recommended, among other things, that compensation arrangements with traders should be more in line with the market, and leave management with discretion so that factors other than trading performance can be taken into account when determining annual compensation.

¹⁴ Kurt Eichenwald, *Learning the Hard Way How to Monitor Traders*, N.Y. TIMES, D1 (Mar. 9, 1995). One of the more prominent examples of the importance of scrutinizing successful traders and business units is Michael Milken at Drexel Burnham Lambert (“Drexel”). In 1990, the SEC settled a civil action against Milken, alleging that he devised and carried out a fraudulent scheme involving insider trading, stock manipulation, fraud on Drexel's clients, failure to make required disclosures of beneficial ownership of securities, and violations of the margin rules, as well as other violations. Through this scheme, he was able to amass huge profits. See *SEC v. Michael R. Milken et al.*, Litigation Release No. 12454, 46 S.E.C. Docket 139 (Apr. 24, 1990), available at 1990 WL 311705.

¹⁵ Davis D. Janowski, *Rogue Trader Nick Leeson Signs for Software Firms*, INVESTMENT NEWS, Vol. 11, Issue 41 (Oct. 29, 2007).

¹⁶ David E. Kalish, *Jett Boss Says He Didn't Know of Profit Strategy Until Late*, ASSOCIATED PRESS (May 30, 1996).

Similarly, in Congressional testimony regarding Iguchi's fraudulent trading at Daiwa Bank, it was noted that firms should better align traders' interests with the long-term interests of the firm by carefully designing their trader compensation programs so that they do not reward imprudent risk-taking. In particular, it was suggested that senior management should consider several factors when establishing or reviewing compensation programs and determining bonuses, such as: (i) the employee's compliance with firm policies, laws, and regulations; (ii) performance relative to the firm's stated goals and quality of earnings (*e.g.*, risk-adjusted returns); (iii) competitors' compensation practices for similar roles; (iv) individual's overall performance; and (v) the levels of risk inherent in and caused by the relevant trading activity.¹⁷

More recently, the Institute of International Finance (a global association of banks) floated the idea of establishing a code of best practice that would (among other things) discourage banks from giving incentives to traders to take excessively risky bets. Others have suggested deferring bonuses until the full impact of a trader's strategy is clear, to prevent the trader from benefiting from short-term, high-risk bets that may go bad.¹⁸

F. Vacations Are a Good Thing. Management and supervisors should consider requiring traders to take mandatory vacations. According to media reports regarding SocGen, Kerviel neither took the mandatory holiday breaks, nor allowed other traders to monitor his portfolios when he did take time off.¹⁹ Indeed, he only took four days of vacation in 2007 – something that should have been a warning sign to his supervisors, according to Kerviel. As noted by one source, Kerviel attributed his ability to avoid detection to (among other things) his lack of vacations, and recently noted that “a trader who doesn't take vacation is a trader who doesn't want to leave his book to someone else.”²⁰ Indeed, in a newsletter following the revelations of Kerviel's unauthorized trading, the U.K.'s Financial Services Authority recommended that firms require two-week holidays, which would allow other colleagues to inspect traders' books and ensure they were valued correctly.²¹

G. Risk Managers Should Be Encouraged to Challenge Traders' Valuations. Risk managers and other persons charged with verifying traders' positions should be encouraged to question those valuations when they appear idiosyncratic – regardless of whether or not the trader is successful. Some commentators recently have noted that an industry culture of deference by risk managers to successful traders may contribute to pricing failures and overly optimistic valuations on firms' books.²²

¹⁷ Eugene Ludwig, Comptroller of the Currency, *Testimony Before the H. Subcommittee on Financial Institutions and Consumer Credit of the Committee on Banking and Financial Services* (Dec. 5, 1995), available at <http://www.occ.treas.gov/ftp/release/95-133.txt>.

¹⁸ Gillian Tett et al., *Bankers Plan Pay Code to Head Off Backlash*, FT.COM (Mar. 4, 2008). See also Raghuram Rajan, *Bankers' Pay Is Deeply Flawed*, FT.COM (Jan. 8, 2008). That being said, compensation is not the only motivation to engage in rogue trading – as evidenced by Kerviel, who appears to never actually have profited from his trades at SocGen.

¹⁹ Gregory Viscusi and Anne-Sylvaine Chassany, *Kerviel's 2007 Bets Raise SocGen Oversight Questions*, Bloomberg.com (Feb. 19, 2008).

²⁰ *Id.*

²¹ Financial Services Authority, *Markets Division: Newsletter on Market Conduct and Transaction Reporting Issues*, Issue No. 25 (Mar. 2008), available at http://www.fsa.gov.uk/pubs/newsletters/mw_newsletter25.pdf.

²² Chris Hughes, *Deference May Explain Trading Failure*, FIN. TIMES (Feb. 21, 2008).

In the Senior Supervisors' Report, it also was noted that firms that fared better during the subprime market collapse applied an independent and rigorous valuation practice across their firms. When these firms reached decisions on values, they sought to use those values consistently across the firm, including for their own and their counterparties' positions. Some of these firms also tested their valuation estimates by selling a small percentage of the relevant assets to observe a price or by looking for other clues, such as disputes over the value of the collateral, to assess the accuracy of their valuations. In contrast, firms that suffered the most losses did not observe a rigorous practice of valuing assets (e.g., continuing to price the super-senior tranches of credit default obligations at or close to par, despite observable deterioration in the performance of the underlying residential mortgage-backed securities collateral and declining market liquidity).

H. Operations, Risk Management, and Compliance Reporting Lines Should Be Separate from the Business Lines. A key to a successful reporting structure is the complete segregation of duties from the front and back offices. One framework or organizational structure for overseeing trading activities should involve three distinct groups – the front office, the back office, and compliance. According to the Ludwig Report, operations and risk control personnel should report separately to the chief executive officer up through the chief financial officer or another senior executive, but such reporting should be independent of the business line. Further, firms may consider requiring special vetting for staff who move from back-office functions to become traders.

In the case of Barings, Leeson managed the back office, so there was opportunity to manipulate settlement and other reports. Similarly, in the case of SocGen, Kerviel allegedly was able to build up undetected losses by exploiting his knowledge of back-office systems and processes gained as a former middle-office employee.²³ Also, like Kerviel, Iguchi rose through the ranks, moving from the back office to become a trader. A lack of segregation within his division allowed him to hide his losses from his superiors.

I. Dual or Matrix Reporting Lines Must Be Clear. The relationship between parent companies and overseas units needs to be clear. If there are dual reporting lines or a matrix reporting structure, there must be unambiguous accountability, so that issues do not fall through the cracks and employees cannot exploit ambiguities in reporting structures. For example, with Barings, the Bank of England Report noted that no one appeared to carry out his or her responsibility to supervise Leeson in Baring's Singapore office, due in part to the absence of clear lines of authority. Also, in the case of Allfirst, it was not clear who was accountable to whom, and the reporting lines within Allfirst and between Allfirst and Allied Irish Banks were blurred. This lack of clarity was a key weakness cited in the Ludwig Report, which contributed to Rusnak's ability to perpetuate his fraud.

J. Strong Back-Office Controls Are as Essential as Front-Office Controls. By ensuring that proper back-office controls are in place, firms and their supervisors can greatly decrease the likelihood that unauthorized activity will continue undetected. In particular, the Ludwig Report recommended that back-office personnel should prepare daily reports and reports for periodic distribution to senior management, which should include (i) daily P&L movements, (ii) statistics relevant to indicate growing operational issues such as unconfirmed trades and unreconciled accounts, and (iii) counterparties' open

²³ Allison Hanes, *Kerviel Joins Ranks of Master Rogue Traders*, NAT. POST (Jan. 25, 2008).

transactions. This report also recommended that formal alert reports on open items should be developed.²⁴

As an additional matter, it is critical that traders and other front-office personnel do not have access to systems that allow them to manipulate trading information, pricing data, and pricing models. The source of client and counterparty data should be independent from the front office and validated and input independently. In the case of Allfirst, Rusnak was able to hide his fraud by directly manipulating the inputs into the calculation of the VaR – the principal measure used by Allfirst to monitor his trading – that were used by an employee in Allfirst’s control group. Thus, while that employee was supposed to independently check the VaR, she relied on a spreadsheet that obtained information from Rusnak’s personal computer and that included figures for bogus trades that were not even entered in the bank’s trading software (they were just used to manipulate the spreadsheet used to calculate VaR).

K. Effective Risk Management Architecture is Critical. Risk management structure and practice that are flawed can quickly transform market risk exposures into significant economic losses for a firm.²⁵ Because risk and risk taking are inherent in proprietary trading and it is easy to lose a great deal of money, commentators have emphasized that it is critical for proprietary trading operations to use the best information technology and systems available. Also, periodic reviews of these systems should be conducted and any deficiencies and reports of how deficiencies have been addressed should be presented to audit or other appropriate committees. For example, following Iguchi’s losses at Daiwa Bank, it was observed in Congressional testimony that a successful risk management system should satisfy at least four basic principles. It should: (i) be subject to active oversight by the board of directors and senior management, (ii) embody well-conceived risk identification measures and reporting systems, (iii) include comprehensive internal controls emphasizing the clear separation of duties, and (iv) incorporate a well-defined structure of limits on risk taking.²⁶

More recently, the Senior Supervisors Group noted, in its analysis of risk management during recent market turmoil, that firms that tended to deal more successfully with the turmoil through year-end 2007 adopted a comprehensive view of their exposures. This means, among other things, using information developed *across* the firm to adjust business strategy, risk management practices, and exposures promptly and proactively. In contrast, firms that experienced more significant unexpected losses at year-end 2007 allowed a more segregated approach to communications about risk management. For example, although some business line managers recognized that underwriting standards for certain mortgage-related products were loosening, other business line managers did not, and continued to add these products to the firms’ warehouse assets despite deteriorating credit quality.²⁷

²⁴ In its Progress Report, the Special Committee of the Board of Directors of Société Générale also noted that weaknesses in SocGen’s supervision and control system – in particular, the weak operational risk prevention systems – allegedly contributed to Kerviel’s ability to hide his losses and continue his fraud. *Progress Report of the Special Committee of the Board of Directors of Societe Generale* (Feb. 20, 2008), available at [http://www.sp.socgen.com/sdp/sdp.nsf/V3ID/6D44E7AEF3D68993C12573F700567904/\\$file/comiteSpecialFevrier08gb.pdf](http://www.sp.socgen.com/sdp/sdp.nsf/V3ID/6D44E7AEF3D68993C12573F700567904/$file/comiteSpecialFevrier08gb.pdf).

²⁵ For a comprehensive discussion of the risk management of financial derivative products, see Brandon Becker and Francois-Ihor Mazur, *Risk Management of Financial Derivative Products: Who’s Responsible for What?*, 21 J. CORP. L. 177 (1995).

²⁶ See Report for Congress on Daiwa Bank, *supra* note 5.

²⁷ See Senior Supervisors Report, *supra* note 12.

Also, according to the PWG's Report, the effectiveness of certain risk management practices was a key factor that differentiated institutions that sustained significant losses during the recent subprime financial crisis from institutions that avoided significant losses. In particular, firms that suffered significant losses tended to exhibit the following risk management weaknesses: (i) weak controls over potential balance sheet growth, including ineffective limits on the growth of business lines and poor monitoring of off-balance sheet exposures; (ii) inadequate communications among senior management, business lines, and risk management functions; (iii) dependence on a narrow range of risk measures that were based on assumptions that proved erroneous and on measurement processes that were difficult to alter once it became apparent that the underlying assumptions were wrong; and (iv) insufficient attention to valuation issues, including excessive reliance on credit ratings and inadequate development of models for valuing complex or potentially illiquid securities.²⁸

III. Conclusion

In sum, the lessons of the past, discussed in this paper and identified in Appendix A, highlight important steps that firms might take in order to mitigate the occurrence of unauthorized and/or fraudulent trading and to facilitate the detection of such trading. These steps may include, to name a few: (i) active management and boards who encourage a culture of compliance and responsible risk taking; (ii) senior managers who are knowledgeable about the products their firms trade; (iii) effective risk management and front- and back-office controls; (iv) independent and clear reporting lines; and (v) incentive systems that do not encourage excessive risk taking. While it is true that, in the end, no system of controls will ever be foolproof, it is equally true that a culture of honesty and accountability, robust front- and back-office controls, and effective risk management systems will help.

²⁸ See PWG Policy Statement, *supra* note 12. In February 2007, the PWG also issued a statement of principles discussing, among other things, risk management practices when dealing with hedge fund counterparties. For a discussion of these practices, see Agreement Among PWG and U.S. Agency Principals on Principles and Guidelines Regarding Private Pools of Capital (Feb. 22, 2007), available at http://www.treasury.gov/press/releases/reports/hp272_principles.pdf.

1. Appendix A: “Lessons Learned” Checklist

- A. Setting the Right Tone from the Top: Senior Management and Boards Must Encourage a Culture of Compliance and Responsible Risk Taking.
- B. Senior Managers Must Understand the Complexities of the Products Their Firms Trade.
- C. Strong Business Line Supervisory Controls Are Essential.
- D. Successful Traders May Require More, Not Less, Scrutiny.
- E. Management Should Ensure that Incentive Systems Don't Encourage Excessive Risk.
- F. Vacations Are a Good Thing.
- G. Risk Managers Should Be Encouraged to Challenge Traders' Valuations.
- H. Operations, Risk Management, and Compliance Reporting Lines Should Be Separate from the Business Lines.
- I. Dual or Matrix Reporting Lines Must Be Clear.
- J. Strong Back-Office Controls Are as Essential as Front-Office Controls.
- K. Effective Risk Management Architecture Is Critical.

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