

OTC DERIVATIVES & SYSTEMIC RISK: INNOVATIVE FINANCE OR THE DANCE INTO THE ABYSS?*

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** The author would like to thank SEC Commissioner J. Carter Beese, Jr. Without the benefit of Commissioner Beese's guidance and encouragement, this Comment would not have come to fruition. The author also wishes to thank Ashley Allen, Niall O'Toole, Chris Sakach, and Steve Vinson for thoughtful comments on early drafts, and Howard Baker, Tanya Beder, Michael Farr, Burt Kozloff, Jeff Landle, Claire McGrath, Fred Medero, Michael Peltz, and Bruce Rosenblum for general assistance. All views expressed in this Comment are the author's, as are all errors and omissions.

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"A billion here, a billion there, and pretty soon you're talking about real money."¹

INTRODUCTION

A revolution, spun from the minds of Wall Street "rocket scientists"² and driven by powerful new computers,³ is occurring in the global financial markets. This accelerating juggernaut is the OTC derivatives markets,⁴ a financial phenomenon that has radically altered the landscape of the global capital markets.⁵ As one commentator has noted:

[The OTC derivatives markets have] turned the world's capital markets into a global Olympic Games. Every day, barriers are broken and records set Never before have transactions

1. Lawrence B. Lindsey, *Why the 1980s Were Not the 1920s*, FORBES, Oct. 19, 1992, at 78, 78 (quoting late Illinois Senator Everett Dirksen's famous remark about government spending).

2. See Henry T.C. Hu, *Misunderstood Derivatives: The Causes of Informational Failure and the Promise of Regulatory Incrementalism*, 102 YALE L.J. 1457, 1459 (1993) [hereinafter Hu, *Misunderstood Derivatives*] (discussing innovative financial products created by Wall Street "rocket scientists"); Ida Picker, *The Daffier Side of Derivatives*, INSTITUTIONAL INVESTOR, Feb. 1993, at 94, 94 (articulating rapid innovation of "[r]estless rocket scientists"). Financial innovation is being produced almost exclusively by mathematical Ph.D.'s or individuals with science and quantitative backgrounds. See Saul Hansell, *Inside Morgan Stanley's Black Box*, INSTITUTIONAL INVESTOR, May 1989, at 204, 205 (stating that former head of derivatives trading unit at Morgan Stanley was astrophysicist); Joanna Pitman, *Swooping on Swaps*, EUROMONEY, Jan. 1988, at 68, 80 (noting derivatives teams include "physicists, mathematics Ph.d.'s, [and] technicians").

3. See Martin French, *The Comeback of the Number-Crunchers*, EUROMONEY, Oct. 1988, at 69, 71 (describing how increase in computer capabilities have fueled financial quantitative analysis); William Glasgall & Bill Javetski, *Swap Fever: Big Money, Big Risks*, BUS. WK., June 1, 1992, at 102, 102 (mentioning Sun Microsystems' workstations as integral to complex world of financial engineering); John W. Verity, *Street Smarts: The Supercomputer Becomes a Stock Strategist*, BUS. WK., June 1, 1987, at 84, 84 (relating that "supercomputers are in on Wall Street").

4. See GROUP OF THIRTY REPORT, DERIVATIVES: PRACTICES AND PRINCIPLES 28 (1993) (noting that derivatives have not only increased range of financial products available but have also created more precise ways of understanding, quantifying, and managing financial risk). For a discussion of the factors that have contributed to the mushrooming growth of new financial products, see STUDY GROUP ESTABLISHED BY THE CENTRAL BANKS OF THE GROUP OF TEN COUNTRIES, BANK FOR INTERNATIONAL SETTLEMENTS, RECENT INNOVATIONS IN INTERNATIONAL BANKING 169-87 (1986) (noting that forces of supply and demand have promoted creation of new financial products); Stephen A. Ross, *Institutional Markets, Financial Marketing, and Financial Innovation*, 44 J. FIN. 541, 542 (1989) (attributing growth in financial innovation in part to fact that institutional investors now dominate markets); Susan Lee, *What's with the Casino Society?*, FORBES, Sept. 22, 1986, at 150 (stating that newly created financial instruments are "mostly healthy evolutionary response to a vastly changed economic world").

5. For a discussion of the impact of derivatives on the financial capital markets, see Randall W. Forsyth, *The \$150 Billion Baby: Interest Rate Swaps Are Growing by Leaps and Bounds*, BARRON'S, Aug. 19, 1985, at 15, 15 (calling swaps "arguably the capital markets' most important development of the decade"). It is interesting that swaps were lauded as the "most important development" of the 1980s when the size of the interest rate swaps market was only \$150 billion at the close of the decade. The swaps market alone totals roughly \$3.8 trillion today, and it continues to grow exponentially. See Andrew Barry, BARRON'S, Sept. 13, 1993, at 49, 49 (reporting \$3.8 trillion size of 1992 OTC swaps market, as compiled by industry association, International Swaps & Derivatives Association, Inc.).

depended on such a fine combination of mental gymnastics, client relations and aggressive marketing . . . [these products] are the greatest challenge yet to the agile banking mind, and like the study of the universe itself, there is no horizon.⁶

This Comment begins with a discussion of the mechanics of OTC derivatives that is designed to demystify the byzantine reputation of these financial products. Part I continues with a straightforward explanation of derivatives, including a description of the prototypical "plain vanilla" interest-rate swap and the nature and motivation of participants in various derivatives transactions. Part II explores how the panoply of risks presented by the derivatives markets could lead to systemic breakdown in the global capital markets. Part III examines the treatment, both past and present, of OTC derivatives transactions under the U.S. Bankruptcy Code, the Financial Institutions Reform, Recovery, and Enforcement Act of 1989, and the Federal Depositors Insurance Corporation Improvement Act of 1991. In particular, this section scrutinizes the legal enforceability of termination and netting provisions under the U.S. bankruptcy regime. Part IV suggests three methods for reducing systemic risk that will diffuse the legislative urge to impose procrustean regulation to manage systemic risk.

I. THE MECHANICS OF DERIVATIVES

Broadly defined, a derivative product is a financial contract that "derives" its value in whole or in part from the performance of an underlying asset, including securities, currencies, rates, or indices of asset values.⁷ Derivatives are categorized according to the nature of the underlying assets or indices from which they derive their value.⁸ Most derivative instruments are classified as foreign exchange contracts, interest rate contracts, commodity contracts, or equity contracts.⁹ Constantly evolving in response to innovation and customer needs, there are few large asset classes for which a deriva-

6. David Shirreff, *The Way into any Market*, EUROMONEY, Nov. 1983, at 60, 60.

7. See Net Capital Rule, 58 Fed. Reg. 27,486 (1993) (to be codified at 17 C.F.R. Part 240); GARY L. GASTINEAU, *DICTIONARY OF FINANCIAL RISK MANAGEMENT* 87 (1992) (defining derivative products); Barbara D. Granito & Craig Torres, *Many Americans Run Hidden Financial Risk from Derivatives*, WALL ST. J., Aug. 10, 1993 at A1 (claiming that derivatives resemble ordinary investments but are actually financial arrangements rather than securities); Shirreff, *supra* note 6, at 60 (stating that derivatives transaction is bilateral contract or payments exchange agreement that "derives" value from underlying asset).

8. Federal Deposit Ins. Corp., *DERIVATIVE PRODUCT ACTIVITIES OF COMMERCIAL BANKS*, in *JOINT STUDY CONDUCTED IN RESPONSE TO QUESTIONS POSED BY SENATOR RIEGLE ON DERIVATIVE PRODUCTS 2* (1993) [hereinafter *FDIC JOINT STUDY*].

9. *Id.*

tives market does not exist.¹⁰ Well-known derivative products include futures, swaps, options, and forwards, or some combination of these contracts.¹¹ The term "derivative" may also be used to refer to esoteric instruments, such as embedded options,¹² reverse floating rate notes (inverse floaters),¹³ and indexed currency option notes (ICONS).¹⁴ It also may be used to refer to innovative exotica with names like "mambo combo,"¹⁵ "strangle,"¹⁶ "surf and turf,"¹⁷ "swaption,"¹⁸ and "death-backed bonds."¹⁹

While many derivatives are truly complex instruments, they are not as conceptually inscrutable as they appear to the uninitiated. Indeed, farmers and merchants have managed to use and understand derivatives for several thousand years.²⁰ All derivative transactions

10. See Rosemary Bennett, *Rocket Scientists Produce a Fresh Wave of Solutions*, EUROMONEY, Mar., 1993, at 46, 46 ("There are few large asset classes left with no accompanying derivatives market").

11. See generally Eli M. Remolona, *The Recent Growth of Financial Derivative Markets*, 28 FED. RES. BANK N.Y. Q. REV. 28, 28-29 (1993) (discussing different types of derivative contracts).

12. See GASTINEAU, *supra* note 7, at 97-98 (defining "embedded option" as option that is inseparable part of another instrument). Common examples of embedded options are "call provisions" in corporate bonds, which allow the issuer of the bonds to prepay the borrower before the nominal maturity of the bond, and a homeowner's option to prepay mortgage principal prior to mortgage maturity, resulting in early liquidation of a mortgage-backed security. *Id.* at 98.

13. See GASTINEAU, *supra* note 7, at 198-99 (defining "reverse floating rate note" as note structure in which rate paid goes up as market floating rates go down). For this complex derivative, the rate paid on the note is set by doubling the fixed swap rate in place at the time the contract is entered into, and subtracting the floating reference index rate for each payment period. *Id.* at 198; see also David Carey, *Hedge Hogs*, FUTURES WORLD, Mar. 16, 1993, at 51 (describing inverse floater as highly leveraged "swap piggybacking a swap," which allows bond fund managers to place big bets on drops in short-term interest rates).

14. See GASTINEAU, *supra* note 7, at 129-30 (defining "ICONS" as variation of dual currency bond with all payments in one currency but with principal payment indexed to currency exchange rate at maturity).

15. See GASTINEAU, *supra* note 7, at 146 (defining mambo combo as unusual combination of put and call that are both long or both short).

16. See GASTINEAU, *supra* note 7, at 222 (describing strangle as combination of short put and short call or long put and long call on same underlying security).

17. See GASTINEAU, *supra* note 7, at 222 (defining surf and turf as strangle with both options out of money).

18. See GASTINEAU, *supra* note 7, at 228 (describing swaption as option to enter into swap agreement).

19. See Albert R. Karr, *Bank Regulator Signals Move on Derivatives*, WALL ST. J., Apr. 21, 1994, at A3 (reporting that Comptroller of Currency Eugene A. Ludwig noted sardonically that "with such names as 'harmful warrants,' 'worthless warrants,' 'death-backed bonds,' 'limbos,' and 'heaven and hell bonds' [these products are] obviously designed to inspire confidence").

20. See JERRY W. MARKHAM, *THE HISTORY OF COMMODITY FUTURES TRADING AND ITS REGULATION* 3 (1987) (discussing historical origins of futures market). In 2000 B.C., merchants in Bahrain engaged in futures transactions for goods bound for barter in India. *Id.* In the 17th century, feudal landowners traded rice futures known as "tickets" on their production. *Id.* at 3-4. In the 18th century, merchants bought and sold "to arrive" contracts obligating purchase of goods that were in transit. *Id.* In the 19th century, "to arrive" contracts were an important method for locking in the future price of grain in the United States, and were widely traded for both speculation and the actual purchase and sale of grain. *Id.* at 3.

can be traced to "fundamental types of building blocks"²¹ known as forwards and options.²² An "option" is a contract that creates the *right*, but not the obligation to buy or sell a security at a set price for a limited period of time.²³ A "forward" is a contract that *commits* a party to purchase or sell a given asset at a pre-set time for a specified amount.²⁴ By innovatively manipulating these building blocks, tailor-made exposure to a broad spectrum of risk can be created. Thus, while Wall Street "quants"²⁵ appear to be creating in the stratosphere, they are using earth-bound tools.

A. Plain Vanilla Swap

The paradigm of an OTC derivative transaction is the "plain vanilla"²⁶ interest rate swap.²⁷ In a plain vanilla swap, a debtor with

21. See Clifford W. Smith, Jr. & Charles W. Smithson, *Financial Engineering: An Overview*, in THE HANDBOOK OF FINANCIAL ENGINEERING: NEW FINANCIAL PRODUCT INNOVATIONS, APPLICATIONS, AND ANALYSES 4-9 (1990) (describing forwards as "price fixing building blocks" and options as "price insurance building blocks").

22. See RICHARD M. BOOKSTABER, *OPTION PRICING AND INVESTMENT STRATEGIES* viii (3d ed. 1991) (stating that "[o]ptions can be created, and once created, they can be combined to give a limitless variety of financial payoffs"); GROUP OF THIRTY REPORT, *supra* note 4, at 29 (explaining that abstract derivative transactions rest on relatively simple economic theories of forwards and options). Contracts rooted in forwards include forwards and swap contracts, in addition to exchange-traded futures. *Id.* at 29. Contracts rooted in options include both exchange-traded options on futures and private, over-the-counter transactions between counterparties such as caps, floors, collars, and options on forward and swap contracts. *Id.* at 30.

23. LAWRENCE G. MCMILLAN, *OPTIONS AS A STRATEGIC INVESTMENT: A COMPREHENSIVE ANALYSIS OF LISTED OPTIONS STRATEGIES* 4 (2d ed. 1986).

24. Section 101 of the Bankruptcy Code defines "forward contract," in pertinent part, as: [A] contract . . . for the purchase, sale, or transfer of a commodity . . . or any similar good, article, service, right, or interest which is presently or in the future becomes the subject of dealing in the forward contract trade, or product or byproduct thereof, with a maturity date more than two days after the date the contract is entered into, including, but not limited to, a repurchase transaction, reverse repurchase transaction, consignment lease, swap, hedge transaction, deposit, loan, option, allocated transaction, unallocated transaction, or any combination thereof or option thereon. 11 U.S.C. § 101(25) (1988 & Supp. IV 1992); see also Steven Lipin, *Banks Try to Avoid Rules on Derivatives*, WALL ST. J., July 22, 1993, at C1 (giving simple definition of "forward").

25. See Henry T.C. Hu, *Swaps, the Modern Process of Financial Innovation and the Vulnerability of a Regulatory Paradigm*, 138 U. PA. L. REV. 333, 338 (1989) [hereinafter Hu, *Swaps*] (noting that financial institutions are increasingly becoming domain of quantitative theorists and calling Ph.D.'s with quantitative backgrounds who are creative force behind financial innovation "quants," "lightbulb heads," "rocket scientists," and "rocketo kagakushas").

26. See *id.* at 347 & n.40 (analogizing plain vanilla interest rate swap to "bet" and noting that "plain vanilla" refers to any simple or common swap).

27. See *G30-Managing Risk Management*, IFR SWAPS, July 21, 1993, at 2, 2 (stating that financial engineering is generally agreed to have commenced with swaps); Glasgow & Javetski, *supra* note 3, at 103 (calling plain vanilla interest rate swap longstanding "backbone" of OTC derivatives industry). Swaps themselves are based on the fundamental building block of forwards. See Granito & Torres, *supra* note 7, at A6 (characterizing swap as "forward-type contract"). While swaps may be the "backbone" of the OTC derivatives market, simple futures and options are much more ancient. See MARKHAM, *supra* note 20, at 3 (dating earliest use of

fixed-rate liabilities agrees to "swap" interest payments with a debtor who has floating-rate liabilities.²⁸ To illustrate, assume a small corporation has fixed-rate assets²⁹ and a low interest, floating-rate loan. A large corporation, with far greater resources, has a fixed-rate loan at a higher rate of interest and floating-rate assets.³⁰ If interest rates were to rise to a rate significantly higher than the small corporation's fixed-rate assets, the small corporation could be financially compromised, or worse, driven into bankruptcy. Thus, the small corporation seeks the security from market fluctuation afforded by a fixed-rate loan, despite its higher interest rate. The large corporation can easily absorb the market risk of a sudden rise in interest rates and wants to take advantage of the positive spread between the low floating rates and its fixed-rate assets. Because each corporation's desire complements the other's need, the large and small corporations are said to "swap" interest payments.³¹

B. Hedging

As the aforementioned example illustrates, OTC derivatives are primarily used as vehicles for hedging³² against unfavorable move-

futures to 2000 B.C.); J. Carter Beese, Jr., OTC Derivatives: Encouraging Innovation and Managing Risk, Remarks at the Federal Reserve Bank of Atlanta Conference on Financial Markets 1 (Mar. 4, 1993) [hereinafter Beese, OTC Derivatives] (on file with *The American University Law Review*) (describing Dutch author's account of futures and options trading on Amsterdam Stock Exchange as early as 1688).

28. See Richard J. Rendleman, Jr., *How Risks Are Shared in Interest Rate Swaps*, J. FIN. SERVICES RES. 6, 6-7 (1992) (explaining mechanics of plain vanilla swap).

29. See Scot Tucker, Comment, *Interest Rate Swaps and the 1990 Amendments to the United States Bankruptcy Code: A Measure of Certainty Within Swap Market Contracts*, 1991 UTAH L. REV. 581, 586 (suggesting long-term mortgages secured by fixed-rate notes as example of fixed-rate assets). Alternatively, fixed-rate assets can be described as investments that return a known, fixed-rate of return. *Id.* For example, a bank that loans money at a fixed-rate of 6% has a fixed-rate asset of 6% of whatever amount it lends. If the bank itself borrows that same money prior to lending at a floating-rate of 4%, the bank incurs a floating-rate liability to offset its fixed-rate asset.

30. See Tucker, *supra* note 29, at 586 (offering commercial loan as example of floating-rate asset).

31. See Michael P. Jamroz, *The Net Capital Rule*, 47 BUS. LAW. 863, 900 (1992) (explaining that interest rate swaps are tailored to meet specific client needs). Although the lenders are still obligated under their original lending arrangements to repay principal, the interest rate swap obligates the counterparties to make interest payments based on their counterparties' interest arrangements. *Id.* at 900-01.

32. See FDIC JOINT STUDY, *supra* note 8, at 3 (describing "hedging" as acquiring position in instrument that moves opposite direction in value from existing or anticipated position with "goal of protecting that existing or anticipated position against loss due to fluctuations in prices, interest rates or exchange rates"); GASTINEAU, *supra* note 7, at 123 (defining "hedge" as action that reduces risk, often at expense of opportunity for profit); J. Carter Beese, Jr., *The CEO's Guide to Derivatives*, CHIEF EXECUTIVE, Mar. 1994, at 32 (stating that derivatives are primarily used as hedging instruments). An example of a hedge is the purchase of a derivative that increases in value when a stock goes down, known as a "short." See GASTINEAU, *supra* note 7, at 210 (defining "short" as "investment position which will benefit from a decline in price"). This "short" can be purchased to offset the downside risk of a position that increases in value as the stock price

ments in the capital markets. The customized nature³³ of derivatives allows end-users to hedge risk in a manner more closely resembling the actual risk that they are assuming than was ever possible with ordinary securities.³⁴ A derivative instrument that rises in value when cattle prices go up can protect McDonald's³⁵ hamburger profits, just as one that rises in value when cattle prices go down affords protection to a cattle rancher.

The derivatives markets provide participants with an opportunity to "disaggregate risk, bear those risks they can manage, and transfer those they are unwilling to bear."³⁶ This risk-shifting function affords protection to multinational corporations from "interest rate, raw material and currency fluctuations."³⁷ Thus, end-users of derivatives are free to focus on the pursuit of their business goals, having successfully hedged risks that are peripheral to their primary business.³⁸

C. Size

Fueled by the need to hedge risks, the rapid pace of derivative innovation and explosion in market size has been stunning.³⁹ Indeed, the quick growth in this field has been referred to as "one of

increases, known as a "long" position. *See id.* at 142 (defining "long" as investment position which benefits from market rises). If the stock goes down, the investor makes money on the short position, but loses an equivalent sum on the long position. If it goes up, the reverse occurs. Using offsetting transactions, the investor can eliminate or diminish one or more types of risk. *See id.* at 123 (providing example of basic hedging technique).

33. *See Derivatives Q. and A.: Gary Gray & J. Nicholas Rozsman*, BOND BUYER, Oct. 6, 1993, at 7, 7 (discussing movement toward still greater degree of tailor-made products designed to meet specific hedging needs of investors).

34. *See* J. Carter Beese, Jr., Derivatives: Fundamentally Changing Corporate Finance, Asset Management . . . and the Retail Industry?, Remarks at 1993 Annual Meeting/Southern District Securities Industry Association 1 (May 8, 1993) [hereinafter Beese, Derivatives] (on file with *The American University Law Review*) (stating that derivatives allow participants to "modify their risks and potential returns in nearly any way that suits them").

35. Indeed, McDonald's Corporation is a significant user of derivatives. *See* Barry B. Burr, *Mark Derivatives to Market Daily, Study Says*, PENSIONS & INVESTMENTS, Aug. 9, 1993, at 3, 3 (discussing McDonald's embrace of derivatives). As of June 30, 1993, McDonald's had in place "45 interest rate swaps in 8 currencies and 51 currency swaps in 12 currencies," in addition to substantial use of a variety of other OTC derivatives. *Id.*

36. J. Carter Beese, Jr., Risk Management in an International Context: Lessons from the Past, Remarks at SOFEX—Five Years in the Financial Arena 3 (June 4, 1993) [hereinafter Beese, Risk Management] (on file with *The American University Law Review*).

37. Beese, Risk Management, *supra* note 36, at 3.

38. Beese, Risk Management, *supra* note 36, at 3.

39. *See* Wendy L. Gramm, *In Defense of Derivatives*, WALL ST. J., Sept. 8, 1993, at A12 (asserting that rapidity of derivatives' growth and acceptance provides evidence of global utility); Robert Lenzner & William Heuslein, *The Age of Digital Capitalism*, FORBES, Mar. 29, 1993, at 62, 63 (noting that until quite recently derivatives were "obscure backwater of the securities business").

the most dramatic success stories in modern economic history."⁴⁰ At the end of 1991, the "notional outstanding amount"⁴¹ of all global derivatives, on both organized exchanges⁴² and OTC markets, was measured at \$10 trillion.⁴³ At that time, OTC derivatives alone accounted for \$6 trillion in notional principal.⁴⁴ With \$3.8 trillion of this figure in swaps,⁴⁵ the notional value of the swaps market has surpassed the aggregate value of all stocks traded on the New York and Tokyo stock exchanges combined.⁴⁶ Totalling only \$3 billion in notional principal in 1982,⁴⁷ the market for swaps, the most common

40. David W. Mullins, Jr., *Remarks on the Global Derivatives Study Sponsored by the Group of Thirty*, ISDA SUMMER CONFERENCE 1 (1993) (on file with *The American University Law Review*) (noting that in mere span of 25 years derivatives have gone from genesis to permeation of entire global financial system); see also Barnaby J. Feder, *Chicago's Exchanges Look Toward an Electronic Salvation*, N.Y. TIMES, Nov. 29, 1992, at F5 (calling derivatives "a basic cog in the global economy and one of the most incredible growth industries ever").

41. See GASTINEAU, *supra* note 7, at 159 (defining "notional principal amount" as nominal face value of transaction that is not itself amount of one party's obligation to counterparty).

42. Examples of exchanges that trade derivatives include the American Stock Exchange, the Philadelphia Stock Exchange, the Chicago Mercantile Exchange, the Chicago Board Options Exchange, the Chicago Board of Trade, the London International Financial Futures Exchange, and the Tokyo Financial Futures Exchange. FDIC JOINT STUDY, *supra* note 8, at 4 n.1.

43. See Remolona, *supra* note 11, at 28-29 (using Bank for International Settlements (BIS), International Swaps & Derivatives Association, Inc. (ISDA), and Federal Reserve Bank of New York staff estimates as sources). The extraordinary growth of both OTC and exchange-traded derivatives has been greatest in contracts based on interest rates. See *id.* at 30.

While the use of derivative products has soared, the value of derivatives transactions handled on the OTC market has clearly outgrown the value of derivatives transactions occurring on the exchange markets. In 1986, the OTC and exchange-traded markets enjoyed similar notional size: \$583 billion for exchange-traded instruments and \$500 billion for OTC products. Peter Lee, *American Exchanges Plan to Fight Back*, EUROMONEY, Jan. 1993, at 46, 46. Today, the OTC markets control three-fifths of the notional value of derivatives. Remolona, *supra* note 11, at 29. Quite recently, exchanges have sought to wrest business from the OTC markets through the creation of innovative, customized products. In February 1993, the Chicago Board Options Exchange (CBOE) began offering Flexible Exchange Options (Flex options). See Hal Lux, *Exchanges Use Flex to Muscle in on OTC*, INVESTMENT DEALERS' DIG., Aug. 9, 1993, at 16, 16-17 (describing competitive steps exchanges have taken to vie for OTC-dominated customized business). In less than six months, Flex options traded over \$6 billion in notional principle. *Id.*

The success of CBOE's Flex options did not go unnoticed by their archrivals at the American Stock Exchange (Amex), which launched Flex options on four stock indices, including the first international Flex product on the Japanese index. *Id.* The Philadelphia Stock Exchange is also developing currency options with Flex features. *Id.*

44. Remolona, *supra* note 11, at 28-29.

45. See Barry, *supra* note 5, at 49 (citing recently released ISDA study describing total size of swaps market in 1992 as \$3.8 trillion). The data from ISDA showed a 25% increase in the size of the swaps market from 1991 to 1992. *Id.*

46. See Glasgall & Javetski, *supra* note 3, at 102 (contrasting \$5 trillion notional size of swaps market to underlying markets); cf. GROUP OF THIRTY REPORT, *supra* note 4, at 58 (quoting size of swaps market at \$4.5 trillion for same period); Hu, *Misunderstood Derivatives*, *supra* note 2, at 1459 (stating that notional size of swaps market for same period was \$4 trillion).

47. William P. Rogers, Jr., *Interest Rate and Currency Swaps and Related Transactions*, in THE SWAP MARKET IN 1990 7, 13 (PLI Corp. L. & Prac. Course Handbook Series No. 689, 1990).

form of derivative, has risen over 1200-fold in ten years.⁴⁸ One recent estimate for the total notional size of all derivatives markets is \$16 trillion, with \$10 trillion in OTC derivatives alone.⁴⁹

1. *Notional principal*

While anecdotally interesting, notional principal affords little utility in determining the true size of the market.⁵⁰ In the majority of derivatives transactions, notional principal is nothing more than the benchmark against which accrual of interest payments is measured.⁵¹ Because the notional principal amount rarely changes hands, notional principal does not accurately indicate the amount of money at risk.⁵² David W. Mullins, formerly both a Harvard University professor⁵³ and Vice Chairman of the Board of Governors of the Federal Reserve System, has stated: “[W]hile the notional value of swaps hovers around \$7 trillion, only a fraction - \$170 billion - is actually at risk.”⁵⁴

48. See Tucker, *supra* note 29, at 586 (describing tremendous growth of interest rate swaps market between 1982 and 1988). The growth multiple has been updated here using the more recent notional principal figure of \$3.8 trillion. See *supra* note 45 and accompanying text (pegging notional size of 1992 swaps market at \$3.8 trillion).

49. See Carol J. Loomis, *The Risk That Won't Go Away*, FORTUNE, Mar. 7, 1994, at 43 (“So notional values go into the adding machine and out comes trillions.”).

50. See COMMODITY FUTURES TRADING COMMISSION, OTC DERIVATIVE MARKETS AND THEIR REGULATION 2 (1993) [hereinafter CFTC REPORT] (debunking notion that notional principal accurately reflects market size because it does not reflect amount at risk). Because the notional principal rarely changes hands, criticism has arisen over its utility as an indicator of amount at risk, leading to overblown fears of systemic risk. See GROUP OF THIRTY REPORT, *supra* note 4, at 58 (noting that measuring market by notional principal amount greatly exaggerates actual risk); Floyd Norris, *Swapping Woes: A Fed Official Sees Problems*, N.Y. TIMES, Feb. 9, 1992, at A1 (finding that while notional figures are enormous, they “grossly overstate the size and risk of the market”); Richard C. Breeden, Remarks at the International Swap Dealers Association Annual Meeting 10 (Mar. 11, 1992) (on file with *The American University Law Review*) (“[T]he astronomical estimates of notional principal amount can be used as red herrings. . . . [C]redit risk as measured by replacement cost value is acknowledged to constitute a small fraction of notional value.”). Despite these criticisms, notional outstanding amounts are the primary figures used to measure the size of derivatives markets. See Hu, *Swaps*, *supra* note 25, at 391 (explaining notional amount’s widespread use as more result of easy availability than usefulness in determining accurate market values).

51. See *Interest Swap: Hearings on S. 396 Before the Subcomm. on Courts and Administrative Practice of the Senate Comm. on the Judiciary*, 101st Cong., 1st Sess. 19 (1989) [hereinafter *Senate Interest Swap Hearings*] (statement of Mark C. Brickell, Chairman, ISDA) (noting that principal amount of contract is generally not transferred).

52. See DEUTSCHE BUNDESBANK, OFF-BALANCE-SHEET ACTIVITIES OF GERMAN BANKS 58 (Oct. 1993) (describing criticism of notional principal by “market players” because it does not reflect amount being risked).

53. See Saul Hansell and Kevin Muehring, *Why Derivatives Rattle the Regulators*, INSTITUTIONAL INVESTOR, Sept. 1992, at 49, 53 (describing studies Mullins conducted while teaching at Harvard University).

54. See Claudia Cummins, *Regulators Seen Pulling Together*, AM. BANKER, Apr. 5, 1993, at 2 (quoting David W. Mullins). SEC Commissioner Beese places the amount more conservatively between two and five percent. See Beese, *Derivatives*, *supra* note 34, at 32 (discussing credit risk as percentage of notional amount); see also Marc Levinson, *Sorry, No Crisis Here*, NEWSWEEK, Apr. 25 1994, at 40, 42 (“Merrill Lynch held derivatives with a face value of \$891 billion at the end

Further, notional amounts reflect double counting of derivatives transactions.⁵⁵ For example, if J.P. Morgan and Chase Manhattan Bank engage in a swap with \$5 billion in notional amount, this will be counted as a \$5 billion transaction for *each* firm. Thus, this \$5 billion transaction will anecdotally be listed as \$10 billion in notional principle. Careless use of such elephantine figures⁵⁶ may lead to overblown fears of the systemic risks⁵⁷ presented by derivatives.⁵⁸

2. Volatility

The volatile economic climate of the last thirty years has added to the strong appetite for derivatives' hedging properties. The European currency crisis of September 1992⁵⁹ exemplifies the extreme volatility of currencies in an increasingly global marketplace. Similarly, the wild interest rate swings of the 1970s and 1980s indicate greater levels of volatility than that which occurred immediately prior to the market disruption of 1929.⁶⁰ Commodity price volatility in the past twenty years has far surpassed that of the preceding twenty-year period.⁶¹ The stock market disruptions of 1987 and 1989 have focused institutional attention on the need to effectively hedge equity portfolios against extreme volatility and liquidity crises.⁶² Together, these factors have created great anxiety among participants in the capital markets, setting the stage for the derivatives revolution.

of 1993, but it would have lost less than \$7 billion had every one of its trading partners gone out of business.").

55. See Beese, Derivatives, *supra* note 34, at 32.

56. See Loomis, *supra* note 49, at 43 (noting that notional sizes dwarf United States' \$6.4 trillion gross domestic product).

57. See *infra* notes 212-14 and accompanying text (describing systemic risk).

58. See *supra* note 41 and accompanying text (discussing vast size of notional outstanding amount).

59. See H. Onno Ruding, *After the Currency Crisis, Can Europe Revive a Monetary Policy?*, INT'L HERALD TRIB., Sept. 3, 1993, at C1 (discussing extreme volatility in currencies that accompanied European currency crisis).

60. See Sean Beckett & Gordon H. Sellon, Jr., *Has Financial Market Volatility Increased?*, in RESEARCH DIVISION, FEDERAL RESERVE BANK OF KANSAS CITY, FINANCIAL MARKET VOLATILITY AND THE ECONOMY 9 (1990) (comparing current interest rate volatility with volatility immediately prior to 1929).

61. Robert J. Shiller, *Causes of Changing Financial Market Volatility*, in FINANCIAL MARKET VOLATILITY, *supra* note 57, at 3-4 (1988) (noting that growth of commodity-market volatility in 1970s and 1980s was far beyond that of 1950s and 1960s).

62. See Ford S. Worthy, *What We Learned from the '87 Crash*, FORTUNE, Oct. 5, 1992, at 98, 98 (describing institutional investors' desire to hedge equity risks with derivatives in aftermath of stock market crash).

D. OTC Derivatives End-Users

Today's players in the OTC derivatives market consist primarily of corporations, governmental entities, financial institutions, and institutional investors.⁶³ Although it is rare, extremely wealthy individuals occasionally are directly involved as counterparties to these privately negotiated contracts.⁶⁴ Because the average amount of notional principal involved in a single swap transaction totals \$24 million, however, the vast majority of derivatives participants are institutional entities.⁶⁵

Because of the growing involvement of mutual funds, insurance companies, pension funds, and governmental entities in derivatives, the investment mainstream has become, indirectly, a collective end-user.⁶⁶ For example, the state of Texas recently became an OTC derivatives player when it hedged against a possible loss in tax revenue caused by a drop in oil prices.⁶⁷ There is a growing movement by other states to enter the derivatives market to hedge against losses by industries integral to their respective local economies.⁶⁸

63. See GROUP OF THIRTY REPORT, *supra* note 4, at 34 (noting that one of two main groups participating in derivatives market are institutional investors); Joanne T. Medero, *The Challenges of Change*, Remarks at the IBC Financial Focus OTC Derivatives Conference 1-2 (Apr. 20, 1993) (on file with *The American University Law Review*) (noting institutional nature of derivatives end-users).

64. See, e.g., *Salomon Forex Inc. v. Tauber*, 795 F. Supp. 768, 769 (E.D. Va. 1992) (noting wealthy individual with net worth in excess of \$500 million was counterparty in OTC currency options transaction), *aff'd*, 8 F.3d 966 (4th Cir. 1993).

65. See *Senate Interest Swap Hearings*, *supra* note 51, at 22 (statement of Mark C. Brickell, Chairman, ISDA). A separate barrier to entry is the need for sophisticated risk management systems, which most retail investors cannot afford. See Ann Monroe & Susan Arterian, *Balanced on the Edge*, PLAN SPONSOR, Feb. 1994, at 30, 35-36 (quoting Kenneth Weiss, derivatives risk manager: "It's absolutely unquestionable that you can't manage derivatives, you can't own derivatives - you shouldn't own derivatives - if you can't analyze them."). One sophisticated risk management software package leases for roughly \$2,500 a month. *Id.* at 33.

66. See *Granito & Torres*, *supra* note 7, at A1 (noting that many Americans are indirectly involved in derivatives). Even the 12 million investors in fixed-income mutual funds, generally thought to be an extremely conservative investment, are heavily enmeshed, indirectly, in the OTC derivatives world. *Id.* An "end user" is a party that utilizes a derivative product. GROUP OF THIRTY REPORT, *supra* note 4, at 34. The use of derivatives to enhance returns by county treasurers has become a political issue. See Earl C. Gottschalk, Jr., *Derivatives Foil California Political Race*, WALL ST. J., Apr. 15, 1994, at C1 (reporting that Orange County, California treasurer had to give brokers additional \$140 million of collateral after interest rate movements caused paper losses in county's portfolio, prompting treasurer's opponent in upcoming election to say that "leveraging public money makes me nervous").

67. See Anita Raghavan, *States Hitting Options Pits to Hedge Risk*, WALL ST. J., Sept. 8, 1992, at C1 (describing Texas' foray into commodity options to hedge oil price volatility).

68. See *id.* (noting that Delaware, Massachusetts, and New York have also used derivatives to offset the risks of energy price fluctuations).

Municipalities as far flung as Salt River, Arizona⁶⁹ and school districts as small as Osseo, Minnesota have issued bonds with derivatives attached.⁷⁰ But do the treasurers of these small towns and school districts have the financial acumen to match wits with the panoply of risks derivatives present?⁷¹ Because of the general public's indirect exposure to derivatives through municipal bond offerings, SEC Chairman Arthur Levitt has recently questioned the suitability of derivatives for "individual investors, state and local governments, and pension funds."⁷²

Currently, there is no requirement that an OTC derivative instrument be "suitable" for the needs of a particular end-user. In contrast, dealers of exchange-traded products are proscribed from recommending options transactions unless they have a reasonable basis for believing the customer has the knowledge and sophistication to evaluate and financially bear the transaction in question.⁷³

Regulatory movement in the direction of a "suitability" standard for OTC derivatives has commenced.⁷⁴ Advocacy of an "appropriateness" standard for selling an OTC derivative to a particular customer,

69. See Jill Andresky Fraser, *Why Derivatives Aren't Just for City Slickers*, INSTITUTIONAL INVESTOR, Feb. 1994, at 95, 95 (listing diverse group of municipalities that have added derivatives to bond offerings).

70. See *id.* at 95 (describing how small school district used inverse floaters in \$47 million bond offering).

71. See *infra* Section III. (describing wide variety of risks present in use of derivatives). Indeed, larger and more sophisticated trading and corporate operations have already been burned by derivatives. See *supra* notes 108-33 and accompanying text (listing losses at large institutions); Steven Lipin et al., *Just What Firms Do with 'Derivatives' is Suddenly a Hot Issue*, WALL ST. J., Apr. 14, 1994, at A1, A7 (detailing how corporate treasurer at Proctor & Gamble did not understand derivatives risks).

72. Chairman Levitt remarked:

At the SEC, we are particularly concerned about derivatives and their suitability for individual investors, state and local governments, and pension funds. We take this issue very seriously. And we will do our best to make sure brokers take it seriously, too.

We are currently considering sending a strong signal to this end.

Arthur Levitt, Remarks at the Public Securities Association Annual Meeting 5 (Mar. 4, 1994) [hereinafter Levitt, PSA Speech] (on file with *The American University Law Review*); see *SEC To Push for More Municipal Security Disclosure*, Reuters, Mar. 4, 1994, available in LEXIS, Nexis Library, Wires File (noting Chairman Levitt's call for better disclosure to market); *SEC Member Issues Warning About Sales of Some Derivatives*, WALL ST. J., Jan. 28, 1994, at B5 (articulating SEC Commissioner Richard Roberts' view that suitability rule for municipal derivatives is possible). In the meantime, Commissioner Roberts cautioned securities firms that sell municipal derivatives to "take all reasonable steps necessary to ensure suitability." *Id.*

73. See Brandon Becker & Jeffrey P. Burns, *Regulating the Options Market*, INSTITUTIONAL INVESTOR, Nov. 1991, at 29, 29-30 (describing the "suitability" requirements for exchange traded options developed by the Securities and Exchange Commission and the self-regulatory organizations (SRO's)). SRO's are composed of the exchanges and the National Association of Securities Dealers, Inc. *Id.* at 29. Factors considered for such suitability include information regarding a customer's net worth, annual income, and investment sophistication. *Id.*

74. See *supra* note 72 and accompanying text (describing Chairman Levitt's and Commissioner Roberts' urging of voluntary suitability standards).

a standard significantly easier to meet than "suitability,"⁷⁵ has been presented both by Iowa Congressman James Leach⁷⁶ and by the Office of the Comptroller of the Currency (OCC).⁷⁷ In Recommendation 22, Congressman Leach suggests that "bank dealer[s] should be required to evaluate whether a particular transaction is appropriate for a particular customer."⁷⁸ This view echoes that of the OCC, which states that national banks should "understand the applicability of financial derivatives instruments to the risks that [their] bank customer is attempting to hedge."⁷⁹ While the OCC rules are binding on national banks,⁸⁰ and Congressman Leach's proposal is a mere recommendation, the Congressman has persuasively urged compliance by suggesting that regulators should also consider enacting more stringent "suitability" rules.⁸¹

E. OTC Derivatives Dealers

Intermediaries, referred to as "dealers," satisfy end-user needs by developing and "making a market"⁸² in OTC derivatives.⁸³ In the process, these dealers expect to derive financial gain from transaction fees, bid-offer spreads,⁸⁴ and profits from proprietary trading.

75. See *Derivatives Q. and A.: Douglas E. Harris*, BOND BUYER, Nov. 24, 1993, at 7 (explaining that examination of whether transaction is "appropriate" for particular customer "certainly doesn't go as far as being a suitability rule").

76. See *Recommendations of Rep. Jim Leach Released Nov. 22 on Oversight of Derivatives Markets*, 61 BANKING REP. (BNA) 865 (1993) [hereinafter *Leach Recommendations*] (discussing "suitability" and "appropriateness" of derivatives for certain end-users in Recommendation 22). Congressman Leach is the senior Republican on the House Committee on Banking, Finance and Urban Affairs.

77. See Banking Circular 277, Office of the Comptroller of the Currency 12 (1993) [hereinafter OCC Banking Circular 277] (advocating that banks understand "applicability" of derivative instruments to risk bank is attempting to manage).

78. See *Leach Recommendations*, *supra* note 76, at 865 ("Proper due diligence in evaluating the appropriateness of a derivative product for a prospective customer is the best safe-guard for both the dealer and the end-user.").

79. OCC Banking Circular 277, *supra* note 77, at 12.

80. See OCC Banking Circular 277, *supra* note 77, at 1 (articulating that national banks are "expected to follow" the guidelines laid down by the OCC).

81. See *Leach Recommendations*, *supra* note 76, at 865 ("The regulators should also consider whether industry-wide suitability rules should be enacted and cross-industry guidelines enacted.").

82. See GASTINEAU, *supra* note 7, at 148 (defining "market maker" as dealer who regularly quotes both bids and offers and is ready to provide two-sided market).

83. FDIC JOINT STUDY, *supra* note 8, at 6 (describing dealers' role as market makers to satisfy certain clients).

84. A "bid-offer spread" is the difference between the bid and the offer price of a financial instrument. GASTINEAU, *supra* note 7, at 37. This spread is widely used as a measure of market liquidity. *Id.* When the spread is large, there is room for the dealer to profit by pricing the instrument less favorably to one of the end-users. The transaction is simply arranged so that the seller receives an amount slightly less than the amount paid by the buyer. For example, if the buyer pays 10% in a swap transaction, and the seller receives 9.95%, the bid-offer spread on the deal amounts to 0.05%. The 0.05% spread between the bid and the offer thus becomes the

Several large financial institutions, particularly banks, are both dealers of OTC derivatives and end-users.⁸⁵ As end-users, these banks have reaped record profits from proprietary trading. In the second quarter of 1993, for example, the top seven banks in the United States reported \$2.25 billion dollars in trading profits,⁸⁶ which was largely the result of profitable trading in the OTC derivatives markets.⁸⁷

Interestingly, stock prices for many of these banks actually declined after record earnings were announced.⁸⁸ One explanation for this phenomenon is the "off-balance sheet"⁸⁹ nature of derivative transactions.⁹⁰ Because these transactions need not be explicitly disclosed by banks, many investors and industry experts fear banks may be using derivatives as a less capital-intensive means of generating revenue, despite the potential for unprecedented losses.⁹¹ A collateral fear of overreliance on trading profits, which are considered a more volatile source of income than traditional banking activities, explains the investing public's apparent disdain for record earnings.⁹²

dealer's profit on the transaction. FDIC JOINT STUDY, *supra* note 8, at 6-7.

85. See Lenzner & Heuslein, *supra* note 39, at 71 (referring to dealer that also end-uses as "bank [that] eats its own cooking").

86. Steven Lipin, *Banks Rely More on Trading, but Say Little About It*, WALL ST. J., July 30, 1993, at B3.

87. See Donald H. Layton, Senior Management Principles: The Derivatives Dealer Bank, Presentation at the International Swaps & Derivatives Association Review of the Group of Thirty Global Derivatives Study (July 28, 1993) (on file with *The American University Law Review*) (noting that over \$5 billion of trading revenue was concentrated among merely six banks in 1992).

88. See G. Bruce Knecht, *J.P. Morgan 4th-Period Net Surged; Four Other Banks Also Report Gains*, WALL ST. J., Jan. 14, 1994, at A2 (announcing record trading revenue at J.P. Morgan & Co.). While J.P. Morgan's trading revenue rose to \$606 million from the previous year's figure of \$200 million, the stock wallowed. *Id.*

89. See GASTINEAU, *supra* note 7, at 160 (defining off-balance sheet instrument as contract that changes entity's risk structure without appearing as asset or liability on traditional balance sheet). Off balance sheet instruments are merely summarized as footnotes to the financial statement. *Id.* See also *infra* notes 436-38 and accompanying text (describing Financial Accounting Standards Board's minimal requirements for disclosure of off-balance sheet items).

90. See Lipin, *supra* note 86, at B3 (quoting Merrill Lynch banking analyst as stating: "[T]he disclosure factor is a major handicap for why banks don't get credit [in their stock price for record trading revenues]").

91. See Lipin, *supra* note 86, at B3 (explaining lack of disclosure as one of reasons banks' trading revenues are not adequately reflected in stock price). The stock market is particularly sensitive to rumors of derivatives trading losses. See Gordon Matthews, *Stocks: Bankers Trust Plunges From 52-Week High on Talk of Trading Woes*, AM. BANKER, Mar. 14, 1994, at 24, 24 (reporting that Bankers Trust stock declined 12% on rumors of trading losses). Lack of trading information disclosure was cited for exacerbating the stock's decline. See *id.* (quoting Paine Webber analyst Lawrence W. Cohn).

92. See G. Bruce Knecht, *Bankers Trust's 4th-Period Net Doubled; Bank of Boston Up 29%, Key Corp. 14%*, WALL ST. J., Jan. 21, 1994, at A4 ("[T]he stock market fears that the bank is overreliant on trading activities, which are generally viewed as a volatile source of earnings"); Gabriella Stern and Susan Pulliam, *Banc One's Slide Ends Acquisition Spree, Producing Fitters Among Some Investors*, WALL ST. J., Feb. 17, 1994, at C1, C1-2 (describing Banc One's stock price at two-year low despite \$1.14 billion in net profit); Gabriella Stern, *Banc One's Sliding Stock Price Scuttles*

In the first quarter of 1994, many of these fears proved prophetic.⁹³ In an environment of rising interest rates, the U.S. financial markets dropped sharply.⁹⁴ Investors who owned derivatives that increased in value when interest rates dropped,⁹⁵ or when the stock and bond markets rose, incurred large losses.⁹⁶ Subsequent to reporting anemic trading revenue for the quarter, however, stock prices of three of the biggest users of derivatives did not change significantly.⁹⁷

II. RISK

Derivatives improve economic efficiency by breaking apart risk⁹⁸ and parceling it out to the parties who are the cheapest and most willing risk-bearers.⁹⁹ Although derivatives efficiently transfer risk, they do not eliminate it.¹⁰⁰ Derivative end-users and dealers are

Accord to Acquire Nebraska's First Tier, WALL ST. J., Feb. 15, 1994, at A5 (quoting bank analyst stating "Banc One's stock has been hurt . . . due to a belief that its use of derivatives is excessive.").

93. See, e.g., Steven Lipin & Gabriella Stern, *Bankers Trust Gets Big Boost From Sale of Derivatives; Another Client Has Loss*, WALL ST. J., Apr. 21, 1994, at A3 (noting disclosure by Bankers Trust that it incurred losses in first quarter of 1993 of \$49 million trading bond and currency derivatives for its own account). Roughly 75% of Bankers Trust's net profit in the first quarter of 1994 came from derivatives sales, lending credence to fears of overreliance on a volatile profit source. *Id.*; see also *Morgan Net Tumbles, Others Post Slight Gains*, INVESTOR'S BUS. DAILY, Apr. 15, 1994, at A5 (reporting that J.P. Morgan's profits declined 20% in first quarter of 1994 because of losses in proprietary derivatives trading).

94. See Jay Mathews, *Financial Markets Take Another Dip*, WASH. POST, Apr. 5, 1994, at A1 (reporting sharp declines in stock and bond markets).

95. See Laura Jereski, *Mortgage Derivatives Claim Victims Big and Small*, WALL ST. J., Apr. 20, 1994, at C1 (describing "bloodbath in mortgage derivatives" afflicting Kidder Peabody & Co.). Dell Computer Corporation incurred a paper loss of between \$5 million and \$15 million. See Kyle Pope, *Dell Computer Sees Derivatives Losses; Stock Drops 12%*, WALL ST. J., Apr. 22, 1994, at B10 (stating that Dell stock dropped 12% on news of derivatives loss).

96. See Brett D. Fromson, *Derivatives Losses Cut J.P. Morgan's Profits*, WASH. POST, Apr. 15, 1994, at B1 (noting that J.P. Morgan lost roughly \$100 million from trading during market downturn).

97. Chemical Bank stock declined 1.3%, Bankers Trust rose 0.7%, and Citicorp declined 0.6%. See Brett D. Fromson, *Trading Losses Take 3 Big Banks' Profits Below Expectations*, WASH. POST, Apr. 20, 1994, at C1, C4 (reporting slight investor reaction to announcement of losses).

98. See *A Comedy of Errors*, ECONOMIST, Apr. 10, 1993, at 4, 4 (defining risk as "the volatility of potential outcomes").

99. See Mullins, *supra* note 40, at 3 (suggesting that derivatives reduce cost of risk-bearing and therefore improve economic efficiency).

100. See Beese, *Risk Management*, *supra* note 36, at 3 (emphasizing that OTC derivatives allow investors to "disaggregate risk, bear those risks they can manage, and transfer those they are unwilling to bear"). The argument can be made, however, that aggregate risk in the system is somewhat reduced by risk that is offset naturally between two parties. For example, assume that party A has an unhedged short position in Japanese yen in anticipation of a decline in the yen's value. Party B is holding an unhedged long position in yen in anticipation of an increase in the yen's value. If A and B are paired off as counterparties to reduce their respective exposures to unfavorable market movements, risk is reduced from the system through the natural offset of the parties' positions. Thus, A and B each experience an equal reduction of risk without passing new risk to any third party. This derivative transaction illustrates that not all derivatives transactions are zero sum games. Both parties A and B can be viewed as

exposed, in varying degrees, to market risk¹⁰¹ and credit risk,¹⁰² as well as operational,¹⁰³ liquidity,¹⁰⁴ and legal risk.¹⁰⁵ Regulators of the financial markets¹⁰⁶ have expressed fears that the derivatives market, and perhaps the entire global financial system, may be exposed to the systemic risk¹⁰⁷ of cascading counterparty default.

A. Market Risk

Exposure to market risks in OTC derivatives trading can be substantial.¹⁰⁸ Some financial market regulators have expressed fears that institutional managers do not understand the exposure that accompanies their derivatives positions.¹⁰⁹ Indeed, the sizes of the

“winning,” regardless of market movement, because both have offset risk in the manner they desire.

101. See GASTINEAU, *supra* note 7, at 148 (defining “market risk” as “exposure to (adverse) price change”); Hu, *Misunderstood Derivatives*, *supra* note 2, at 1468 (defining market risk as “risk that interest rates or other market factors will move adversely”). Derivatives’ market risk resembles that of the underlying cash instrument. *R is for Risk*, *ECONOMIST*, Apr. 10, 1993, at 33, 33. Derivatives contracts are primarily designed to hedge the market risks of the underlying cash instrument in order to “buy the share, sell the future.” *Id.*

102. See GASTINEAU, *supra* note 7, at 77 (defining “credit risk” as exposure to loss due to default on derivative instrument); Hu, *Misunderstood Derivatives*, *supra* note 2, at 1457 (finding credit risk and market risk to be most important risks associated with OTC derivatives).

103. See Mullins, *supra* note 40, at 4 (finding operational risk of derivatives no greater than risks associated with traditional financial instruments).

104. See GASTINEAU, *supra* note 7, at 6 (explaining that although phenomenon of securitization has improved illiquidity in financial markets, “not all packages of risks and rewards are freely or actively traded”). For an example of how illiquid market conditions impair the ability to engage in derivatives transactions, see *infra* notes 154-56 and accompanying text (explaining potential impossibility of implementing derivatives hedges during illiquid market disruptions).

105. See GROUP OF THIRTY REPORT, *supra* note 4, at 51 (characterizing “legal risk” as risk of loss due to unenforceable contract).

106. See Peter Lee, *How to Exorcise Your Derivative Demons*, *EUROMONEY*, Sept. 1992, at 36, 46 (listing regulatory agencies currently studying systemic risks posed by OTC derivatives); E. Gerald Corrigan, Remarks at the 64th Annual Mid-Winter Meeting of the New York State Bankers Association 12-14 (Jan. 30, 1992) (on file with *The American University Law Review*) (giving dire warnings about potential systemic implications should OTC derivatives market experience widespread default).

107. Systemic risk is the possibility that many major financial institutions will collapse because of the inability of one bank to fulfill its contractual obligations. See *infra* notes 212-23 and accompanying text (discussing fears of financial collapse and increasing regulatory concern about systemic risk).

108. See Hu, *Misunderstood Derivatives*, *supra* note 2, at 1469 (warning that losses from options trading may be “potentially unlimited”).

109. See Saul Hansell, *The Risk Collectors*, *INSTITUTIONAL INVESTOR*, Sept. 1991, at 57, 58 (claiming that some firms “don’t even know how much they have at risk”); Breedon, *supra* note 50, at 6 (expressing concern that smaller end-users are not sophisticated enough to comprehend market risk or proper hedging techniques); Nancy Newcomb, Remarks at ISDA’s Review of the Group of Thirty’s Derivatives Study, Operational and Control Issues 12 (July 28, 1993) (on file with *The American University Law Review*) (blaming \$377 million loss in unhedged mortgage backed securities trade on failure to understand or independently evaluate market risks). *But see* Gramm, *supra* note 39, at A12 (rebutting “supposed inability of senior managers to establish adequate internal controls”). Ms. Gramm, former Chairperson of the Commodity Futures

most notorious losses in this market have been remarkable.

Merrill Lynch lost \$377 million on one unhedged position in mortgage-backed securities in 1987.¹¹⁰ Salomon Brothers lost \$250 million betting on the yield curve¹¹¹ over a two-month period in 1992.¹¹² Bankers Trust created \$39 million in non-performing assets in a single interest rate swap,¹¹³ and reportedly lost an additional \$300 million following a 1994 rise in interest rates.¹¹⁴ Analysts have pegged J.P. Morgan's losses during the same period at \$100 million.¹¹⁵ Proctor & Gamble Co. and Gibson Greeting Inc. lost \$157 million and \$16.7 million respectively on interest rate swaps.¹¹⁶ George Soros lost \$600 million of his \$10 billion quantum hedge fund on European bond and currency options.¹¹⁷ Money manager David Askin lost virtually all of the \$600 million he was attempting to manage using mortgage-backed derivatives,¹¹⁸ and Kidder Peabody lost the \$25.5 million that it lent Askin so he could leverage those investments.¹¹⁹ The same week, Kidder Peabody announced a \$350 million earnings loss because their former head government bond trader entered fictitious trades into the computer to create the illusion of huge profits.¹²⁰

Trading Commission, asserts that price modeling, assessment of credit risk, and internal management controls have developed concurrently with the sophistication of these products and that greater market regulation is not needed. *Id.* at A12.

110. See Newcomb, *supra* note 109, at 12 (attributing magnitude of loss to fact that investment bank did not completely understand market risks); see also MICHAEL LEWIS, LIAR'S POKER 144-47 (1989) (relating Merrill Lynch executive's explanation of large loss by stating that mortgage trader Howard A. Rubin "just put [the bonds] in his drawer" without Merrill Lynch's knowledge); *Merrill Lynch Reports Loss, Dismissal*, N.Y. TIMES, May 2, 1987, § 1, at 38 (reporting that Howard Rubin was dismissed for unauthorized trading).

111. See GASTINEAU, *supra* note 7, at 249 (defining "yield curve" as bond graph that compares interest rate yields to value of bond at maturity).

112. See Granito & Torres, *supra* note 7, at A6 (attributing \$250 million Salomon Brothers, Inc. trading loss to mortgage derivatives).

113. Miriam Bensman, *Too Damn Smart . . .*, GLOBAL CUSTODIAN, Sept. 1992, at 132, 135.

114. Lipin et al., *supra* note 71, at A7.

115. Fromson, *supra* note 96, at B1.

116. Both companies have taken the unprecedented step of threatening legal action against their OTC derivatives dealer, Bankers Trust. See Steven Lipin et al., *Bankers Trust Thrives Pitching Derivatives, But Climate Is Shifting*, WALL ST. J., Apr. 22, 1994, at A1, A5 ("It is clear that [Gibson Greetings] should never have been put in a position like this, as we relied on Bankers Trust to advise us on these transactions.") Proctor & Gamble has vowed not to use risky derivatives again. See *id.* (quoting Proctor & Gamble's chairman: "Derivatives like these are dangerous, and we were badly burned. . . . We won't let this happen again.")

117. Brett D. Fromson, *Speculator Sees Possible Danger in Derivatives*, WASH. POST, Apr. 14, 1994, at D11, D14.

118. See Brett D. Fromson, *The \$10 Trillion Toss*, WASH. POST, Apr. 24, 1994, at H1, H4 (describing Askin's loss using obscure, illiquid derivative known as "toxic waste").

119. *Id.* at H14 (reporting Kidder Peabody's loan loss).

120. See *id.* (noting larcenous trader was paid a trading-based bonus of \$9 million in 1993 for his phantom "profits"). The trader, Joseph Jett, accomplished his fraud using government bond "strips." *Id.* Strips are created by splitting the interest and principal portion of a

Losses of this magnitude cannot simply be attributed to a speculative American approach to proprietary trading. In 1993, Showa Shell Sekiyu K.K., a Japanese oil company, lost \$1.59 billion trading currency derivatives.¹²¹ Kashima Oil, a Japanese oil refiner, has unrealized losses equivalent to almost \$1.5 billion in forward foreign exchange contracts.¹²² Toyota, Japan's largest car manufacturer, incurred losses of \$935 million in six months while attempting to hedge its foreign exchange risk.¹²³ British multinational Allied-Lyons encountered a £147 million loss betting against the dollar in 1991.¹²⁴ Klockner & Company KGaA, a German trading company, lost \$380 million on crude oil forward contracts, destroying over fifty percent of its capital.¹²⁵

Perhaps the most notorious loss in this market is that of Metallgesellschaft AG, the German engineering and metals conglomerate.¹²⁶ This allegedly "sophisticated trading outfit"¹²⁷ lost nearly \$1.4 billion attempting to hedge with oil futures.¹²⁸ As the result of

government bond into two discrete components. *Id.* Jett pretended to engage in derivatives contracts where he rejoined these strips and manipulated Kidder Peabody's computer system to continue to elude detection. *Id.*

121. See Granito & Torres, *supra* note 7, at A6 (describing unprecedented loss of currency by Japanese oil company Showa Shell Sekiyu K.K. in trading currency derivatives as example of how sophisticated market player can be "trapped" by derivatives).

122. See *Determined Loser*, *ECONOMIST*, Apr. 16, 1994, at 82, 82 (noting Kashima was reticent about oil losses despite questioning by Japan's oil regulator about currency dealings).

123. See *Yen Blocked*, *ECONOMIST*, Mar. 26, 1994, at 96, 96 (blaming Toyota's loss of \$935 million on inexperienced hedging).

124. See Simon Brady, *Allied-Lyons' Deadly Game*, *EUROMONEY*, Apr. 1991, at 22, 26-27 (describing how misjudgment of dollar's strength caused tremendous losses in one month).

125. See *Klockner To Compensate Certificate Holders*, *FIN. TIMES*, July 8, 1989, at 10 (describing oil futures losses of 700 million deutsche marks); *Why Brent Needs Oiling*, *ECONOMIST*, Mar. 4, 1989, at 73, 73 (pegging Klockner's losses at \$300 million).

126. See Audrey Choi, *Metallgesellschaft Reports Progress On Oil Positions*, *WALL ST. J.*, Jan. 28, 1994, at A4 (stating that Metallgesellschaft's losses on oil derivatives contracts should not exceed \$859.8 million); Jack Egan, *Worry Over Weird Investments*, *U.S. NEWS & WORLD REPORT*, Jan. 31, 1994, at 66 (placing Metallgesellschaft's losses around \$1 billion); Terence Roth, *German Firm's Bailout Package Gets Approval*, *WALL ST. J.*, Jan. 17, 1994, at A3 (reporting 120 bank creditors' bailout of Metallgesellschaft from impending bankruptcy with \$1.9 billion rescue package); Gail E. Schares, *The Meltdown at Metallgesellschaft . . .*, *BUS. WK.*, Jan. 24, 1994, at 48-49 (describing "house of cards" at Metallgesellschaft); Leah Nathans Spiro, . . . *And the Flames Singe Castile*, *BUS. WK.*, Jan. 24, 1994, at 49, 52 (reporting on implications of German firm's risky hedging to American subsidiary); Jeffrey Taylor and Allanna Sullivan, *German Firm Finds Hedges Can Be Thorny*, *WALL ST. J.*, Jan. 10, 1994, at C1, C14 (describing ill-fated attempt to hedge using energy derivatives); Steve Zwick and David Nusbaum, *Trading Debauchery Raises Questions*, *FUTURES*, Feb. 1994, at 14, 14-15 (asserting Metallgesellschaft's attempts to liquidate position resulted in driving down price of crude oil).

127. Taylor and Sullivan, *supra* note 126, at C14.

128. Taylor and Sullivan, *supra* note 126, at C14. Metallgesellschaft's mistake was hedging long-term commitments with short term contracts that constantly had to be "rolled over," that is, renewed every month at expiration. *Id.* Because historical price relationships showed that the prices of these contracts generally went up as they aged, Metallgesellschaft anticipated making a small profit with every rollover. *Id.* The first problem was that when exchange traders learned of Metallgesellschaft's massive rollovers every month, they began to bet against the

a flawed hedging strategy,¹²⁹ the 14th largest industrial group in Germany required an \$1.9 billion emergency bailout from 120 creditors to avert bankruptcy proceedings.¹³⁰ As many as 9000 workers are likely to lose their jobs.¹³¹ Oil prices, already low, were further depressed as the company attempted to liquidate its futures positions.¹³² As a collateral result of depressed oil prices, U.S. oil refiners have foregone several hundred million dollars in revenue that they would have received had Metallgesellschaft stayed out of the "hedging" business.¹³³ Derivatives losses do not occur in a vacuum.

To date, such monumental losses have been more than offset by record trading gains from derivatives.¹³⁴ The market exposure revealed by these trades gone awry, however, lends credence to the admonition of a well-known investment banker that derivatives may be "financial hydrogen bombs,"¹³⁵ capable of causing global economic gridlock should a string of large participants simultaneously incur losses greater than their assets.

B. Legal Risk

In 1991, the British House of Lords ruled that swaps transactions

company, gaining around \$30 million a month at the company's expense. *Id.* Second, Metallgesellschaft was purchasing as many as 120 times the number of futures contracts it needed to offset its oil delivery exposure. See Spiro, *supra* note 126, at 52 ("When prices fell, [Metallgesellschaft] gained only a fraction of what it lost in the futures market.").

129. See Schares, *supra* note 126, at 49 (describing Metallgesellschaft's ultimately unsuccessful speculative attempts at hedging).

130. See Roth, *supra* note 126, at A3 (describing bailout that involved selling off some subsidiaries of 58,000 employee Metallgesellschaft).

131. See Schares, *supra* note 126, at 49 (suggesting number of employees that are likely to lose their jobs as the company sells non-core businesses).

132. See Taylor and Sullivan, *supra* note 126, at C14 (attributing decline in U.S. gasoline prices by as much as five cents to Metallgesellschaft's attempted liquidation because gasoline prices are linked to futures prices); Zwick and Nusbaum, *supra* note 126, at 15 (blaming attempted liquidation of Metallgesellschaft's position for decline of crude oil prices).

133. See Taylor and Sullivan, *supra* note 126, at C14 ("U.S. refiners may have seen their profits reduced by as much as \$200 million").

134. See *supra* notes 86-87 and accompanying text (describing huge profits from derivatives trading).

135. See Heidi Fiske, *Where Do We Go from Here?*, INSTITUTIONAL INVESTOR, July 1992, at 209, 213 (quoting Felix Rohaytn, senior partner, Lazard Frères & Co., as making dire assertion that derivatives "have created unknown risks. Few understand these multiparty, multicountry derivatives, and fewer still have thought through their implications."). Rohaytn warns that derivatives are financial "hydrogen bombs" that must be defused before any major destruction takes place. *Id.* Because trading in derivatives depends so heavily on computer models, and no perfect computer model for derivatives has ever been created, the greatest risk of all may be a flawed computer model. See Hansell, *supra* note 109, at 60 (discussing \$33 million loss incurred by Chemical Bank because its computer failed to account for difference between commercial paper and Eurodollar volatility).

entered into by local authorities were "ultra vires,"¹³⁶ and therefore legally unenforceable contracts. This ruling, known as the *Hammersmith and Fulham* decision,¹³⁷ has cost eighty banks approximately \$1 billion in defaulted swaps payments.¹³⁸ The continued assurances from legal counsel that the swaps contracts at issue were enforceable¹³⁹ underscores the price of misjudgment and the urgent need for legal clarity in the OTC derivatives arena.

C. Liquidity Risk

Liquidity is commonly defined as the ease with which an asset can be bought or sold for money.¹⁴⁰ The two criteria for determining liquidity are whether the asset can be traded: (1) quickly; and, (2) at a reasonable price.¹⁴¹ Money, in the form of cash or demand deposits, is the paradigm of perfect liquidity.¹⁴²

136. See *Hazell v. Hammersmith & Fulham L.B.C.*, 2 W.L.R. 372 (1991) (holding entrance into swaps contract as beyond scope of local authority's power and therefore legally unenforceable); see also GASTINEAU, *supra* note 7, at 240 (defining "ultra vires act" as any act performed without legal authority because such act is "beyond scope of powers of corporation, state, province, or municipality").

137. See GASTINEAU, *supra* note 7, at 123 (stating that volume of Hammersmith & Fulham's swaps activity was so large compared to its debt that speculation was obvious aim, and implying that speculative nature of transactions may have influenced ruling of ultra vires).

138. See *British Local Authority Swaps; We're a Special Case, Old Chap*, ECONOMIST, May 11, 1991, at 74, 74 (pegging losses to 80 banks at £550 million); *London's Legal Liabilities*, ECONOMIST, Feb. 22, 1992, at 77, 77 (placing bank losses at over £500 million).

139. See Philip Moore, *Cleaning Up the Town Hall Mess*, EUROMONEY, Apr. 1991, at 31, 31 (noting that counterparties to Hammersmith & Fulham's swaps agreements had "engaged in comprehensive cross-checks with lawyers and other responsible authorities to confirm that the swap dealings were lawful"). The legal risk of contractual unenforceability may not be limited to speculative English boroughs. See Gary Evans, *Lawyers Warn on Void Swap Deals*, EUROMONEY, Apr. 1992, at 14, 14 (articulating legal opinion that other institutions, such as insurance companies or building societies, may present ultra vires risk).

140. See ROBERT A. SCHWARTZ, EQUITY MARKETS: STRUCTURE, TRADING, AND PERFORMANCE 523 (1988) (giving general meaning of liquidity). In contrast to this facile definition, Professor Schwartz has identified several uncertainties regarding liquidity, including its definition and a method to measure it empirically. *Id.* The definition is uncertain because of the subjective nature of a "reasonable price." *Id.* at 524. A reasonable price to one buyer, indicating liquidity, may be unreasonable to another. *Id.* Liquidity is difficult to measure empirically because the OTC derivatives markets have not been tested in a crisis situation. See KEVIN WINCH & MARK JICKLING, CONGRESSIONAL RESEARCH SERV., DERIVATIVE FINANCIAL MARKETS 34-35 (1993) [hereinafter WINCH, CRS REPORT] (noting that despite lack of crisis testing growth of derivatives products have been fostered by perception of liquidity in markets). *But cf.* Robert McGough, *Managers Begin to Avoid Municipal Derivatives, Fearing Lack of Liquidity During A Bear Market*, WALL ST. J., Sept. 13, 1993, at C13 (describing investor disapproval of some complex derivatives because of perception of illiquidity). Less market liquidity for a certain product means the owner will have to discount the product more in order to sell it. *Id.*

141. SCHWARTZ, *supra* note 140, at 523.

142. SCHWARTZ, *supra* note 140, at 523.

A liquid market has depth,¹⁴³ breadth,¹⁴⁴ and resiliency.¹⁴⁵ Liquidity in the OTC derivatives markets is maintained by dealers, who are prepared to create and sell the products in addition to holding unmatched derivatives positions in their inventory.¹⁴⁶ If market participants perceive that another participant is itself illiquid,¹⁴⁷ it is unlikely that they would be willing to transact derivatives contracts with that participant on mutually favorable terms for fear of the counterparty risk presented.¹⁴⁸ Thus, while the liquidity of a particular derivative instrument is required for large transactions to be absorbed by the market without significant price swings, the liquidity of an individual entity must be presumed for that entity to have access to the OTC derivatives markets.

1. *Delta hedging*

Because hedging a risk by taking the exact opposite side of a position—such as buying an option to sell that perfectly mirrors an option to buy—would be safe yet unprofitable, many dealers and end-users use an arguably risky technique known as “delta hedging.”¹⁴⁹ In a liquid market, this technique provides a manageable exposure to risk, allowing for profits despite the existence of the hedge.¹⁵⁰ Delta hedging requires constant realignment of the balance between the position and its hedge.¹⁵¹ When the market moves up or down, the hedge must be readjusted in a manner that allows an optimally desired exposure to risk.¹⁵² Two problems emerge from this tech-

143. See SCHWARTZ, *supra* note 140, at 36 (describing depth of market as multiple orders to purchase at both above and below current trading value of asset in question).

144. See SCHWARTZ, *supra* note 140, at 36 (defining breadth of market as one in which orders are sufficiently large).

145. See SCHWARTZ, *supra* note 140, at 36 (explaining resiliency of market as one in which temporary price changes caused by order imbalances quickly lure buyers into market because of attractive price).

146. See WINCH, CRS REPORT, *supra* note 140, at 34 (“[T]he liquidity of derivative contracts is provided by the firms which make markets.”). The unmatched contracts held in inventory leave the dealer open to the market risk that their side of the contracts will decline in value. See *supra* notes 108-35 and accompanying text (discussing potential pitfalls of market risk).

147. See WINCH, CRS REPORT, *supra* note 140, at 34 (defining corporation’s illiquidity as lack of enough money on hand to meet financial obligations).

148. See WINCH, CRS REPORT, *supra* note 140, at 34-35 (noting that fears of counterparty bankruptcy renders illiquid firms unable to transact derivatives contracts).

149. See GASTINEAU, *supra* note 7, at 86 (explaining that “delta hedge” matches market response of underlying position over narrow range of price variations).

150. See Hu, *Misunderstood Derivatives*, *supra* note 2, at 1479 (identifying delta hedging as means to hedge risk while allowing for profit).

151. See Hu, *Misunderstood Derivatives*, *supra* note 2, at 1479 (describing “repeated readjustments” essential to delta hedging).

152. See Hu, *Misunderstood Derivatives*, *supra* note 2, at 1479 (explaining necessity of repeated readjustments in delta hedging in order to obtain “right balance of exposure between the underlying and the option”).

nique. First, there are high transaction costs associated with the daily readjustment of position.¹⁵³ Second, and more important, the theory of delta hedging presupposes a liquid market in which to transact readjustments.¹⁵⁴ Market disruptions like those that occurred in 1987 and 1989 in the equities market, and the currency crisis of September 1992, illustrate the illiquid conditions that can make delta hedging readjustments an impossibility.¹⁵⁵ Thus, the haven from market exposure supposedly afforded by hedging with derivatives may prove useless in periods of high volatility. Unfortunately, this is precisely when protection from market exposure is most needed.¹⁵⁶

2. *The lessons of portfolio insurance*

The misguided use of “portfolio insurance”¹⁵⁷ in the October 1987 stock market crash¹⁵⁸ highlights one pitfall of hedging that can

153. See Hansell, *supra* note 109, at 60 (explaining how, as market moves, buyers are forced to constantly buy high and sell low, losing money on every transaction). If a party to a derivatives transaction loses money because of buying high and selling low, that party also incurs transaction costs such as the commission paid to the intermediary who books the transaction. The intermediary locates the counterparty, or in the absence of a counterparty, acts itself as a counterparty to the transaction. This activity is done for a fee, and this fee is part of the high transaction cost associated with delta hedging. See Hu, *Misunderstood Derivatives*, *supra* note 2, at 1479 (discussing transaction costs in delta hedging of currency transactions).

154. See Hu, *Misunderstood Derivatives*, *supra* note 2, at 1479 (asserting that illiquid markets make hedging impossible).

155. See Hu, *Misunderstood Derivatives*, *supra* note 2, at 1479 (giving lucid overview of transaction costs and liquidity risks accompanying delta hedging); Richard Cookson & Lillian Chew, *Things Fall Apart*, *RISK*, Oct. 1992, at 44, 44 (citing inability to effectuate delta hedging in disrupted market scenario because of lack of liquidity); Fromson, *supra* note 117, at D14 (quoting George Soros: “If there is an overwhelming amount of dynamic hedging to be done in the same direction, price movements may become discontinuous.”). Mr. Soros, a well-known hedge fund manager, lost \$600 million trading bond and currency derivatives in 1993. *Id.*

156. See Hu, *Misunderstood Derivatives*, *supra* note 2, at 1479 (analogizing inability to effectuate delta hedging during market disruptions to ineffective protection afforded by portfolio insurance during 1987 stock market crash); see also Hayne Leland, *Portfolio Insurance: The Lessons of History*, *RISK*, Dec. 1992, at 15, 16 (describing paradoxical increase in market volatility caused by portfolio insurance during market disruption); Mary L. Schapiro, *The Growth of the Synthetic Derivative Market: Risks and Benefits*, Address at the National Option & Futures Society 13 (Nov. 13, 1991) (on file with *The American University Law Review*) (discussing how portfolio insurance, with programmed sell orders, greatly increased selling pressure during market break in 1987). SEC Commissioner Schapiro questions whether hedging strategies currently being employed bear any resemblance to the portfolio strategies that exacerbated the market crash in 1987. Schapiro, *supra*, at 13-14.

157. See GASTINEAU, *supra* note 7, at 175 (defining portfolio insurance technique as attempt to change market exposure through futures and cash markets); Peter Fortune, *Stock Market Crashes: What Have We Learned From October 1987?*, *NEW ENG. ECON. REV.*, Mar./Apr. 1993, at 10, 11 (describing portfolio insurance as “set of strategies” designed to prevent value of portfolio from falling below prespecified floor).

158. See WINCH, CRS REPORT, *supra* note 140, at 36 (describing 37% drop in value of Dow Jones Industrial Average over period of less than two months precipitated by crash on October

occur to unwary investors in a liquidity crisis.¹⁵⁹ An example of a "portfolio insurance" strategy is attempting to hedge equity exposure by purchasing derivatives that increase in value as the underlying equity prices devalue.¹⁶⁰ As prices decline, the strategy calls for selling equity shares and buying puts¹⁶¹ on futures.

The striking resemblance between this technique and delta hedging is not coincidental. Portfolio insurance is, in fact, a form of delta hedging.¹⁶² In ordinary market conditions prior to the crash, portfolio insurance strategies effectively hedged equity portfolios against small fluctuations in prices. When the market declined sharply on October 19, however, the crush of portfolio insurance hedgers rushing to sell equities and buy puts encountered illiquid conditions.¹⁶³ That is, there were no buyers for the equities and no sellers of the derivatives at a reasonable price. Thus, because of the fallacious assumption of liquidity, portfolio insurance users were unable to avoid substantial losses through the use of dynamic hedging.¹⁶⁴

The shortcomings of portfolio insurance strategy are well documented. Yet in apparent disregard of the precedent liquidity crisis, one manager of investment programs recently stated he was "fully

19, 1987).

159. See *Emerging Market Options; More a Shrub Than a Hedge*, ECONOMIST, Mar. 12, 1994, at 91 (describing the inability to effectuate delta hedging during market disruptions); Leland, *supra* note 156, at 16; Schapiro, *supra* note 156, at 13. In its 1991 study on the OTC derivatives market, the Chicago Board Options Exchange (CBOE) cited increased volume in S&P 500 contracts since 1987 as proof that end-users are increasingly choosing options over portfolio insurance as hedging vehicles. CHICAGO BOARD OPTIONS EXCHANGE, OTC DERIVATIVE MARKET STUDY 9 (1991). Hedging may also be transformed into catastrophic speculation by a variety of human errors. See *supra* note 126 and accompanying text (describing failed hedging strategy employed by Metallgesellschaft).

160. See Earl C. Gottschalk, Jr., *Bearish but Nervy? Try These Market Plays*, WALL ST. J., Mar. 18, 1994, at C1 ("Put options gain in price when the underlying stocks or indexes decline.").

161. See *Emerging Market Options; More a Shrub Than a Hedge*, *supra* note 159, at 88 (defining put as right to sell derivative).

162. See Saul Hansell, *Is the World Ready for Synthetic Equity?*, INSTITUTIONAL INVESTOR, Aug. 1990, at 59 (describing portfolio insurance as "type of dynamic hedge in which investor sells futures"); GASTINEAU, *supra* note 7, at 94 (defining dynamic hedging as technique of portfolio insurance).

163. See Joseph Grundfest, *Explaining the Events of October 1987* in AFTER THE CRASH: LINKAGES BETWEEN STOCKS & FUTURES 23, 23-24 (Robert J. Mackay ed., 1988) (suggesting users of portfolio insurance "may not have correctly understood the limits of that trading strategy").

164. See Peter L. Bernstein & Barbara S. Bernstein, *Where the Postcrash Studies Went Wrong*, INSTITUTIONAL INVESTOR, Apr. 1988, at 173 (describing "illusion of an almost unlimited liquidity"). As a corollary risk, there is a belief that the widespread use of dynamic hedging strategies during market disruptions exacerbates market declines. See Anita Raghavan, *Bearish Bets Turn Some into Bulls*, WALL ST. J., Feb. 17, 1994, at C1, C17 (stating that when speculators are flocking to purchase puts they are "indirectly adding to the selling pressure in the stock market"). The discussion of derivatives' impact on the underlying cash markets, while fertile ground for scholarly discourse, is outside the scope of this Comment.

ready to delta hedge our position with futures if [the market] started turning against us."¹⁶⁵ But would the market for these hedges be liquid if a significant number of investors attempted to transact them at the same time?¹⁶⁶ During a market crash, the widespread, erroneous belief of liquidity could cause a stampede to sell or buy. Ironically, the perception of liquidity would partially cause the ensuing illiquidity.¹⁶⁷

D. Credit Risk

The "credit risk" in an OTC derivative transaction is the risk that a participant will default on contractual obligations to a counterparty, resulting in loss.¹⁶⁸ For exchange-traded products, there is a central clearinghouse¹⁶⁹ that stands as a guarantee to all buyers and sellers that their trades will be consummated, regardless of counterparty default.¹⁷⁰ Because OTC derivatives participants deal directly with

165. Monroe & Arterian, *supra* note 65, at 39.

166. See Barbara D. Granito, *Delta-Hedging: The New Name in Portfolio Insurance*, WALL ST. J., Mar. 17, 1994, at C1, C13 (stating that puts are in demand in declining markets because they allow "buyers to stop their losses at a preset floor"). In addition to the stock market crash, investors seeking to use this stop-loss strategy have also been taught "painful lessons" in the recent European bond market crash. *Id.* at C13; see also *Emerging Market Options; More a Shrub Than a Hedge*, *supra* note 159, at 91 ("If bond prices fall too quickly . . . those who have sold put options cannot re-balance fast enough."). The same hedging conundrum presented itself in the European currency crisis of September 1992. See *Emerging Market Options; More a Shrub Than a Hedge*, *supra* note 159, at 91 (noting that currency options dealers lost vast sums because of inability to effectuate dynamic hedging readjustments).

167. Nobel Laureate Merton H. Miller has termed this phenomenon "the paradox of liquidity." See MERTON H. MILLER, FINANCIAL INNOVATIONS AND MARKET VOLATILITY 46 (1991) [hereinafter MILLER, FINANCIAL INNOVATIONS] (comparing liquidity of capital markets to liquidity of depository institutions which can have illiquid runs made on deposits because of perception of liquidity); JOHN M. KEYNES, THE GENERAL THEORY OF EMPLOYMENT, INTEREST AND MONEY 160-61 (1935) (asserting that although investor "flatters himself that his investment is liquid . . . this cannot be true for all investors collectively").

168. Credit risk has a market component as well. Interview with Tanya S. Beder, Managing Director of Capital Market Advisors, in Washington, D.C. (July 24, 1993) [hereinafter Beder Interview] (noting that change in market value of derivative creates corresponding change of credit exposure to transactional counterparty).

169. See SINGAPORE INT'L MONETARY EXCHANGE LTD., SIMEX FINANCIAL SAFEGUARD SYSTEM 3 (Dec. 1992) ("Clearing simply means that all the buy and sell transactions are matched to ensure that every single transaction is accounted for and that the trade details are correctly recorded. The clearing house . . . substitutes itself [for market participants] . . . in every cleared trade and assumes the opposite side of all positions.") Clearinghouses thus obviate the need to rely on the credit quality of one's de facto counterparty.

170. See John Davidson, *Prospects for a Swaps Clearing House*, FUTURES & OPTIONS PLUS, Sept. 6, 1993, at 9, 9 (describing "clearinghouse" as organization established by market participants that imposes "discipline on their market" and serves to minimize risk by sharing risks equally should loss occur). Plans to study the creation of a central clearinghouse for the OTC derivatives market are currently under way. Evrard Van Hertsen, *A New Horizon*, CLEARING & SETTLEMENT, July/Aug. 1993, at 21, 22 (describing multilateral clearing schemes being examined as means to more efficiently manage risk). Federal Reserve Governor Susan Phillips has called the evolution of an OTC clearinghouse "the next logical development." *Phillips Urges Adoption of Bilateral Netting Plan to Promote Enforceability*, DAILY REP. FOR EXECUTIVES (BNA), Mar. 14, 1994,

each other without the benefit of an exchange clearinghouse, counterparties must rely on each other's credit for assurance that contractual obligations will be met.¹⁷¹

To assess credit risk at any given time, a participant must determine the cost of replacing the contract should a counterparty default occur. To find the replacement cost of a derivatives contract in default, one must calculate the value of all expected future cash flows that were erased by the default.¹⁷² Because the value of a derivatives contract fluctuates throughout the contract's life, evaluating credit risk requires a determination of both "current" exposure and "potential" exposure.¹⁷³ Current replacement costs for swaps are calculated as the discounted present value of the cash flow a counterparty is expected to receive during the life of the contract.¹⁷⁴ Current value can therefore be calculated precisely.

Future credit exposure, which changes constantly as volatility moves variables involving both the underlying security and the derivative itself, is much more difficult to gauge. For example, options undergo a devaluation of their worth as the period prior to the expiration date diminishes, known as "time decay."¹⁷⁵ This "wasting asset"¹⁷⁶ characteristic of an option, called the "theta,"¹⁷⁷ is a variable that alters the future value of derivatives.

Determining the replacement cost of a derivative contract requires computer modeling of the volatility¹⁷⁸ of both the underlying and associated variables, such as time decay. Unfortunately, this is an imprecise science.¹⁷⁹ According to a prominent economist, measur-

at A48.

171. See Beese, Risk Management, *supra* note 36, at 6 (identifying credit risk as "the biggest issue . . . participants in this market assume").

172. GROUP OF THIRTY REPORT, *supra* note 4, at 47.

173. See GROUP OF THIRTY REPORT, *supra* note 4, at 47 (explaining that credit risk of derivatives contract fluctuates because underlying variables fluctuate).

174. See Jamroz, *supra* note 31, at 901 (explaining how to determine current replacement cost for swap in event of default).

175. See GASTINEAU, *supra* note 7, at 235 (defining "time decay" as "loss in value of an option or an instrument with an embedded option as the expiration date approaches").

176. See GASTINEAU, *supra* note 7, at 234 (defining "wasting asset" as rate of time decay in option).

177. See GASTINEAU, *supra* note 7, at 234 (defining "theta" of option as "sensitivity of option's value to the passage of time with price of the underlying and implied volatility unchanged").

178. See Hu, *Misunderstood Derivatives*, *supra* note 2, at 1477-80 (discussing empirical uncertainty in estimating volatility because theoretical models are often based on unrealistic assumptions).

179. See GASTINEAU, *supra* note 7, at 8 (stating that while evaluation of credit exposure is imprecise science, corrections in price or rate discounts and suitable premiums can "adjust for reasonable differences in credit exposure"). Gastineau, director of customer risk management for Swiss Bank Corporation, asserts that "[f]inancial intermediaries closely scrutinize the credit risk element . . . because most intermediaries have experienced sizable credit losses in recent years." *Id.*

ing volatility "depends on judgment and personal opinion about what the future will look like."¹⁸⁰ Seemingly minute alterations in assumptions about variable factors can cause gargantuan swings in the replacement value of a derivative contract, as well as in the attendant potential credit exposure.¹⁸¹

Counterparty credit risk is a primary concern to derivatives end-users.¹⁸² Although counterparty credit has always been important to banks in standard underwriting, the longer duration of OTC derivatives transactions increases the risk that a counterparty will default.¹⁸³ Participants in the OTC derivatives markets may need to rely on each other's financial viability for decades, rather than the few months required to create and market a bond issue.¹⁸⁴ Wall Street, with its traditional emphasis on short-term risk,¹⁸⁵ may look for short-term profits attached to unwanted long-term repercussions.¹⁸⁶

180. See Kenneth S. Leong, *Estimates, Guesstimates and Rules of Thumb*, in FROM BLACK-SCHOLES TO BLACK HOLES: NEW FRONTIERS IN OPTIONS 63, 67 (1992) (describing volatility estimation as "weakest link" in options valuation, and noting that "most people seem to pull [volatility estimations] from thin air"); see also Lenzner & Heuslein, *supra* note 39, at 72 (quoting Fischer Black, co-author of BLACK-SCHOLES seminal options volatility model, as stating that "we can't track everything perfectly. It's a never-ending task to identify possible glitches.").

181. Beder Interview, *supra* note 168 (asserting that "no one model is correct," and that \$30 million swing in assumptions on \$3.5 billion trade "has to be called zero"). While some fear that pricing models make improper assumptions about liquidity and market volatility, no better modeling system has been suggested to date. See BANK OF ENGLAND, DERIVATIVES: REPORT OF AN INTERNAL WORKING GROUP ¶ 44 (1993) [hereinafter BANK OF ENGLAND, DERIVATIVES] (noting lack of academic modeling solution to replace current price modeling inadequacy).

182. See Tracy Corrigan, *Salomon Sets Up Triple-A Rated Derivatives Unit*, FIN. TIMES, Feb. 9, 1993, at 19 (noting that declining credit quality of U.S. financial institutions has proven "severe handicap" in derivatives market because "potential clients are unwilling to deal with institutions rated less than double A"); Michael Peltz, *Wall Street's Triple-A for Effort*, INSTITUTIONAL INVESTOR, May 1993, at 89, 89 (explaining how risk-averse clients are requiring AA credit rating or better before they will consider engaging in derivatives transactions); Flavio Bartmann, Special Purpose Derivative Vehicles, Remarks at the IBC Financial Focus Over-the-Counter Derivatives Conference 1 (Apr. 20, 1993) (on file with *The American University Law Review*) (stating that credit concerns over downgrade in U.S. investment banks in early 1990s caused exclusion of several major banks from large segment of swaps market).

183. Steven Dickson, *Swaps Issuers Taking a Close Look at Firms' Credit Quality*, AM. BANKER, Sept. 2, 1992, at 13.

184. *Id.*

185. See Beese, OTC Derivatives, *supra* note 27, at 5 (noting that "credit risk involved in these transactions is the first long-term risk brokerage houses have assumed on a systematic basis"); cf. Newcomb, *supra* note 109, at 14 (finding risks associated with derivatives to be "logical evolution and extension of those basic risk-taking capabilities . . . [that] bankers have always handled, with the same essential components").

186. See Dickson, *supra* note 183, at 13 (discussing fear of "transactions done for short-term results, without regard for potential long-term complications"). SEC Commissioner Beese notes: "[T]his is the first time broker-dealers have been in the business of longer-term credit extension—except, of course, for their short-lived experience with bridge loans. Some of those 90 day loans may still be on the books!" See Beese, OTC Derivatives, *supra* note 27, at 5. Bridge loans are unsecured loans from broker-dealers used to fund a party's takeover of a company. See Christopher Farrell, *Investment Banking Takes a New—and Risky—Turn*, BUS. WK., June 15, 1987, at 92, 92 (defining bridge financing as short-term loan made when both time and money

The credit rating of an OTC derivatives dealer is more closely scrutinized than that of a stocks and bonds trader because the OTC derivatives dealer is an actual party to the contract.¹⁸⁷ Because OTC derivatives contracts are negotiated privately between parties, financial gain is entirely dependent on the continued ability of the counterparty to perform contractual obligations.¹⁸⁸ As a result of contractual performance risks and the relatively long maturity¹⁸⁹ of swaps and related products, central banks have established strict minimum-credit requirements for counterparties with whom they will transact OTC derivatives business.¹⁹⁰ This increased emphasis on counterparty credit quality has occurred simultaneously with a global decrease in the credit quality of banks.¹⁹¹

1. *Derivative product companies*

To avoid losing credit-wary customers, three investment banks have created AAA-rated subsidiary derivatives units.¹⁹² These units,

are of essence). Once the party successfully gains control of its target, it uses proceeds from the company's issuance of debt to repay its bridge loan to the broker dealer. *Id.*

187. See Saul Hansell, *Newly Formed Salomon Unit Receives Top Credit Rating*, N.Y. TIMES, Feb. 9, 1993, at D1, D7 (explaining that derivatives dealer, as counterparty to privately negotiated contract, is highly scrutinized as to whether it will be able to meet contractual obligations for five years or longer).

188. See Lisa M. Raiti, *Credit Sensitivity Spurs Enhanced DPC Growth*, STANDARD & POOR'S CREDITWEEK, May 18, 1992, at 35, 36 (articulating necessity of continued counterparty creditworthiness to allow realization of financial gain in OTC derivative transaction).

189. See Fred R. Bleakley, *Managing Risk: Corporate Treasurers Adopt Hedging Plans, With Some Wariness*, WALL ST. J., Aug. 17, 1993, at A1 (quoting AlliedSignal Corporation corporate treasurer Roger Matthews as complaining that "[s]ome of the . . . [derivatives] with bells and whistles force you to take bets four and five years out"). "Bells and whistles" is a term that ostensibly suggests unusual or custom-made features of a financial instrument, but has become a pejorative term describing features that are added merely to attract attention. GASTINEAU, *supra* note 7, at 36. Some companies are attempting to delay employees' profit-based bonuses so they can monitor the profitability of the long-term positions. See Jill Dutt, *Derivative Trading: High Profit—High Risk*, GAZETTE (MONTREAL), May 12, 1992, at D12 (describing Salomon Brothers pay plan implemented by former interim chairman Warren Buffet that ties compensation for derivatives experts to long-term profitability).

190. See Tim Farrand, *Banks Fight Credit Fears with New Derivative Units*, Reuters, Feb. 12, 1993, available in LEXIS, Nexis Library, Wires File (describing increasingly credit-conscious nature of derivatives clients).

191. See *id.* (noting that Standard and Poor's has only six banks globally with highest credit rating of AAA, whereas five years ago there were 12); Peltz, *supra* note 182, at 89 (explaining that many institutions' credit ratings were downgraded during recession to merely A, causing derivatives end-users to do business with only highest rated banks or to require counterparties to put up collateral for deals to be consummated).

192. See Peltz, *supra* note 182, at 89-90 (describing credit-enhanced derivative product companies (DPCs) formed by Merrill Lynch, Goldman, Sachs & Co., and Salomon Brothers in response to increased credit sensitivity of end-users). The first DPC, Merrill Lynch Derivative Products (MLDP), was capitalized with \$350 million, including \$300 million in common equity from Merrill Lynch and \$50 million from outside investors. See Bartmann, *supra* note 182, at 3 (discussing capitalization necessary for DPC to exceed market's minimum requirement and be taken seriously). It has been noted that a AAA rating at this level of capitalization costs "\$117

known as "enhanced derivative products companies" (DPCs), are formed by financial services firms and are able to attain higher credit ratings than their parent companies.¹⁹³ Higher ratings are possible because the DPCs are separately capitalized,¹⁹⁴ requiring no assistance from the parent companies to perform their contractual obligations.¹⁹⁵ Adequate capitalization alone, however, is insufficient to ensure that a DPC will achieve a higher rating than its parent company. The DPC is not sufficiently independent of the parent to merit a higher rating if, in the event of bankruptcy, a bankruptcy court has valid grounds to consolidate the assets and liabilities of a DPC with that of the parent company.¹⁹⁶

The DPCs focus exclusively on intermediating derivatives transactions and are thus removed from the credit exposure to third-world debt or nonperforming real estate loans that have saddled full-service financial institutions.¹⁹⁷ Risk-averse counterparties, however, are still

million per A." Peltz, *supra* note 182, at 89.

Flavio Bartmann, developer of MLDP, determined the appropriate level of capitalization by analyzing the fundamental elements of a credit rating. See Bartmann, *supra* note 182, at 1 (defining "credit rating" as "simply a measure of the probability over time that the assets of a firm, after defaults, exceed the liabilities"). He concluded that an AAA-rated company could be designed by first "maintain[ing] a small risk to capital ratio through high quality assets and plenty of capital; and second, generat[ing] sufficient income to consistently and comfortably cover expenses." *Id.* at 2.

Goldman, Sachs & Co. capitalized its DPC, called GS Financial Products, with an existing \$350 million portfolio, only \$70 million of which represented Goldman's equity stake. Peltz, *supra* note 182, at 91. Salomon Brothers capitalized "Swapco," its AAA subsidiary with only \$175 million. *Id.* at 90. It should be noted that these AAA subsidiaries have only been created by investment banks.

193. See Raiti, *supra* note 188, at 35 (defining "DPC" as company with AAA credit rating despite lower credit rating of parent company).

194. Capital adequacy for purposes of credit rating is determined by complex probabilistic risk models that examine a full spectrum of potential exposures, including disaster scenarios. Raiti, *supra* note 188, at 38-39 (relating that DPC worthy of AAA rating should have "extremely high probability of meeting its financial obligations as a counterparty").

195. See Raiti, *supra* note 188, at 35 (describing AAA DPC as sum of portfolio, capital, and separateness, thereby indicating ability of DPC to fulfill financial obligations without support of parent company).

196. See Raiti, *supra* note 188, at 38 (describing Standard and Poor's primary concern in parent-subsidiary relationship as "separateness of an enhanced DPC and insulation of capital from a legal, operational, and regulatory standpoint"); Bartmann, *supra* note 182, at 2 (articulating essentiality of "bankruptcy-remote" nature of DPC to achieve AAA credit rating). MLDP received a AAA rating, compared with Merrill Lynch's A1/A+, by showing a consolidation in the event of the parent's bankruptcy to be an impossibility. *Id.* at 2.

197. See *supra* notes 193-96 and accompanying text (stating that DPC is not bound by liabilities of parent company and therefore not involved with loans to lesser developed countries, real estate bubble loans, or highly leveraged transaction loans that may be troubling parent institution); see also John L. Carr, Jr. & John H. More, *Developments in the Regulation of Foreign Bank Operations in the United States*, 1988 U. ILL. L. REV. 225, 273 (noting problems that traditional financial institutions have experienced in real estate and third-world markets).

likely to prefer an official AAA to a credit-enhanced Wall Street subsidiary.¹⁹⁸

2. *Default rate*

The derivatives industry has touted an extremely low default rate of less than one-half of one percent of the money at risk in OTC swaps¹⁹⁹ transactions.²⁰⁰ But with the continued explosion of the market,²⁰¹ and the recent spate of large market losses,²⁰² will the industry be able to maintain this impressive rate of default for all derivatives transactions? Arguably, as the market continues to expand, the credit quality of the participants will decline.²⁰³ In addition, it is possible that previously performing swaps contracts, currently included in the low default rate, may still default at some point in the future. This could occur following billion dollar market losses like those that occurred at Metallgesellschaft, Showa Shell Sekiyu, and Kashima Oil.²⁰⁴ A handful of billion dollar defaults would significantly skew the default rate for derivatives.²⁰⁵

An interesting analogy can be drawn between the rate of default for swaps and the rate of default for junk bonds.²⁰⁶ Reminiscent of the

198. See Peltz, *supra* note 182, at 92 (explaining preference for true AAA bank J.P. Morgan over DPC subsidiaries based on greater capitalization and "blue-chip name"); cf. *Salomon's Swapco is Running on Empty Just as Fannie and Sallie Mae Make Synthetic Triple-A Debuts*, DERIVATIVES WK., Oct. 11, 1993, at 1 (describing recent approval for immediate use of DPCs by Federal National Mortgage Association and Student Loan Marketing Association). These quasi-government agencies needed board approval to transact derivatives business with synthetic DPCs.

199. See *supra* notes 45-48 and accompanying text (describing swaps as most prevalent form of OTC derivative contract).

200. See Claudia Cummins, *Q and A: Swaps Industry is Self-Regulating, Chairman Says*, AM. BANKER, Oct. 28, 1993, at 3, 3 (quoting Joseph P. Bauman, Chairman of ISDA, as saying "[l]ess than one-half of one percent of the market value of all swaps has been lost due to credit defaults"); Floyd Norris, *Swaps Markets: How Much Risk?*, N.Y. TIMES, July 29, 1992, at D8 (stating swaps market losses amount to one-half of one percent of market of \$77.5 billion, which is amount actually at risk).

201. See *supra* note 48 and accompanying text (describing extraordinary growth of derivatives markets).

202. See *supra* notes 110-26 and accompanying text (describing massive derivatives trading losses).

203. See Hansell & Muehring, *supra* note 53, at 53 (articulating this phenomenon as regulatory concern).

204. See *supra* notes 121 and 126 (detailing losses).

205. See Norris, *supra* note 200, at D8 (totalling all derivatives losses at \$353 million).

206. See VICTOR SPERANDEO WITH T. SULLIVAN BROWN, TRADER VIC - METHODS OF A WALL STREET MASTER 276 (1991) (defining junk bonds as general term for bonds issued to finance leveraged buyouts). Sperandeo notes they earned their title "junk" "because so many of the bond issues depreciated dramatically in market value after the issue because the market value of the underlying assets securing them depreciated. There was no other collateral." *Id.* Former Federal Reserve Vice Chairman David Mullins Jr. suggested an analogy between the junk bond default rate and that of derivatives. See Hansell & Muehring, *supra* note 53, at 53 ("For years people convinced themselves that the high-yield market only had a 3 percent default rate. But

low default rate put out by the International Swaps & Derivatives Association, Inc. (ISDA), the junk bond "industry"²⁰⁷ held out studies in the 1980s that showed a two to three percent default rate for their product.²⁰⁸ Yet subsequent studies that viewed junk bonds as they matured found the default rate to be between thirty and fifty percent.²⁰⁹ This is not to suggest that derivatives will have default rates as high as junk bonds, or that the two industries will share the same fate. It merely suggests that, like junk bonds, low default rates for derivatives may not be reliable because defaults are likely to increase as time goes on.²¹⁰ This possibility is heightened by the long durations of many OTC derivatives transactions.²¹¹

E. Systemic Risk

"Systemic risk"²¹² actually refers to two scenarios. In the first, the

those studies were done in an expanding market dominated by recently issued bonds.").

207. See Bensman, *supra* note 113, at 136 (describing Drexel's 50% share of junk market); David Dreman, *Never Give a Junk Holder an Even Break*, FORBES, Apr. 30, 1990, at 446, 446 (stating that in 1980s industry was dominated by Michael Milken and his firm Drexel Burnham Lambert).

208. See James Buchan, *Enigmatic Securities*, FIN. TIMES, June 26, 1989, at 4 (citing study by New York University's Edward Altman in March 1988 that found average rate of junk bond default between 1978 and 1987 to be 1.84%); Dreman, *supra* note 207, at 446 (describing Hickman study of 1940-45 and T.R. Akinson study of 1945-65 showing default rate for junk bonds of merely two percent).

209. See Buchan, *supra* note 208, at 4 (describing study by Harvard business school's Paul Asquith that shows 34% of junk bonds issued in 1979 had defaulted); Dreman, *supra* note 207, at 446 (stating that restructurings of defaults where junk bond holders only get 20-30 cents on dollar bring default rate from late 1970s to mid-1980s "closer to 50%"); Hansell & Muehring, *supra* note 53, at 53 (describing David Mullins Jr.'s most recent study as Harvard professor showing default rate for junk bonds that have been aged 10 years to be 30%).

210. See Buchan, *supra* note 208, at 4 ("Junk bonds, like other debt securities, are more likely to default as time goes on."). By November 1988, Paul Asquith's Harvard study found that 34% of bonds issued in 1977 and 1978 had defaulted, while default rate percentages for bonds issued between 1979 and 1983 were in the low 20s, and the default rate for bonds issued between 1979 and 1983 were under 10%. *Id.* These declining default rate percentages cannot be attributed to the issuance of better quality junk bonds as time went on. To the contrary, the quality of junk bonds issued throughout the 1980s deteriorated markedly. See Dreman, *supra* note 207, at 446 (stating that the "new junk [in the 1980s] was definitely inferior to the old junk").

211. See *supra* notes 183-84 and accompanying text (explaining why longer time frame creates greater credit fears).

212. See BANK FOR INTERNATIONAL SETTLEMENTS, REPORT OF THE COMMITTEE ON INTERBANK NETTING SCHEMES OF THE GROUP OF TEN COUNTRIES 9 (1990) [hereinafter BIS NETTING SCHEMES REPORT] (describing systemic risk as risk that "illiquidity or failure of one institution, and its resulting inability to meet its obligations when due, will lead to the illiquidity or failure of other institutions"); ORGANIZATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, SYSTEMIC RISKS IN SECURITIES MARKETS 14 (1991) [hereinafter OECD REPORT] (quoting Sean O'Connor of Bank of Canada: "systemic risk is the financial risk that arises from institutional and structural arrangements in markets which all participants (in the economy) must bear as a group"); KEVIN F. WINCH & MARK JICKLING, CONGRESSIONAL RESEARCH SERVICE, PROFITS OF BANKS AND SECURITIES FIRMS: LOOKING FOR THE GREENEST GRASS 26 (quoting E. Gerald Corrigan, then-President of Federal Reserve Bank of New York: "[B]y systemic risk I mean the clear and present danger that problems in financial institutions can quickly be transmitted to

inability of one bank to meet its contractual obligations will result in a domino effect, toppling one financial institution after another.²¹³ In the second scenario, the widespread reliance of investors on dynamic hedging strategies during a market disturbance could turn an otherwise containable market downturn into an illiquidity-driven crash.²¹⁴ Widespread fears of the systemic risks posed by OTC derivatives have prompted regulators worldwide to sound warnings and undertake studies of the market.²¹⁵ Regulatory concern about derivatives officially began when former New York Federal Reserve Bank president E. Gerald Corrigan²¹⁶ warned that “[t]he growth and complexity of off-balance sheet activities and the nature of the

other institutions or markets, thereby inflicting damage to those other institutions, their customers and, ultimately, the economy at large.”)

213. See Stephen Lipin & William Power, *Derivatives Draw Warning from Regulators*, WALL ST. J., Mar. 25, 1992, at C1, C9 (raising concern that “domino effect could drag down other institutions with obligations due from the failed one”); Beese, OTC Derivatives, *supra* note 27, at 7 (discussing possibility of one insolvency being transmitted to other firms throughout entire financial system).

214. See *supra* notes 157-64 and accompanying text (describing failure of dynamic hedging “portfolio insurance” during 1987 market crash). Another example of a liquidity crisis causing a major disturbance in the financial markets is that of Penn Central Railroad in 1970. The failure of this major participant in the commercial paper market led to a “crisis of confidence” in that market, causing illiquid conditions in the marketplace. See BANK FOR INTERNATIONAL SETTLEMENTS, RECENT DEVELOPMENTS IN INTERNATIONAL INTERBANK RELATIONS, REPORT PREPARED BY A WORKING GROUP ESTABLISHED BY THE CENTRAL BANKS OF THE GROUP OF TEN COUNTRIES 30 (1992) [hereinafter BIS RECENT DEVELOPMENTS REPORT] (describing illiquidity shocks delivered to commercial paper market by Penn Central Railroad).

215. See Futures Trading Practices Act of 1992, 7 U.S.C. § 16(a)(2)(A) (Supp. IV 1992) (requiring Commodity Futures Trading Commission (CFTC) to conduct study in order to find ways to better protect hedgers and speculators, producers of futures, and public at large); Patrick Harverson, *It's Time to Know What's Going On*, FIN. TIMES, Dec. 8, 1992, § 3, at 2 (referring to Bank of England Study undertaken to determine whether derivatives users fully understand derivatives); Lee, *supra* note 106, at 46 (listing Securities and Exchange Commission (SEC), General Accounting Office (GAO), National Association of Insurance Commissioners (NAIC), Bank for International Settlements (BIS), and International Organization of Securities Commissions (IOSCO) as regulatory agencies and groups that are studying OTC derivatives market); J. Carter Beese, Jr., *The Great Derivatives Debate: Where Do We Go from Here*, Remarks at the Risk Magazine/C•ATS Software Symposium 2 (Dec. 1, 1992) [hereinafter Beese, *Great Derivatives Debate*] (on file with *The American University Law Review*) (noting Japanese Ministry of Finance's ban on derivatives that immediately caused market to move to Singapore, New York, and London). Concern has been voiced over the bandwagon of regulatory respondents to systemic risk. See *Brady Warns of Risks Posed by Swaps Market, Urges One Regulator*, 24 Sec. Reg. & L. Rep. (BNA) No. 50, at 1885, 1888 (Dec. 25, 1992) (noting former Treasury Secretary Nicholas Brady's call for one regulator to examine systemic risks).

216. Mr. Corrigan, having resigned from his position as President of the New York Federal Reserve, remains Chairman of the Bank for International Settlements' Banking Supervisory Committee. See Hansell & Muehring, *supra* note 53, at 49 (describing Corrigan's competence to probe derivatives as result of his experience resolving banking scandals); Kelley Holland, *Corrigan Cultivates Role as Defender of the Fed*, AM. BANKER, Oct. 14, 1992, at 1, 9 (quoting Henry Kaufman, former Chief Economist at Salomon Brothers, Inc., as stating that “Jerry [Corrigan] has developed great skills when it comes to judging systemic risks”).

credit, price and settlement risk they entail should give us all cause for concern."²¹⁷

Most OTC derivatives transactions are unsecured.²¹⁸ Following substantial market losses, there is the risk that the failure of one significant participant to make payments could result in their counterparty's suspension of payments, causing a rapid, global transmission of defaults to numerous participants wedded to the initial failed participant by OTC derivatives contracts. This risk is heightened by the fact that much of the derivatives business is concentrated in a small number of banks.²¹⁹ It is further exacerbated by the interconnection of swap obligations among these institutions²²⁰ and the long-term nature of the transactions.²²¹

OTC derivatives are widely used for unhedged, proprietary speculation,²²² increasing fears that a major bank could fail from trading losses and cause systemic breakdown.²²³ One reason for the

217. See Corrigan, *supra* note 106, at 12-14 (stating, in regulatory shot heard around derivatives world, that "high-tech banking and finance has its place, but it's not all that it's cracked up to be. . . . I hope this sounds like a warning, because it is.").

218. See Glasgall & Javetski, *supra* note 3, at 103 (noting that most OTC derivatives transactions are "unsecured and exposed to ever-more-volatile interest-rate, currency, and futures markets").

219. See Glasgall & Javetski, *supra* note 3, at 105 (noting that many traders restrict their business to small group of highly rated banks, such as Morgan, Bankers Trust, and Union Bank of Switzerland).

220. See Rendleman, *supra* note 28, at 30 (expressing regulators' concern over interconnection of swap risks that result from bank intermediation); A.B. Krongard, *If the Swaps Come Unglued, Watch Out!*, N.Y. TIMES, July 5, 1992, § 3, at 13 (discussing number of interconnected institutions, "the unique nature of the components, and potential abuse of leverage" as factors multiplying systemic risk); Lisa Vaughan, *Swaps Boom Worries Regulators*, INDEPENDENT, Aug. 25, 1992, at 19 (quoting Robin Leigh-Pemberton, Governor of Bank of England, as warning that "we must be alert to the possibility that through increasing the links between different financial markets, heavy use of derivatives could in some circumstances actually increase systemic risk"). The demand for sophisticated, creditworthy counterparties has concentrated the derivatives intermediary market among a handful of banking intermediaries, leading to a tangled web of transactions. See *Blaming the System*, ECONOMIST, Apr. 10, 1993, at 36, 36 (examining interconnected network of central and interbank links that adds risk to system). The network of transactions also stems from the fact that most swap participants run entire portfolios, not single swaps. See Keith Schap, *When Domino Theory Meets OTC Credit Risk*, FUTURES, Aug. 1992, at 38, 40 (using Merrill Lynch's subsidiary as example, with "161 transactions involving only 51 counterparties, an average of more than three deals to a counterparty"); Glasgall & Javetski, *supra* note 3, at 104 (noting single finance deal that took 240 swaps to balance).

221. See Claire Makin, *Hedging Your Derivatives Doubts*, INSTITUTIONAL INVESTOR, Dec. 1991, at 113, 119 (noting that "it's the long-dated transactions that cause concern"); Vaughan, *supra* note 220, at 19 (articulating fears of Richard Farrant, deputy head of banking supervision at Bank of England, that lengthening timeframe of transactions increases potential exposure to counterparty default); *supra* notes 182-86 and accompanying text (discussing enhanced credit risks attendant to longer duration of derivatives participants' exposure).

222. See Lenzner & Heuslein, *supra* note 39, at 64-65 (describing speculation as common use for derivatives); *supra* notes 110-33 and accompanying text (listing some enormous speculative losses).

223. See Hansell, *supra* note 109, at 65 (noting possibility and danger of large losses in derivatives trading); *supra* notes 212-21 and accompanying text (examining possibility of chain

popularity of derivatives as speculative devices is the exceptional leverage that they give to users.²²⁴ For options that are far "out of the money,"²²⁵ a \$1000 capital expenditure can control as much as \$1 million of equity, debt, or currency.²²⁶

Although derivatives are used primarily as hedging vehicles,²²⁷ as stated above, many of the hedging strategies employed by participants reflect an unrealistic assumption of liquidity.²²⁸ Thus, dynamic hedging strategies could fail when hedging is most greatly needed. It is not difficult to envision, then, both systemic scenarios articulated in this Comment occurring simultaneously: (1) the OTC derivatives dealer unable to hedge market exposure would fail from trading losses,²²⁹ defaulting on outstanding derivatives obligations and igniting a chain reaction of such defaults in other dealers; and, (2) by attempting to effectuate dynamic hedging, participants would severely increase selling pressure on an already crashing market.²³⁰ Presum-

reaction that could seriously affect world markets). Yet, the proposition that derivatives actually decrease systemic risk has strong anecdotal evidence. Vast improvement in the financial health of banks has coincided with the growth of the derivatives market. See *FDIC to Close 15 Offices, Dismiss 3,300 Employees*, WALL ST. J., Sept. 16, 1993, at A14 (noting number of bank failures shrank from 122 in 1992 to 34 in 1993 and that FDIC downsizing reflects improved health of banking industry). Improved health in the banking industry is substantially the result of profitable banks in the derivatives markets. See *supra* notes 86-87 and accompanying text (attributing banks' record trading profits to derivatives transactions).

224. See Lenzner & Heuslein, *supra* note 39, at 62 (explaining that common use for derivatives is speculation and that derivatives give speculators "tremendous leverage").

225. See GASTINEAU, *supra* note 7, at 166 (defining "out of the money" as option that has no intrinsic value because underlying security is trading at price lower than exercise price of option to buy or less than exercise price of option to sell). An example of an option that is far "out of the money" would be an option to buy a security at \$110 per share when the underlying security is currently trading at \$90 per share.

226. See Lenzner & Heuslein, *supra* note 39, at 64 (illustrating leverage of derivatives by examining George Soros' \$1.5 billion derivatives gain from betting against weak currencies in foreign exchange during September 1992 European currency crisis). Soros' duel against the Italian and English central banks would not have been possible without the leverage afforded by derivatives; he simply would not have had the capital to stay at the table. *Id.* at 64-65. Ironically, Soros later warned Congress of the dangers presented by derivatives. See Fromson, *supra* note 117, at D14 (quoting Soros in testimony before House Banking Committee: "[derivatives trading strategies] raise the specter of financial dislocations . . . [possibly leading to] catastrophic losses").

227. See *supra* note 32 and accompanying text (explaining role of derivatives in hedging strategies).

228. See *supra* notes 166-67 and accompanying text (describing why liquidity will evaporate when large numbers of participants attempt to transact hedging readjustments during market disruptions).

229. See *supra* notes 108-26 and accompanying text (describing some vast market losses). The 14th largest industrial group in Germany required a \$1.9 billion bailout from creditors to stave off default caused by trading losses in the OTC derivatives market). See *supra* notes 126-33 and accompanying text (describing trading losses of Metallgesellschaft).

230. See *supra* note 164 and accompanying text (describing how mass presumption of liquidity exacerbates market decline).

ably, information reaching the market regarding a major counterparty's default would further exacerbate panicked selling.²³¹

Because derivatives transactions are off-balance sheet activities,²³² how much banks are hedging and betting is difficult to discern.²³³ Former SEC Chairman Richard Breeden has argued that "in actual practice, there may be no way to distinguish between speculative trading activity and hedging strategies."²³⁴

Despite widespread fears of systemic risk, the OTC derivatives market has already weathered major counterparty default. Investment bank Drexel Burnham Lambert collapsed with \$30 billion in swaps on its books,²³⁵ and the Bank of New England,²³⁶ the Development Corporation of New Zealand, and British & Commonwealth Merchant Bank each defaulted on large swaps positions without causing

231. See Buchan, *supra* note 208, at 4 (describing severe liquidity and price decline in junk bond market following rumors that government would close Drexel Burnham Lambert).

232. See Dutt, *supra* note 189, at D12 (noting companies do not account for derivatives contracts in normal financial reporting and that such contracts are disclosed in footnotes to financial statements without meaningful details). One derivatives expert has noted that financial statements are virtually meaningless for these institutions. Beder Interview, *supra* note 168.

233. See Thomas L. Hazen, *Public Policy: Rational Investments, Speculation, or Gambling?—Derivative Securities and Financial Futures and Their Effect on Underlying Capital Markets*, 86 Nw. U. L. REV. 987, 1036 (1992) (implying that derivatives market is merely system of legalized gambling in which wealth is transferred).

234. See Richard C. Breeden, *The Use and Control of Derivatives: The Regulator's Perspective*, Remarks at the International Capital Mobility and Financial Derivatives Conference 9 (June 28, 1993) (on file with *The American University Law Review*) (discussing further obstacle to understanding risks created by lack of clear accounting standard for assets and liabilities in derivatives positions).

235. See Glasgall & Javetski, *supra* note 3, at 103 (noting that Federal Reserve officials had to enter trading desks of both Drexel Burnham Lambert and Bank of New England to unwind billions of dollars in swaps, and quoting Bank of International Settlements general manager Alexandre Lamfalussy as stating that Drexel's insolvency "almost upset the whole global payments system"); cf. Robert J. Schwartz, Remarks at the ISDA's Review of the Group of Thirty Global Derivatives Study 2-3 (July 29, 1993) (on file with *The American University Law Review*) (stating that there have been no failures due to derivatives and that when failures have occurred, derivatives portfolios were "liquidated in an orderly manner").

236. Technically, the Bank of New England's foreign exchange and interest rate contracts were not covered by Federal Depositors Insurance Corporation (FDIC) insurance, a form of insurance guaranteed by the government to most bank depositors. Despite the lack of FDIC insurance, the U.S. government assisted in unwinding most of Bank of New England's \$35 billion swaps book before the FDIC took over management of the bank's assets. See Rendleman, *supra* note 28, at 30 (arguing that banks can be "too big to fail" and therefore have all debt obligations guaranteed by government because systemic risk is too great). When the government guarantees the debt obligations of banking institutions through FDIC depositors insurance or other means, the cost incurred by the failed portfolio is eventually borne by the taxpayer. *Id.* Once the FDIC took over the Bank of New England, the Federal Government continued actively to ward off systemic risk, transferring the remaining derivatives obligations to three "healthy" banks. See Jerry Knight, *'Too Big' Policy Eased Loss at Bank of New England*, WASH. POST, June 19, 1991, at B1 (describing how U.S. Federal Reserve "orchestrated" Bank of New England's liquidation throughout entire insolvency process in order to avoid sudden collapse); Stephen Labaton, *U.S. Is Taking Over a Group of Banks to Head Off a Run*, N.Y. TIMES, Jan. 7, 1991, at A1, D8 (listing three banks as recipients of remaining obligations of defaulted Bank of New England's swaps book).

significant systemic damage.²³⁷ These isolated defaults, however, occurred in the absence of significant market movement. An enormous wave of volatility across capital markets, such as simultaneous equity and currency crashes, could cause defaults of unprecedented nature and magnitude.²³⁸ Appraising systemic risk by confidently pointing to these isolated bankruptcies is akin to discussing the risk of nuclear holocaust by examining the global impact of nuclear testing on an isolated Pacific island.

As stated above, derivatives allow users a hedging vehicle of unprecedented utility.²³⁹ Tumultuous upheavals across multiple markets, however, could cause a derivatives-led plunge into the economic abyss. Counterparty default and its attendant systemic risk may present one of the greatest challenges the financial system has ever faced. While perfect clarity of risk cannot be empirically ascertained, a uniform framework in which to fit these risks is essential to the continued orderly operation of the global financial markets.

III. THE ENFORCEABILITY OF CLOSE-OUT NETTING IN OTC DERIVATIVES TRANSACTIONS

A. *The Mechanics of Netting*

When legally enforceable, "netting"²⁴⁰ refers to the ability to aggregate reciprocal claims. When one of the parties to a netting contract is bankrupt,²⁴¹ enforceable netting results in the reduction

237. See Michael Liebowitz, *Can the Triple-A Subs Live Up to Their Billing?*, INVESTMENT DEALERS DIG., Nov. 2, 1992, at 16, 18 (noting that four major bankruptcies created little significant damage to swaps market despite large defaults); cf. U.S. DEP'T OF THE TREASURY, MODERNIZING THE FINANCIAL SYSTEM: RECOMMENDATIONS FOR SAFER, MORE COMPETITIVE BANKS 29 (1991) ("[M]ore must be done directly to reduce the systemic risk involved in bank failures. This in turn will reduce the number of occasions that uninsured depositors must be protected.").

238. See Hansell, *supra* note 109, at 51 (describing possibility of huge losses stemming from derivatives and volatile markets).

239. See *supra* notes 32-35, 149-56 and accompanying text (explaining hedging and delta hedging of risk).

240. See GASTINEAU, *supra* note 7, at 155 (defining "netting agreement" as "contractual offset of payables against receivables to reduce credit exposure to a counterparty"); WORKING GROUP ESTABLISHED BY THE CENTRAL BANKS OF THE GROUP OF TEN COUNTRIES, RECENT DEVELOPMENTS IN INTERNATIONAL INTERBANK RELATIONS app. B, at 61 (1992). The Group of Ten Working Group defines "netting" as:

[A]n agreed offsetting of positions or obligations by trading partners or participants in a system. The netting reduces a larger number of individual positions or obligations to a smaller number of positions. Netting may take several forms which have varying degrees of legal enforceability in the event of default of one of the parties.

Id.

241. This Comment uses the terms "bankruptcy" and "trustee" generically to refer to the regime and administrator across jurisdictions.

of the nonbreaching party's credit exposure to the bankrupt counterparty.²⁴² To illustrate, assume two parties create two open contracts for the sale of derivative products. As the result of market movement, party A owes party Z \$10 million on one contract, and party Z owes party A \$10 million on the other contract. If party Z becomes bankrupt, and netting is enforceable, party A has the right to immediately terminate the agreement, calculate damages on a net basis, and "set-off"²⁴³ the \$10 million it has incurred against the \$10 million it is owed.²⁴⁴ As a result, the credit exposure of A is zero.

Under some bankruptcy regimes, however, party A may not be able to enforce termination, netting, and set-off provisions against the counterparty.²⁴⁵ If netting is not enforceable, party A would have a *gross* exposure of \$10 million to party Z, and vice versa. Instead of offsetting this exposure, A's "profitable" contract would be reduced to an unsecured claim for recovery against a bankrupt party. The likelihood of A receiving the full benefit of its bargain in this latter example is tenuous at best. For example, the administrator or trustee²⁴⁶ for the insolvent counterparty may be able to "cherry-pick"²⁴⁷ profitable contracts and refuse to honor unprofitable ones.²⁴⁸ Using the above hypothetical as an illustration, a cherry-

242. See Philip R. Wood, *Netting in Commodities and Financial Markets*, in OVER-THE-COUNTER DERIVATIVES: CONFERENCE DOCUMENTATION 1 (IBC Financial Focus, 1993) [hereinafter Wood, *Netting in Commodities*] (on file with *The American University Law Review*) (listing objects of netting as reducing credit exposure to counterparty and minimizing transaction costs associated with maintaining credit lines to cover multiple gross exposures). The reduction in credit exposure in jurisdictions that enforce netting can be greater than 90%. *Id.*

243. See GASTINEAU, *supra* note 7, at 209 (defining "set-off" as "the right of the non-defaulting party to reduce its debt to the defaulting party by the amount owed it").

244. See Daniel P. Cunningham & William P. Rogers, Jr., *Netting is the Law*, in ADVANCED SWAPS AND DERIVATIVE FINANCIAL PRODUCTS, at 177, 187 (PLI Corp. L. & Prac. Course Handbook Series No. 746, 1991) [hereinafter Cunningham & Rogers, *Netting Is the Law*] (explaining solvent party's rights in enforced netting jurisdictions).

245. Daniel P. Cunningham & Paul Michalski, *Enforceability Under Various Bankruptcy Laws of the Automatic Termination and Netting Provisions of the ISDA Standard Form Agreements*, in ADVANCED SWAPS AND DERIVATIVE FINANCIAL PRODUCTS, *supra* note 244, at 227, 235; see GROUP OF THIRTY REPORT, *supra* note 4, at 15 (stating that enforceability of netting is still somewhat uncertain in France); DEUTSCHE BUNDESBANK, *supra* note 52, at 53 (noting that set-off agreements may not be available in Germany).

246. See BLACK'S LAW DICTIONARY 147 (6th ed. 1990) (defining "bankruptcy trustee" as someone who administers estate of bankrupt debtor and holds it in trust for benefit of creditors).

247. See Wood, *Netting in Commodities*, *supra* note 242, at 3 (describing "cherry-picking" as affirmation of contracts favorable to insolvent and rejection of contracts unfavorable to insolvent); see also GASTINEAU, *supra* note 7, at 57 (stating that "cherry-picking" is practiced during some bankruptcy proceedings).

248. One such regime, where participants to OTC derivatives transactions could not enforce termination, netting, or set-off provisions, occurred under the preamended U.S. Bankruptcy Code. See *infra* notes 270-309 and accompanying text (describing inequitable incompatibility of preamended Code with OTC derivatives participants' explicitly stated intentions).

picking trustee would demand a \$10 million payment from A for Z's profitable contract, and repudiate Z's \$10 million debt to A. Thus, a counterparty who is a creditor to a bankrupt party on a net basis can become a debtor to the bankrupt party when the transactions are viewed on a gross basis.²⁴⁹

Before examining the historical and current enforceability of termination and netting agreements, it is important to note that the major problem with regard to netting derivatives transactions arises in the case of the bankruptcy of a participant.²⁵⁰ When one of the parties is bankrupt, the enforceability of a netting arrangement hinges on the particular bankruptcy laws and rules governing the transaction in question.²⁵¹ In the absence of insolvency proceedings,²⁵² a legally valid contract stipulating that netting arrangements will be observed is fully enforceable in accordance with its terms.²⁵³

B. Master Agreements

Most swaps transaction participants use a single "master agreement"²⁵⁴ for all their transactions with a particular counterparty.²⁵⁵ The International Swaps & Derivatives Association, Inc. (ISDA)²⁵⁶ publishes two standardized contracts for documenting interest rate

249. Ernest T. Patrikis & Karen Walraven, *The Netting Provisions of the Federal Deposit Insurance Corporation Improvement Act of 1991*, FUTURES INT'L L. LETTER, May 1992, at 1, 6.

250. See Stephen R. Greene, *The Impact of Derivatives Regulation on Netting (and the Impact of Netting on Derivative Regulation)*, Remarks at Risk Magazine/CATS Software Symposium 2 (Dec. 2, 1992) (on file with *The American University Law Review*) (stating that party must be in "default" for enforceability questions to arise in otherwise valid netting contract). Greene defines "default" as "the commencement of liquidation, winding-up, bankruptcy or similar insolvency proceedings by or against the party." *Id.*

251. *Id.* at 3-4.

252. To allow solvent bankrupt parties to escape enforceability of their contracts would appear inequitable. Judge Posner has stated that "[i]f the bankrupt is solvent the task for the bankruptcy court is simply to enforce creditors' rights according to the tenor of the contracts that created those rights." *In re Chicago, Mil., St. P. & Pac. R.R.*, 791 F.2d 524, 528 (7th Cir. 1986).

253. See *Senate Interest Swap Hearings*, *supra* note 51, at 51 (statement of William J. Perlstein, Wilmer, Cutler & Pickering, Washington, D.C.) (emphasizing parties' ability to effectuate termination provisions outside bankruptcy proceedings); Greene, *supra* note 250, at 2 (articulating enforceability of contractual provisions when parties remain solvent).

254. See GASTINEAU, *supra* note 7, at 148 (defining "master swap agreement" as "[c]omprehensive documentation of standard terms and conditions covering all swap transactions between two counterparties").

255. Cunningham & Rogers, *Netting Is the Law*, *supra* note 244, at 186 n.9.

256. See Aaron Pressman, *National*, BOND BUYER, June 22, 1993, at 24 (stating that ISDA is comprised of over 200 swap dealers); Tucker, *supra* note 29, at n.31 (noting that ISDA was formed in 1985). Prior to changing its name in 1993 to the International Swaps & Derivatives Association, Inc., ISDA was known as the International Swap Dealers Association, Inc. *Banking Figures*, THOMSON'S INT'L BANKING REGULATOR, Aug. 2, 1993, at 8.

and currency deals.²⁵⁷ Participants may choose either the ISDA Multi-Currency—Cross Border Master Agreement or the ISDA Local Currency—Single Jurisdiction Master Agreement, depending on the nature of their counterparty and the transactions contemplated.²⁵⁸

Section 6(a) of each contract explicitly delineates the right to terminate the agreement prematurely when an “event of default”²⁵⁹ occurs.²⁶⁰ This “event of default,” as articulated by section 5(a) (vii), occurs “any time” a counterparty becomes bankrupt,²⁶¹ possibly resulting in termination of the agreement “immediately.”²⁶² The agreements then provide for the nonbreaching party to calculate damages²⁶³ on a net basis and set-off the collateral the nonbreaching party is holding against any secured claims under the contract.²⁶⁴

The U.S. Bankruptcy Code gives trustees the power to assume, assign, or reject the contracts of the bankrupt party in limited

257. Cunningham & Michalski, *supra* note 245, at 231. The first contract, entitled “Interest Rate Swap Agreement,” is used for U.S. dollar interest rate swaps and is explicitly governed by New York law. *Id.* The second contract, called the “Interest Rate and Currency Exchange Agreement,” is used for international currency and interest rate swaps, and allows parties to choose between New York and English law. *Id.*

258. See Memorandum of Law from Cravath, Swaine & Moore for the International Swaps & Derivatives Association, Inc., Over-the-Counter Derivatives Transactions: Netting Under the U.S. Bankruptcy Code, FIRREA and FDICIA 3 n.4 (June 22, 1993) [hereinafter ISDA Memorandum] (on file with *The American University Law Review*) (noting that other than multicurrency and cross-border language in cross-border agreement, two ISDA master agreements are substantively identical).

259. See International Swap Dealers Association, Inc. Multicurrency—Cross Border Master Agreement 5-6 (1992) [hereinafter ISDA Master Agreement] (on file with *The American University Law Review*) (indicating that “event of default” includes failure to pay or deliver, breach of agreement, credit support default, misrepresentation, default under specified transaction, cross default, bankruptcy, and merger without assumption).

260. See *id.* at 8 (articulating right to prematurely terminate following “termination event,” known as “early termination”).

261. *Id.* at 5-6. Section 5(a)(vii), in pertinent part, broadly interprets bankruptcy as occurring when a party:

- (1) is dissolved (other than pursuant to a consolidation, amalgamation or merger);
- (2) becomes insolvent or is unable to pay its debts as they become due;
- (3) makes a general assignment, arrangement or composition with or for the benefit of its creditors;
- (4) institutes or has instituted against it a proceeding seeking a judgement of insolvency or bankruptcy or any other relief under any bankruptcy or insolvency law or other similar law affecting creditors’ rights, or a petition is presented for its winding-up or liquidation;
- (6) seeks or becomes subject to the appointment of an administrator, provisional liquidator, conservator, receiver, trustee, custodian or other similar official for it or for all or substantially all its assets

Id. at 6.

262. See *id.* at 8 (indicating that immediate termination may occur only upon occurrence of certain forms of bankruptcy).

263. See Cunningham & Rogers, *Netting Is the Law*, *supra* note 244, at 183 (noting damages are generally calculated according to “actual direct compensatory damages”).

264. Cunningham & Rogers, *Netting Is the Law*, *supra* note 244, at 187.

circumstances.²⁶⁵ This practice is known as selective assumption.²⁶⁶ A central question regarding the master agreement is whether all the transactions to be performed under the agreement are to be viewed as single or multiple transactions.²⁶⁷ If the relevant bankruptcy regime gives trustees the power of selective assumption and views the transactions of a master agreement as one single transaction, the trustee must reject or adopt the netted transaction as a whole. This type of bankruptcy regime eliminates the possibility that discrete contracts will be cherry-picked by the trustee from within the agreement. If, however, the bankruptcy laws of the governing jurisdiction allow selective assumption, and view the master agreement as a series of individual transactions, the trustee will be allowed to cherry-pick among the "multiple" contracts.²⁶⁸ Inexplicably, this inequitable practice of "cherry-picking" the transactions within a master agreement had the statutory blessings of the preamended Bankruptcy Code.²⁶⁹

C. The 1978 U.S. Bankruptcy Code's Incompatibility with the ISDA's Master Swap Agreement

The U.S. Bankruptcy Code governs the bankruptcy of most U.S.

265. Under the preamended U.S. Bankruptcy Code, the ability of the trustee to cherry-pick transactions was facilitated by the assumption and rejection provisions of § 365(a). See 11 U.S.C. § 365(a) (1988) (providing that "the trustee, subject to the court's approval, may assume or reject any executory contract . . . of the debtor"). Whether cherry-picking would have been enforceable under the preamended Code, however, is uncertain. Bankruptcy law is equitable in nature, *In re Chicago, Mil., St. P. & Pac. R.R.*, 791 F.2d 524, 528 (7th Cir. 1986), and the cherry-picking would have been "subject to the court's approval." 11 U.S.C. § 365(a). While a court of equity would not likely approve of such a seemingly inequitable practice, the uncertainty surrounding trustee cherry-picking was of "particular importance to swap participants." See Tucker, *supra* note 29, at 607-08 (noting that swap participants were particularly interested in 11 U.S.C. § 101(55)(c), which eliminated concern with cherry-picking raised by § 365(a)).

266. See Tucker, *supra* note 29, at 592 n.68 (describing role of selective assumption with respect to executory contracts).

267. See Tucker, *supra* note 29, at 592 n.68 (raising issue of whether swap master agreement is "single integrated contract" or "series of unrelated contracts").

268. *Senate Interest Swap Hearings*, *supra* note 51, at 12 (statement of Mark C. Brickell, Chairman, International Swap Dealers Association) (noting that trustee could assume beneficial contracts and reject others through selective assumption, thus violating express tenants of master swap agreement).

269. See Philip R. Wood, *Netting Under United States Law*, in *OVER-THE-COUNTER DERIVATIVES: CONFERENCE DOCUMENTATION*, *supra* note 242, at 1, 3 [hereinafter Wood, *Netting Under U.S. Law*] (on file with *The American University Law Review*) (explaining that § 365(e) of 1978 U.S. Bankruptcy Code gives "direct statutory sanction of cherry-picking"). This counterintuitive result is reinforced by § 362 of the Code, which states that the non-defaulting counterparty cannot set-off, and therefore net, debts it has incurred against those it is owed by the defaulting counterparty. *Id.*

companies that are neither banks nor insurance companies.²⁷⁰ The preamended Bankruptcy Code's asserted legislative purpose was to allow governed American companies attempting to restructure their debt under chapter 11 "a breathing spell and time to work constructively with [their] creditors."²⁷¹ Unfortunately, this admirable theory presented an unworkable standard in practice with respect to swap contracts, lending uncertainty to the enforceability of termination, netting, and set-off in an ISDA master agreement.²⁷² In attempting to protect the rights of debtors, the preamended Code operated severely to impair the rights of creditors.

I. Automatic stay under § 362

Prior to 1990, terminating a derivatives contract in default and attempting to recover damages, a central feature of the ISDA Master Agreement,²⁷³ would have contravened § 362(a) (6) of the Bankruptcy Code.²⁷⁴ Under the provisions of the 1978 Bankruptcy Code, when a bankruptcy petition is filed under sections 301, 302, or 303, § 362(a) "operates as a stay, applicable to all entities"²⁷⁵ against any attempt to "collect, assess, or recover a claim against the debtor that arose before the commencement of the case under this title."²⁷⁶ Further, § 362(a) (7) explicitly stays "the setoff of any debt owing to

270. See 11 U.S.C. § 109 (1988) (setting forth who may and may not be debtor under U.S. bankruptcy law); see also Wood, *Netting Under U.S. Law*, *supra* note 269, at 1 (noting that, other than FDIC-insured and uninsured chartered commercial banks, savings and loan associations, and insurance companies, most U.S. companies are governed by bankruptcy Code). Those covered include U.S. bank holding companies, non-bank affiliates of U.S. bank holding companies, U.S. investment banks, U.S. brokers and dealers, and companies authorized to deal in exchange-traded futures contracts. Wood, *Netting Under U.S. Law*, *supra* note 269, at 1-2.

271. H.R. REP. NO. 595, 95th Cong., 2d Sess. 174 (1977), *reprinted in* 1978 U.S.C.C.A.N. 5963, 6135.

272. See Tucker, *supra* note 29, at 593 (noting concern of swap participants prior to 1990 amendments). Additionally, the common law provided little clarity. By 1990, the issue of swaps in bankruptcy had arisen only once in the courts. See *Beverly Hills Sav. v. Renault Acceptance B.V.*, No. C-549-684 (Cal. Super. Ct. May 30, 1985) (issuing preliminary injunction that prevented Renault from terminating swap contract and selling bankrupt party's collateral to satisfy debt).

273. See *supra* notes 259-64 and accompanying text (discussing termination and set-off rights delineated in ISDA Master Agreement).

274. Tucker, *supra* note 29, at 594.

275. 11 U.S.C. § 362(a) (1988). An "entity" is defined by the Bankruptcy Code as any "person, estate, trust, governmental unit, [or] United States trustee." 11 U.S.C. § 101(14) (1988).

276. 11 U.S.C. § 362(a)(6) (1988); see 2 WILLIAM M. COLLIER, COLLIER ON BANKRUPTCY ¶ 362.01 (Lawrence P. King et al. eds., 15th ed. 1988) (stating that § 362 "provides for a broad stay of litigation, lien enforcement, and other actions, judicial or otherwise, which would affect or interfere with property of the estate, property of the debtor, or property in the custody of the estate").

the debtor that arose before the commencement" of bankruptcy proceedings.²⁷⁷

The legislative history of § 362 explains Congress' admirable intent to create in the automatic stay "one of the fundamental debtor protections provided by the bankruptcy laws."²⁷⁸ The "protection" so explicitly sought for debtors, however, would have had an inequitable impact on the rights of creditors.²⁷⁹ Congress opined that the automatic stay would not hinder creditors' rights.²⁸⁰ The stay merely prevents enforcement "pending an orderly examination of the debtor's and creditors' rights."²⁸¹ Yet, capital markets are dynamic by nature.²⁸² High volatility can dramatically change the price, yield, or return of underlying securities in short periods of time.²⁸³ As a practical matter, delaying the ability to terminate an OTC derivatives contract can result in catastrophic economic losses to the nonbreaching party from adverse market movements.²⁸⁴

For example, assume the counterparty to Merrill Lynch's ill-fated, mortgage-backed securities position in 1987²⁸⁵ had gone into bankruptcy prior to the volatile market movement that occurred.²⁸⁶ The automatic stay would have operated to enjoin²⁸⁷ Merrill Lynch from terminating the agreement with the defaulting counterparty, effectively granting the debtor the "breathing spell from his creditors"²⁸⁸ that Congress envisioned. The passage of time for the "orderly examination of the debtor's and creditor's rights," however, would have resulted in a sharp market movement away from Merrill

277. 11 U.S.C. § 362(a)(7) (1988).

278. S. REP. NO. 989, 95th Cong., 2d Sess. 54 (1978), *reprinted in* 1978 U.S.C.C.A.N. 5787, 5840.

279. *See* Tucker, *supra* note 29, at 583 n.13 (claiming that risk of damages to creditors are substantial in relation to benefits received by debtors).

280. H.R. REP. NO. 595, 95th Cong., 2d Sess. 342 (1977), *reprinted in* 1978 U.S.C.C.A.N. 5963, 6298.

281. *Id.*

282. *See Senate Interest Swap Hearings, supra* note 51, at 25 (statement of Mark C. Brickell, Chairman, International Swap Dealers Association) (commenting that currency exchange and interest rate markets tend to fluctuate rapidly).

283. *See* GASTINEAU, *supra* note 7, at 245 (defining volatility).

284. *See supra* notes 110-25 and accompanying text (discussing speed and magnitude of actual losses in OTC derivatives markets).

285. *See supra* note 110 and accompanying text (describing how Merrill Lynch lost \$377 million in mortgage-backed securities position in less than one month in 1987).

286. The actual cause of Merrill Lynch's vast losses were adverse movements in interest rates, LEWIS, *supra* note 110, at 145, wholly unrelated to the Bankruptcy Code's automatic stay. As Merrill Lynch can attest, adverse market movements may destroy vast amounts of capital overnight. The speed and size of the losses in this example evidence the onerous economic burden that could face a creditor enjoined from action by the automatic stay.

287. *See* H.R. REP. NO. 595, 95th Cong., 2d Sess. 344 (1977), *reprinted in* 1978 U.S.C.C.A.N. 5963, 6300 (describing stay as "essentially an injunction").

288. *Id.* at 174, *reprinted in* 1978 U.S.C.C.A.N. at 6135.

Lynch's position.²⁸⁹ Despite legislative intent to the contrary,²⁹⁰ an injunction that operates to force unlimited losses on nonbreaching creditors does indeed infringe upon "the right of creditors."²⁹¹

2. *The inability to terminate on condition of bankruptcy under § 365(e)*

The ISDA Master Agreement's stated "Right to Terminate Following Event of Default"²⁹² directly contravened § 365(e)²⁹³ of the preamended Bankruptcy Code. Under the standard ISDA contract, "events of default" explicitly include the broadly interpreted incident of "bankruptcy."²⁹⁴ Parties to a standard derivatives contract therefore manifestly expressed their intent that a right of termination occur should one of the parties become bankrupt. Section 365(e)(1), however, clearly stated in pertinent part that "[n]otwithstanding a provision in an executory contract . . . an executory contract . . . may not be terminated or modified . . . solely because of a provision in such contract or lease that is conditioned on the insolvency or financial condition of the debtor."²⁹⁵ Consequently, the

289. Ordinarily, Merrill Lynch would be able to hedge against the losses incurred during the pendency of the automatic stay. In a severe market disruption, however, where everyone is selling and no one is buying, hedging may be an impossibility. See *supra* note 155 and accompanying text (discussing inability to effectuate hedging in illiquid market).

290. See *supra* note 281 and accompanying text (stating that § 362 would not affect creditors' rights).

291. H.R. REP. NO. 595, 95th Cong., 2d Sess. 342 (1977), reprinted in 1978 U.S.C.C.A.N. 5963, 6298. Relief from an otherwise onerous automatic stay is articulated in § 362(d)-(f). The section relevant to derivatives transactions, § 362(f), grants creditors the right to seek *ex parte* relief from the stay if the relief is "necessary to prevent irreparable damage to the interest of an entity." 11 U.S.C. § 362(f) (1988). The burden of proving "irreparable damage" is on the creditor seeking the relief. § 362(g)(1). Due to the dynamic nature of short-term interest rates, however, proving "irreparable harm" based on adverse movements would be an unreliable exception to the stay. Tucker, *supra* note 29, at 598 n.101. The practical impact of this lack of certainty would be the erection of further barriers to lower credit participation in OTC derivatives transactions. See *supra* notes 182, 187-91 and accompanying text (discussing increasing low-credit preclusion from OTC markets because of uncertainty over counterparty credit risk). Narrow participation in markets results in reduced liquidity, hampering economic efficiency. See Robert C. Lower, *Disruptions of the Futures Market: A Comment on Dealing with Market Manipulation*, 8 YALE J. ON REG. 391, 399 (1991) (observing that if market participation decreases, "liquidity which is an essential element for market efficiency would be greatly reduced").

292. ISDA Master Agreement, *supra* note 259, § 6(a), at 8.

293. 11 U.S.C. § 365(e) (1988).

294. ISDA Master Agreement, *supra* note 259, § 5(a)(vii), at 6.

295. 11 U.S.C. § 365(e)(1)(A). Section 365 further prohibited the termination of an executory contract because of "the commencement of a case under [the Bankruptcy Code]" or "the appointment of or taking possession by a trustee in a case under this title or a custodian before such commencement." *Id.* § 365(e)(1)(B)-(C). In contrast, § 5(a)(vii)(4) of the ISDA Master Agreement explicitly allows for termination of the executory contract when a counterparty "institutes or has instituted against it a proceeding seeking a judgment of insolvency or bankruptcy law or any other relief under any bankruptcy or insolvency law." ISDA Master Agreement, *supra* note 259, § 5(a)(vii)(4), at 6. The ISDA Master Agreement further contravened the preamended Bankruptcy Code by allowing termination when a counterparty

nonbreaching party would have been denied from exercising its contractual right to terminate the agreement prematurely because of counterparty bankruptcy, resulting in a vastly greater exposure to risk than that for which the nonbreaching party had bargained.²⁹⁶

3. *Section 365(a) and the uncertainty regarding assumption and rejection by the trustee*

Section 365(a) of the preamended Bankruptcy Code provides that "the trustee, subject to the court's approval, may assume or reject any executory contract . . . of the debtor."²⁹⁷ While this power to assume or reject applies exclusively to "executory contract[s]," the Bankruptcy Code drafters failed to define precisely what constituted an executory contract. The Bankruptcy Code's legislative history notes that an executory contract "generally includes contracts on which performance remains due to some extent on both sides."²⁹⁸ Any derivative product that involves an exchange of future payments between counterparties meets the requirements of "executory contract" for purposes of § 365 because the performance of making those payments "remains due" for both sides. As a result, parties to these transactions under the preamended Bankruptcy Code faced uncertainty regarding whether their contracts would be assumed or rejected by a trustee in the event of a counterparty bankruptcy.²⁹⁹

"seeks or becomes subject to the appointment of an administrator, provisional liquidator, conservator, receiver, trustee, custodian or other similar official." *Id.* § 5(a)(vii)(6), at 6. Because the preamended Bankruptcy Code ensured its prohibition against termination due to bankruptcy "[n]otwithstanding" any contractual provisions to the contrary, termination rights in the Master Agreement would have been unenforceable.

296. Tucker, *supra* note 29, at 600.

297. 11 U.S.C. § 365(a) (1988).

298. H.R. REP. NO. 989, 95th Cong., 2d Sess. 58 (1978), *reprinted in* 1978 U.S.C.A.N. 5787, 5840; *see also* BLACK'S LAW DICTIONARY, 570 (6th ed. 1990) (defining "executory contract" as "contract that has not as yet been fully completed or performed").

299. *See Senate Interest Swap Hearings, supra* note 51, at 52 (statement of William J. Perlstein, Wilmer, Cutler & Pickering, Washington, D.C.) (noting that one of most pressing concerns among swaps participants prior to amendments was possibility that trustee could cherry-pick contracts); Tucker, *supra* note 29, at 600 (discussing "valid concerns" of swaps participants regarding assumption and rejection of swaps contracts under preamended § 365). Section 365(c)(2) limits the ability of the trustee to assume or reject executory contracts. 11 U.S.C. § 365(c) (1988 & Supp. IV 1992) (stating that "trustee may not assume or assign any executory contract . . . [if] such contract is a contract to make a loan, or extend other debt financing or financial accommodations, to or for the benefit of the debtor"). In the most common form of an OTC derivative transaction, the swap agreement, "financing" is not provided by either party. Tucker, *supra* note 29, at 601. Rather, parties simply exchange streams of interest payments. *Id.* Neither is any "loan" or "debt financing" provided. *See id.* (noting that parties do not extend credit). Thus, the most common form of OTC derivative would clearly not have satisfied the exemption from assumption and rejection provided by § 365(c)(2). *See* Daniel P. Cunningham & William P. Rogers, Jr., *The Status of Swap Agreements in Bankruptcy*, in INTEREST RATE AND CURRENCY SWAPS 1989, at 203, 219 (PLI Corp. L. & Prac. Course Handbook Series No. 638, 1989) (stating that Congress had in mind only normal financing transactions and not other

The criteria allowing a trustee to reject an executory contract may be easily met by using "business judgement."³⁰⁰ The "business judgement" test "merely requires a showing by the Trustee or Debtor-in-Possession that rejection of the contract will be likely to benefit the estate."³⁰¹ Under the preamended Bankruptcy Code, when a trustee met this simple test, the trustee was granted an extensive length of time to determine whether to assume or reject the executory contracts of the defaulting party.³⁰² Because the nondefaulting party was enjoined from terminating the contract during this period under the automatic stay provision,³⁰³ the contract was subject to adverse market movements that occurred during the pendency of stay.³⁰⁴ Thus, the delays of the assumption and rejection period, in conjunction with the inability of the nonbreaching party to terminate the contract in accordance with its terms, levied the threat of substantial economic harm on the nonbreaching party under the preamended Bankruptcy Code.

The issue of whether contracts contained within an ISDA Master Agreement constitute a single agreement or a series of discrete agreements has never been determined by a U.S. court.³⁰⁵ Under § 365(a) of the preamended Bankruptcy Code, if a trustee could convince a bankruptcy court that the agreements contained in the Master Agreement were discrete contracts, the trustee would have been able to cherry-pick the contracts favorable to the bankrupt party and reject the contracts on which the bankrupt was a net payor.³⁰⁶ Given the equitable nature and broad discretion of bankruptcy

commercial arrangements that provide for payments to be made over time). Prior to the 1990 amendments, the uncertainty caused by the Bankruptcy Code regarding the potential ability of trustees to assume or reject contracts created inefficiencies in the derivatives markets. Tucker, *supra* note 29, at 602 n.119.

300. See Tucker, *supra* note 29, at 603 n.124 (discussing "business judgement" test and "loss or detriment to the estate" test as two schools of thought for determining whether trustee can reject executory contract under § 365).

301. *In re W. & L. Assocs.*, 71 B.R. 962, 966 (Bankr. E.D. Pa. 1987).

302. See 11 U.S.C. § 365(d)(1) (1988) (providing that in chapter 7 bankruptcy trustee has 60 days to make determination whether to assume or reject executory contract following order for relief). Section 365(d)(2) states that, in cases under chapters 9, 11, 12, or 13 of the Code, the court may establish a specific period of time for determining whether to assume or reject the contracts. *Id.* § 365(d)(2).

303. 11 U.S.C. § 362(a) (1988).

304. See *supra* text accompanying note 284 (discussing onerous possibility of adverse market movement during pendency of stay under preamended Bankruptcy Code).

305. Tucker, *supra* note 29, at 606.

306. See *supra* note 268 and accompanying text (explaining that cherry-picking will result if selective assumption is allowed and master agreement is regarded as several individual transactions).

courts,³⁰⁷ and notwithstanding the lack of binding precedent,³⁰⁸ such an inequitable outcome probably would not occur. The vast amounts of money at stake in OTC derivatives transactions, however, made the small possibility of performing on losing contracts and losing the benefit of winning contracts unpalatable to dealers and end-users. When this uncertainty was exacerbated by the onerous ramifications of preamended Code §§ 365 and 362, fears over credit and systemic risks heightened the inefficiencies of the OTC derivatives market.³⁰⁹

D. *The 1990 Amendments to the U.S. Bankruptcy Code*

1. *Amended definition of swap agreement and participant: a remedy to cherry-picking uncertainties*

On June 25, 1990, Congress enacted an amendment to the Bankruptcy Code that expressly addressed swap transactions.³¹⁰ In the amendments, Congress broadly defined "swap agreement."³¹¹

307. See 11 U.S.C. § 105(a) (1988) (articulating broad power of bankruptcy courts); *Bank of Marin v. England*, 385 U.S. 99, 103 (1966) (emphasizing importance of equity in bankruptcy courts); *In re Briggs Transp. Co.*, 780 F.2d 1339, 1343 (8th Cir. 1985) (noting "overriding consideration" of equity by bankruptcy courts).

308. See John P. Behof, *Reducing Credit Risk in Over-the-Counter Derivatives*, FED. RES. BANK OF CHICAGO ECONOMIC PERSPECTIVES, Jan.-Feb. 1993, at 21, 26 (noting low number of bankrupt derivative firms which could have brought suit).

309. One notable inefficiency was the exclusion of lower credit counterparties from the market. See H.R. REP. NO. 484, 101st Cong., 2d Sess. 1-3 (1990), reprinted in 1990 U.S.C.C.A.N. 223, 223-26 (discussing concerns about impact of bankruptcy on creditors in swap transactions); *Senate Interest Swap Hearings*, supra note 51, at 124 (statement of John J. Jerome, Milbank, Tweed, Hadley & McCloy, P.C.) (noting that increased certainty of bankruptcy provisions will work to eliminate OTC derivatives market's preclusion of parties with low credit ratings). Parties with lower credit ratings have been excluded from participation in this market because of the increasing credit wariness among OTC market participants. See Farrand, supra note 190 (noting that broker-dealers are paying greater attention to credit ratings of OTC-derivatives counterparties); supra notes 182-91 and accompanying text (describing prevalent attitude of credit risk-averseness in OTC derivatives market participants as a barrier to entry for lower credit entities because of unwillingness of current participants to risk entering agreements with them).

310. See Act of June 25, 1990, Pub. L. No. 101-311, 104 Stat. 267; see also Cunningham & Rogers, *Netting Is the Law*, supra note 244, at 184 (listing principal features of amendment as express exemption from automatic stay under § 362, express recognition that parties entitled to exercise contractual rights such as termination and close-out netting, and express protection for transfers under swaps agreement against trustee's power to avoid preferential payments).

311. 11 U.S.C. § 101(55) (Supp. IV 1992). Under the amended § 101, a "swap agreement" encompasses the following:

- (A) an agreement (including terms and conditions incorporated by reference therein) which is a rate swap agreement, basis swap, forward rate agreement, commodity swap, interest rate option, forward foreign exchange agreement, rate cap agreement, rate floor agreement, rate collar agreement, currency swap agreement, cross-currency rate swap agreement, currency option, any other similar agreement (including any option to enter into any of the foregoing);
- (B) any combination of the foregoing . . .

With the addition of "any other similar agreement"³¹² to the definition, the term "swap agreement" covers all existing swap transactions, as well as present and future transactions that are not specifically delineated in the amendment but have fundamental similarities to those enumerated.³¹³

The main purpose of § 101(55)(C), a key provision in the 1990 amendments, is to provide certainty that the trustee of a bankrupt party will not be able to cherry-pick profitable swaps transactions.³¹⁴ This goal is accomplished by providing that a "master agreement for any of the foregoing [delineated swap transactions] together with all supplements" constitutes a swap agreement.³¹⁵ This language explicitly states that multiple swap agreements contained within a "master agreement" will be viewed as a single "swap agreement" by the Bankruptcy Code. By viewing a master agreement as a single transaction,³¹⁶ Congress prevented trustees from assuming discrete contracts within the agreement and rejecting others. Thus, § 101(55)(C) eliminates concerns over cherry-picking for the most common form of OTC derivatives.

2. *The Code's amendment of the automatic stay and the right to terminate and exercise netting provisions*

Amended § 362(b)(14)³¹⁷ provides an exemption for swap agree-

312. *Id.* § 101(55)(A).

313. Cunningham & Rogers, *Netting Is the Law*, *supra* note 244, at 185; *cf.* H.R. REP. NO. 484, 101st Cong., 2d Sess. 4 (1990), *reprinted* in 1990 U.S.C.C.A.N. 223, 226 (stating that definition of swap agreement includes various "interest rate and foreign exchange swaps agreements," as well as "options to enter into such agreements").

314. *See* Cunningham & Rogers, *Netting Is the Law*, *supra* note 244, at 185 (asserting that amended § 101(55)(C), in conjunction with § 560 of Bankruptcy Code, eliminates ability of any trustee to cherry-pick profitable swap transactions); Tucker, *supra* note 29, at 607-08 (describing importance of cherry-picking concerns prior to amendments, and noting that amendments have effectively "settled" cherry-picking concerns); *cf.* H.R. REP. NO. 484, 101st Cong., 2d Sess. 1,3 (1990), *reprinted* in 1990 U.S.C.C.A.N. 223, 225 (explaining that purpose of 1990 amendment is to resolve uncertainties that have caused concern among swap participants, such as ability of debtor to "cherry pick").

315. 11 U.S.C. § 101(55)(C) (Supp. IV 1992).

316. Even prior to the 1990 Bankruptcy Code amendments, excellent arguments were advanced that the intent of the parties to a master agreement and the equitable nature of bankruptcy law were sufficient to ensure that a master agreement constitutes a *single* executory contract. *See, e.g.*, Memorandum by Cravath, Swaine & Moore; Davis Polk & Wardwell; Milbank, Tweed, Hadley & McCloy; Simpson Thacher & Bartlett; Sullivan & Cromwell; Wachtell, Lipton, Rosen & Katz; and White & Case for the Bank of England and the Board of Governors of the Federal Reserve System entitled "The Status of Swap Agreements Under Section 365 of the United States Bankruptcy Code" 26-33 (June 1, 1987) (on file with *The American University Law Review*). Had this argument been successfully advanced in an actual bankruptcy proceeding, the trustee would not have been able to cherry-pick profitable transactions and reject losing transactions.

317. 11 U.S.C. § 362(b)(14) (Supp. IV 1992). Section 362(b)(14) provides in pertinent part:

(b) The filing of a petition . . . does not operate as a stay . . . under subsection (a) of

ments from the scope of the automatic stay articulated in § 362(a)³¹⁸ of the Bankruptcy Code.³¹⁹ The exemption permits swaps participants to setoff any mutual obligations arising within a master agreement.³²⁰ The exemption also allows any of the debtor's "cash, securities, or other property"³²¹ being held in a collateral or margin account to be applied towards satisfaction of the debt, regardless of the financial condition of the debtor.³²² As a result of this amendment, the Bankruptcy Code explicitly allows netting of payment amounts for outstanding swaps, even when the obligations being netted arose after one of the parties filed for bankruptcy.³²³

Section 106 of the amending legislation³²⁴ added § 560, which provides for the "Contractual Right to Terminate a Swap Agreement."³²⁵ The language of § 560, when viewed in conjunction with § 362(b), makes the termination, setoff, and netting provisions of an

this section, of the setoff by a swap participant, of any mutual debt and claim under or in connection with any swap agreement that constitutes the setoff of a claim against the debtor for any payment due from the debtor under or in connection with any swap agreement against any payment due to the debtor from the swap participant under or in connection with any swap agreement or against cash, securities, or other property of the debtor held by or due from such swap participant to guarantee, secure or settle any swap agreement.

Id. § 362(b)(14).

318. Section 362(a) "operates as a stay [against] the setoff of any debt owing to the debtor that arose before the commencement of the case under this title against any claim against the debtor." 11 U.S.C. § 362(a) (1988).

319. Prior to any legislative changes to the U.S. bankruptcy regime, OTC derivatives participants attempted to avoid onerous provisions by including in their master agreement: (1) an extremely broad definition of "event of default," allowing termination of an agreement at the first onset of financial troubles, thus avoiding the restrictions in place once a counterparty actually filed for bankruptcy; (2) an *automatic* termination of the agreement in the event of default; and (3) backdating the termination to a date prior to the bankruptcy filing. Wood, *Netting Under U.S. Law*, *supra* note 269, at 3. While these efforts were never tested in court, the potential success of such obvious circumventions was questionable at best. *See id.* at 4 (noting that U.S. bankruptcy lawyers doubted effectiveness of avoidance methods employed).

320. Cunningham & Rogers, *Netting Is the Law*, *supra* note 244, at 185. A master agreement is considered a "swap agreement" under U.S. bankruptcy laws. *Id.* at 186 n.9.

321. 11 U.S.C. § 362(b)(14) (Supp. IV 1992).

322. *See* Cunningham & Rogers, *Netting Is the Law*, *supra* note 244, at 185 (describing implications of exemption to automatic stay).

323. Tucker, *supra* note 29, at 609.

324. Act of June 25, 1990, Pub. L. No. 101-311, § 106, 104 Stat. 267, 268.

325. 11 U.S.C. § 560 (Supp. IV 1992) provides:

The exercise of any contractual right of any swap participant to cause the termination of a swap agreement because of a condition of the kind specified in section 365(e)(1) of this title or to offset or net out any termination values or payment amounts arising under or in connection with any swap agreement shall not be stayed, avoided, or otherwise limited by operation of any provision of this title or by order of a court or administrative agency in any proceeding under this title. As used in this section, the term 'contractual right' includes a right, whether or not evidenced in writing, arising under common law, under law merchant, or by reason of normal business practice.

Id. § 560.

ISDA Master Agreement fully enforceable.³²⁶ A primary impact of this provision is to eliminate the applicability of § 365(e) to "swap agreements,"³²⁷ which would otherwise proscribe a nondefaulting party from terminating an agreement because of counterparty bankruptcy.³²⁸

E. FIRREA's Reduction of Inequitable FDIC Powers

On August 9, 1989, Congress enacted the Financial Institutions Reform, Recovery, and Enforcement Act of 1989 (FIRREA).³²⁹ In addition to extending the scope of the Federal Deposit Insurance Corporation (FDIC) to almost all banks and savings institutions in the United States,³³⁰ FIRREA significantly curtailed the powers of the FDIC to act as receiver³³¹ or conservator³³² for a bankrupt financial institution.³³³

In granting the FDIC the power to assume, assign, or reject contracts unfavorable to the debtor when the FDIC acts in the role of

326. *Id.* § 560.

327. *See* Tucker, *supra* note 29, at 613.

328. Cunningham & Rogers, *Netting Is the Law*, *supra* note 244, at 186. Although neither the Bankruptcy Code amendments nor the legislative history speaks on the matter, Congress likely intended the amendments to apply retroactively to all bankruptcy cases filed subsequent to the enactment of the amendments. *Id.* This assumption is validated by the equitable nature of the Bankruptcy Code. *See supra* note 307 and accompanying text (discussing significance of equity principles to bankruptcy courts). Because contracts contained in a master agreement constitute a single transaction under the amended Bankruptcy Code, failing to apply the amendments retroactively would deny Bankruptcy Code protections to all swap agreements entered into prior to 1990. Failure to apply the amendments retroactively would thus render Bankruptcy Code protections "a triviality," which has been held intolerable. *See* Travelers Ins. Co. v. Bullington, 878 F.2d 354, 360 (11th Cir. 1989) (holding that in absence of explicit congressional intent, implicit intent exists to apply Bankruptcy Code retroactively).

329. Pub. L. No. 101-73, 103 Stat. 183 (1989) (codified at 12 U.S.C. § 1811 note (Supp. IV 1992)).

330. *See* 12 U.S.C. § 1813(c) (Supp. IV 1992) (defining those depository institutions covered under FDIC following passage of FIRREA); *see also* Cunningham & Rogers, *Netting Is the Law*, *supra* note 244, at 179-80 (summarizing application of FIRREA).

331. 12 U.S.C. § 1821(e)(8)(A)(i) (Supp. IV 1992). A receivership is an equitable remedy in which property is placed under the control of a receiver who manages the property for the benefit of the insolvent's creditors. *See* BLACK'S LAW DICTIONARY 1269 (6th ed. 1990) (defining bankruptcy proceeding of receivership).

332. 12 U.S.C. § 1821(e)(8)(E)(i). A conservator is a court-appointed custodian of property that belongs to a party determined by the court to be unable to properly manage the property. UNIF. PROB. CODE §§ 1-201(6), 5-401(c) (1987). A conservator may be either a public or private agency rather than an individual. *See id.* § 5-409(a) (defining who may be appointed as "conservator").

333. *See* ISDA Memorandum, *supra* note 258, at 9 (describing how FIRREA "revised the powers of the FDIC as the receiver or conservator for an insolvent financial institution"). Despite this extension, FIRREA would not apply to an unchartered or non-federally insured bank or savings institution. *Id.* at 9 n.16. The provisions of FIRREA regarding receivership and conservatorship would also not apply to the bankruptcy of a U.S. branch of a non-U.S. bank that did not have federal depositors' insurance. *Id.*

receiver or conservator, the FDIA³³⁴ gives the FDIC virtually identical powers as a trustee under the Bankruptcy Code.³³⁵ FIRREA, however, prevents the FDIC from exercising its powers of selective assumption³³⁶ with respect to agreements that meet the definition of "qualified financial contracts" (QFCs).³³⁷ The test for whether a contract is covered by FIRREA is primarily product-specific, although there is also a counterparty inquiry.³³⁸ Because "swap agreements," "options," and "forwards" are specifically enumerated as qualified financial contracts,³³⁹ all OTC derivatives transactions clearly meet the product requirement for protection under FIRREA. Assuming that a financial entity participating in an OTC derivatives transaction is an FDIC-insured institution, such a party would meet the counterparty requirement as well.³⁴⁰

1. *Enforceability of netting and termination provisions under FIRREA*

FIRREA generally allows parties to exercise contractual rights to

334. 12 U.S.C. §§ 1821(e)(8)(E), (e)(9), (e)(12) (Supp. IV 1992); *see also* ISDA Memorandum, *supra* note 258, at 10 (noting similarities between trustee's power under Bankruptcy Code and FDIC's power under FDIA to "repudiate burdensome contracts, to enforce contracts, and to assign contracts to another party").

335. 12 U.S.C. §§ 1811-1832 (1988).

336. *See supra* note 265 and accompanying text (defining and discussing inequitable nature of "selective assumption").

337. Section 1821(e)(8)(D)(i) defines a "qualified financial contract" as any "securities contract, commodity contract, forward contract, repurchase agreement, [and] swap agreement." 12 U.S.C. § 1821(e)(8)(D)(i). FIRREA includes the following instruments in its definition of "swap agreement":

Rate swap agreements, basis swaps, commodity swaps, forward rate agreements, interest rate futures, interest rate options purchased, forward foreign exchange agreements, rate cap, floor and collar agreements, currency swap agreements, cross-currency rate swap agreements, currency futures, currency options purchased, or any other similar agreements and any options on the foregoing.

Id. § 1821(e)(8)(D)(vi). As noted in Part I of this Comment, all derivative products are based on the principal of forwards and options. *See supra* notes 21-22 and accompanying text (describing genesis of derivatives and noting that all derivatives transactions are comprised of or related to forwards and options). If all derivative products are truly based on either forwards or options, then FIRREA's expansive definition of QFC, inclusive of both forwards and options, would clearly cover *all* derivatives transactions. *See* ISDA Memorandum, *supra* note 258, at 20 (stating that "[n]on-[e]numerated [t]ransactions are likely to fall within the definition of 'forward contract' or 'securities contract'").

338. FIRREA requires a "product" that is a qualified financial contract and a counterparty that is federally chartered or federally insured. 12 U.S.C. § 1821(e)(8)(D)(i) (Supp. IV 1992); *see also* ISDA Memorandum, *supra* note 258, at 9 n.16 (explaining that "bank[s] or savings institution[s] that [are] neither federally chartered nor federally insured" will not receive coverage under FIRREA).

339. 12 U.S.C. § 1821(e)(8)(D)(i), (vi).

340. FIRREA refers to "insured depository institution" 24 times, emphasizing that the qualified financial contracts of all FDIC insured depository institutions will be covered. *Id.* § 1821(e)(8)(A)(i) (providing that "no person shall be stayed or prohibited from exercising . . . any right to cause the termination or liquidation of any qualified financial contract with an insured depository institution").

terminate an agreement due to the bankruptcy of one of the parties.³⁴¹ FIRREA imposes a limitation on early termination, however, if the termination is conditioned “solely”³⁴² on the appointment of the conservator.³⁴³ Thus, in the case of a receivership, the nondefaulting party may exercise *all* contractual termination rights enumerated in a qualified financial contract.³⁴⁴ In the case of a conservatorship, a party to a qualified financial contract may exercise any contractual right to terminate *other* than one that is conditioned solely on the appointment of the conservator.³⁴⁵

Under FIRREA, the netting provisions of qualified financial contract participants are enforceable in accordance with their terms.³⁴⁶ Section 1821(e)(8)(A)(iii) ensures this result by unambiguously providing for the “offset or net out [of] any termination value, payment amount, or other transfer obligation arising under or in connection with [one] or more [qualified financial] contracts.”³⁴⁷

2. *Rejection of cherry-picking under FIRREA*

FIRREA affords participants to qualified financial contracts protection from cherry-picking. This is accomplished through a provision proscribing selective assumption of qualified financial contracts by receivers or conservators in any “transfer” of financial assets.³⁴⁸ Indeed, when a nondefaulting counterparty’s qualified financial contracts are transferred by the conservator or receiver, they must either all be transferred as one to a single depository institution

341. *Id.* § 1821(e)(8)(A). For example, in the case of a receivership, a party to a qualified financial contract may: (i) exercise any contractual right to terminate or liquidate a qualified financial contract as a result of the appointment of the receiver; (ii) exercise “any right under any security arrangement relating to any [qualified financial] contract”; and (iii) exercise “any right to offset or net out any termination value, payment amount, or other transfer obligation arising under or in connection with [one] or more [qualified financial contracts].” *Id.* § 1821(e)(8)(A).

342. *Id.* § 1821(e)(12).

343. *Id.* § 1821(e)(8)(E) (stating that there shall be no stays on right of termination except where subject to § 1821(e)(12)).

344. *Id.* § 1821(e)(8)(A) (noting no limitation on receiver in case of termination).

345. *Id.* §§ 1821(e)(8)(E), (e)(12) (indicating that conservators are subject to provisions of subsection (e)(12)); see also ISDA Memorandum, *supra* note 258, at 9 n.18 (noting that “if there exists a contractual right to terminate based on the appointment of a conservator *and* some other event of default, then a party would be able to terminate a qualified financial contract upon the occurrence of such other event notwithstanding the appointment of the conservator”).

346. 12 U.S.C. § 1821(e)(8)(A)(iii) (Supp. IV 1992); see also Cunningham & Rogers, *Netting Is the Law*, *supra* note 244, at 182 n.3 (asserting that FIRREA does not address validity of early termination payment calculations, but merely provides for enforceability of otherwise legally valid netting provisions).

347. 12 U.S.C. § 1821(e)(8)(A)(iii).

348. *Id.* § 1821(e)(9).

or not transferred at all.³⁴⁹ Thus, FIRREA utilizes the same method as the Bankruptcy Code³⁵⁰ to eliminate the potential for cherry-picking. By treating qualified financial contracts within a master agreement as "1 swap agreement"³⁵¹ rather than as a series of discrete agreements, there is no risk of selective repudiation by the trustee when FIRREA governs the transaction.

F. Enforceability of Netting Provisions Under the Federal Depositors Insurance Corporation Improvement Act of 1991

By enacting the Federal Depositors Insurance Corporation Improvement Act of 1991 (FDICIA) on December 19, 1991,³⁵² Congress validated contractual netting provisions³⁵³ between financial institution[s] under a netting contract, "notwithstanding any other provision of law"³⁵⁴ and notwithstanding any "stay, injunction, avoidance, moratorium or similar proceeding or order, whether issued or granted by a court, administrative agency, or otherwise."³⁵⁵ An ISDA master agreement³⁵⁶ falls under FDIC's definition of a "netting

349. FIRREA states in pertinent part that in the instance of "making any transfer of assets or liabilities of a depository institution in default which includes any qualified financial contract, the conservator or receiver for such depository institution shall either . . . transfer [all QFC's] to 1 depository institution . . . [or] transfer none of the financial contracts." *Id.* § 1821(e)(9)(A)-(B); see *id.* § 1821(e)(8)(D)(vii) (providing that "any master agreement . . . together with all supplements to such master agreement shall be treated as 1 swap agreement").

350. See 11 U.S.C. § 101(55)(C) (Supp. IV 1992); Patrikis & Walraven, *supra* note 249, at 1 (stating that both Bankruptcy Code and FIRREA validate close-out provisions of certain types of contracts). The amended Bankruptcy Code's treatment of master agreements as a single agreement is viewed as an efficient method to eliminate the risk of trustee cherry-picking. Patrikis & Walraven, *supra* note 249, at 1.

351. 12 U.S.C. § 1821(e)(8)(D)(vii) (Supp. IV 1992).

352. Pub. L. No. 102-242, 105 Stat. 2236 (1991) (codified at 12 U.S.C. § 1811 (Supp. IV 1992)).

353. The Board of Governors of the Federal Reserve, the federal agency responsible for the administration of FDICIA, has observed that "[n]etting contracts between financial institutions in the United States generally are valid under the netting provisions of . . . FDICIA." 57 Fed. Reg. 31,974, 31,980 (1992).

354. Interpreting the Bankruptcy Code's language, "notwithstanding any other provision of law," using ordinary meaning, FDICIA appears to preempt all contrary federal and state laws. See ISDA Memorandum, *supra* note 258, at 13 n.38 (asserting that "FDICIA shields netting contracts from the effect of judicial stays and orders"). Examples of such preempted stays or orders include a Securities Investor Protection Corporation's (SIPC) stay or order under 11 U.S.C. § 742 (1988), and a Securities and Exchange Commission's stay or order. See 12 U.S.C. § 4405 (Supp. IV 1992) (indicating that no stay or order will "delay application of otherwise enforceable netting contracts"). In the absence of preemptive language, stays or orders authorized by the Securities Investor Protection Act of 1970 could bar the liquidation of netting contracts. 15 U.S.C. § 78ccc(b)(2)(4)(B) (1988). Similarly, the SEC could seek an order preventing liquidation of a securities contract. *Id.* § 78o(b)(1).

355. 12 U.S.C. § 4405.

356. See ISDA Master Agreement, *supra* note 259, § 6(e)(iv), at 10 (articulating parties' agreement to estimate recoverable present or future payments).

contract”³⁵⁷ because the agreement expressly anticipates “present or future payment obligations.”³⁵⁸ Thus, the benefits of contractual netting agreements will be legally binding on all parties covered by FDICIA, even in the event of bankruptcy.

Congress enacted FDICIA in part to reduce systemic risk by ensuring that netting provisions would be upheld.³⁵⁹ While this goal mirrors that of FIRREA and the Bankruptcy Code amendments, both FIRREA and the Bankruptcy Code use a product-specific approach to validating netting.³⁶⁰ In contrast, FDICIA affords protection to netting arrangements based on the character of the counterparty.³⁶¹ This approach is more sensible, as it eliminates the need to constantly update the law to keep pace with innovative derivative products.³⁶²

Section 4402(9) of FDICIA defines “financial institution” to include “a broker or dealer,³⁶³ a depository institution,³⁶⁴ a futures com-

357. 12 U.S.C. § 4402(14) (Supp. IV 1992). Section 4402(14) provides in pertinent part that a “netting contract” is a contract between two or more financial institutions that “is governed by the laws of the United States, any State, or any political subdivision of any State, and . . . provides for netting present or future payment obligations or payment entitlements (including liquidation or close-out values relating to the obligations or entitlements) among the parties to the agreement.” *Id.*

358. *Id.*

359. *See id.* § 4401 (noting that netting procedures will only be effective “if they are recognized as valid and legally binding”); U.S. DEP’T OF THE TREASURY, MODERNIZING THE FINANCIAL SYSTEM 29 (1991) (articulating that underlying reason for enacting FDICIA was need “to reduce the systemic risk involved in bank failures, [and that such reduction would] . . . reduce the number of occasions that uninsured depositors must be protected”); *see also* Wood, *Netting in Commodities*, *supra* note 242, at 1 (stating that reduction in credit exposure in jurisdictions that enforce netting can be greater than 90%).

360. *Cf.* 11 U.S.C. § 101(55) (Supp. IV 1992) (listing those products in Bankruptcy Code considered swap agreements).

361. 12 U.S.C. § 4402(14) (stating that netting contract is “agreement between 2 or more financial institutions”).

362. *See* Patrikis & Walraven, *supra* note 249, at 1-2 (noting that FDICIA’s “netting provisions obviate the need to amend the law each time financial rocket scientists develop new products”).

363. *See* 12 U.S.C. § 4402 (1)(A) (defining “broker or dealer” to mean “any company that is registered or licensed under Federal or State law to engage in the business of brokering, underwriting, or dealing in securities in the United States”). In addition, § 4402 (1)(B) includes any affiliate of a registered broker or dealer, as determined by the Board and to the extent that it does not contravene the Act. *Id.* § 4402(1)(B).

364. *Id.* § 4402(6); *see also* ISDA Memorandum, *supra* note 258, at 12 (stating that “depository institution” includes “national and state banks, credit unions, thrift institutions, U.S. branches or agencies of foreign banks, or Edge Act corporations”). Section 4402(6) defines depository institution:

- (A) a depository institution as defined in section 19(b)(1)(A) of the Federal Reserve Act [12 U.S.C. § 461(b)(1)(A)] . . . ;
- (B) a branch or agency as defined in section 1(b) of the International Banking Act of 1978 [12 U.S.C. § 3101];
- (C) a corporation chartered under section 25(a) of the Federal Reserve Act [12 U.S.C. § 611 et seq.]; or
- (D) a corporation having an agreement or undertaking with the Board of Governors of the Federal Reserve System. . . .

Id. § 4402(6).

mission merchant,³⁶⁵ or any other institution as determined by the Board of Governors of the Federal Reserve System.”³⁶⁶ Several other defined terms refer to the term “financial institution,” which is the term that provides limitations on substantive portions of the netting provisions.³⁶⁷ Ernest Patrikis, General Counsel of the Federal Reserve Bank of New York, has written that the term “financial institution” encompasses most of the important participants in the OTC derivatives market, and if needed, the definition may be expanded by the Board to include other institutions under the netting provisions.³⁶⁸

Because the Act allows “any other institution [to be covered by FDICIA] as determined by the Board of Governors of the Federal Reserve System,”³⁶⁹ the Board is authorized to expand the scope of “financial institution.” The Federal Reserve Board recognized the urgent need for uniform enforceability of netting provisions. In May 1993, the Board issued a proposal³⁷⁰ to expand the enforceability of netting contracts by expanding the scope of “financial institution.”³⁷¹ This proposal led to the promulgation of a rule that significantly broadened the definition of “financial institution.”³⁷²

G. *The Final Piece of the U.S. Bankruptcy Regime: The Federal Reserve Board of Governors' New Definition of "Financial Institution"*

In enacting a new definition of FDICIA's “financial institution,” the Board acknowledged the need to increase efficiency and lower the present risk in the financial markets³⁷³ through wider enforceability

365. 12 U.S.C. § 4402(10). A “futures commission merchant” is a “company that is registered or licensed under Federal law to engage in the business of selling futures and options in commodities.” *Id.*

366. *Id.* § 4402(6)(D).

367. Patrikis & Walraven, *supra* note 249, at 3 (noting that term “financial institution” “is probably most significant term with respect to the scope of the netting provisions” within FDICIA).

368. Patrikas & Walraven, *supra* note 249, at 3.

369. 12 U.S.C. § 4402 (9).

370. 58 Fed. Reg. 29,149, 29,151 (1993) (to be codified at 12 C.F.R. pt. 231.1) (proposed May 19, 1993).

371. 58 Fed. Reg. 29,151. The stated purpose of this provision is to “allow more financial market participants to avail themselves of the netting provisions set forth [in FDICIA].” *Id.*

372. Reg. EE, 59 Fed. Reg. 4784 (1994) (to be codified at 12 C.F.R. § 231).

373. It is a widely held view that netting contributes to the reduction of systemic risk. See BANK FOR INT'L SETTLEMENTS, REPORT OF THE COMM. ON INTERBANK NETTING SCHEMES OF THE CENTRAL BANKS OF THE GROUP OF 10 COUNTRIES pt. B, at 10 (1990) [hereinafter BIS NETTING SCHEMES REPORT] (noting that “[e]ffective reductions in actual exposures depend upon the legal soundness of a netting scheme”); GROUP OF THIRTY REPORT, *supra* note 4, at 22 (stating that “[b]y reducing settlement risk as well as credit exposures, netting contributes to the reduction of systemic risk”); Wood, *supra* note 242, at 1 (describing reduction in counterparty credit risk of up to 90% where netting is legally enforceable); see also *supra* notes 240-49 and accompanying

of netting provisions.³⁷⁴ To achieve this stated goal, the Board created broad qualitative and quantitative tests for determining qualification as a “financial institution.”

Section 231.3(a) states that under the first, qualitative prong, a “person”³⁷⁵ qualifies as a financial institution if it “represents that it will engage in financial contracts as a counterparty on both sides of one or more financial markets”³⁷⁶ This requirement is easily met because there is no requirement that the “person” *actually* participate on both sides of one or more financial markets.³⁷⁷ A counterparty may rely on a mere representation of participation from such a “person.” The supplementary information that accompanies the new rule suggests that this creates a “safe harbor” for counterparties who rely on representations of a “person” that “holds itself out as a market intermediary.”³⁷⁸

In addition to meeting the broad qualitative test, a “person” must also meet one requirement of a two-pronged quantitative test before it may be deemed a “financial institution.” The first minimum threshold test of § 231.3(a)(1) requires a “person” to have outstanding financial contracts of at least \$1 billion in notional principal with counterparties that are not affiliates on any day in the past 15-month period.³⁷⁹ In the alternative, a “person” can qualify as a “financial institution” by having financial contracts on any day in the past 15-month period with gross mark-to-market³⁸⁰ value of at least \$100 million.³⁸¹

Once a “person” satisfies both the qualitative and quantitative prongs of the test, it will be considered a “financial institution” for the

text (presenting example of practical application of netting).

374. 58 Fed. Reg. 29,149, 29,152 (1993) (to be codified at 12 C.F.R. pt. 231.3) (proposed May 19, 1993).

375. See 59 Fed. Reg. 4784 (1994) (to be codified at 12 C.F.R. § 231.2(f)) (“Person means any legal entity, foreign or domestic, including a corporation, unincorporated company, partnership, government unit or instrumentality, trust, natural person, or any other entity or organization.”) By explicitly including “foreign” entities, the Board has ensured that foreign banks and other significant international participants could qualify as “financial institutions” under the rule. This will aid in the reduction of systemic risk by reducing the likelihood that U.S. end-users, dealing with foreign counterparties, could have contracts cherry-picked by a trustee or conservator of the foreign entity.

376. 59 Fed. Reg. 4785 (1994) (to be codified at 12 C.F.R. § 231.3(a)).

377. The supplemental commentary that accompanies the new rule suggests it would be difficult for counterparties to ascertain that an institution participates “actively” on both sides of the markets. 59 Fed. Reg. 4781, 4784. Thus, the Board enacted a flexible standard to provide a “safe harbor,” regardless of whether *actual* participation did in fact occur.

378. 59 Fed. Reg. 4781, 4784.

379. 59 Fed. Reg. 4781, 4784 (to be codified at 12 C.F.R. § 231.3(a)(1)).

380. See GASTINEAU, *supra* note 7, at 147 (defining mark-to-market as determination of value of position or portfolio at current market prices).

381. 59 Fed. Reg. 4784, 4785 (to be codified at 12 C.F.R. § 231.3(a)(2)).

purposes of any netting contract it enters into during its period of qualification, even if the "person subsequently loses its qualification."³⁸² This provision affords certainty to counterparties that contracts entered into with "financial institutions" will be subject to the netting protections of FDICIA regardless of their counterparty's future status. To add further protection to netting contracts involving "financial institutions," a grandfather clause dictates that any "person" qualifying as a "financial institution" on March 7, 1994 will be considered a "financial institution" for purposes of any contract entered into prior to that date.³⁸³

The impact of the new rule is to ensure that a wide group of OTC derivatives end-users and dealers are protected from the possibility that their counterparty may engage in the capricious practice of cherry-picking. The rule encourages enforceability of netting contracts, which, as stated above, reduce the level of systemic risk presented by OTC derivatives. The United States bankruptcy regime, as it applies to the recognition of netting, now sets a standard for other countries to emulate.

IV. REDUCING SYSTEMIC RISKS

A. *The Risks of Draconian Oversight*

Derivatives present a conundrum. They afford risk management methods of unprecedented utility, yet set the stage for a possible breakdown in an individual firm or the economy at large. To reduce the noxious risks without compromising the rewards, this Comment advocates that the derivatives industry quickly fill the perceived "regulatory void"³⁸⁴ regarding systemic risk, before the "urge to regulate,"³⁸⁵ and legislate, becomes too overpowering for Congress to resist.³⁸⁶

382. *Id.* (to be codified at 12 C.F.R. § 231.3(b)).

383. *Id.* (to be codified at 12 C.F.R. § 231.3(c)).

384. See Merton H. Miller, in *AFTER THE CRASH, LINKAGES BETWEEN STOCKS & FUTURES* 17, 21 (Robert J. Mackay ed., 1988) [hereinafter *AFTER THE CRASH*] (discussing efforts to forestall "fill[ing] the regulatory void").

385. See Richard C. Breeden, *Directors, Control Your Derivatives*, WALL ST. J., Mar. 7, 1994, at A14 ("[T]he public-policy debate too often sounds like a case of regulation in search of a problem rather than the other way around"); Leo Melamed, *In Defense of Derivatives*, BARRON'S, Mar. 7, 1994, at 67, 67 (comparing Congress' inability to regulate genetic engineering to their inability to regulate financial engineering); George Melloan, *Whitewater, Derivatives and the Urge to Regulate*, WALL ST. J., Mar. 14, 1994, at A15 (arguing that Congress' efforts to protect public from derivatives will be no more effective than their efforts to protect public from S&L crisis).

386. See SPERANDEO, *supra* note 206, at 109 ("The markets concede that the government holds the club that can break the back of American business.").

There are two reasons for advocating a private rather than public sector solution to systemic risk: (1) the incentive to retain a prudential degree of risk exists in the private sector but not in the public sector,³⁸⁷ and, (2) regulation that is more onerous in one jurisdiction relative to another will cause the derivatives business to flow out of the onerously regulated jurisdiction and into the jurisdiction of least regulatory resistance.³⁸⁸

1. *Private sector incentive*

As described above, derivatives have caused several market participants enormous losses.³⁸⁹ The stakes are high in the OTC derivatives markets. As these losses show, there is a market discipline that rewards prudential risk management³⁹⁰ and punishes excessive risk-taking.³⁹¹ Put simply, directors of corporations that wish to avoid vast losses, and thus maintain their employment and reputation, have an incentive to act prudently regarding risk-taking.³⁹²

Critics of this view might suggest that the regulatory discipline imposed on elected officials to avert risks is more potent than the market discipline imposed on risk managers. Under this view, corporate directors can take risks that destroy their firm's capital without being personally accountable, while regulators absorb the blame for taxpayer-funded bailouts. Three problems emerge from this view. First, as evidenced by the savings and loan collapse, intense

387. See AFTER THE CRASH, *supra* note 384, at 20 (“[T]aking these business decisions away [regarding the setting of futures margins] from the private sector, where the incentives are right, and transferring them to the public sector, where the incentives are wrong, will ultimately kill the futures industry.”).

388. See WINCH, CRS REPORT, *supra* note 140, at 25 (articulating “fear that the [derivatives] business will simply pick up and move elsewhere” as constraint on regulation); Gramm, *supra* note 39, at A12 (“The danger of over-regulation is that overseas competition is just a phone call away.”).

389. See *supra* notes 110-33 and accompanying text.

390. See *supra* notes 86-88 and accompanying text (describing record earnings for derivatives dealers).

391. See, e.g., *Determined Loser*, *supra* note 122, at 82 (stating that head of Kashima Oil announced his resignation “to take responsibility” for enormous derivatives losses); *Metallgesellschaft to File Countersuit Over Trading Losses*, WALL ST. J., Mar. 31, 1994, at A10 (reporting that chairman, most of board of directors, finance director, and president of U.S. subsidiary were all fired following trading loss).

392. See Breeden, *supra* note 385, at A14 (explaining corporate directors incentive to prudentially manage derivatives risks). Anecdotally, the ill-fated chief executive officer of Metallgesellschaft, Heinz Schimmelbusch, presents an example of negative incentives on a personal level. Following Metallgesellschaft's spectacular losses under Herr Schimmelbusch's stewardship, the CEO lost his job, and has received death threats because of the significant layoffs accompanying MG's bankruptcy bailout. William Glasgall & Karen Lowry Miller, *Executive in Exile*, BUS. WK., Mar. 21, 1994, at 52, 52.

regulatory supervision does not always lead to a reduction of risk.³⁹³ Second, as Nobel laureate Merton Miller has said, “[r]egulators never lose by setting margins high.”³⁹⁴ That is, regulators protect themselves from public disapproval by embracing overly risk-averse policies, notwithstanding the fact that in the process, the possibility for a substantial net gain to society may be foregone.³⁹⁵ Third, as a Congressman who has proposed legislation of the derivatives markets admits, “the problems [derivatives] present may be too sophisticated for a Congress of generalists to deal with legislatively.”³⁹⁶ Indeed, the vast disparity in pay between derivatives traders and bureaucrats suggests that the private sector maintains a comparative advantage over the public sector in terms of quantitative sophistication.³⁹⁷ Thus, the byzantine risks of derivatives are best managed by those engaged in the competition of the marketplace, who have the expertise and incentive to manage risks wisely.

2. *Maintaining business within U.S. borders*

Government regulation imposes substantial costs and impediments on users of regulated products.³⁹⁸ Government regulation that imposes high costs on the OTC derivatives markets will create an incentive for end-users to transact their OTC business offshore.³⁹⁹

393. Indeed, too much federal supervision may increase risks. See Melloan, *supra* note 385, at A15 (suggesting that federal safety net for S&L's became “so cushy” because of virtually unlimited federal deposit insurance coverage, leading to imprudent behavior).

394. See AFTER THE CRASH, *supra* note 384, at 20 (discussing why futures margins should not be set by regulators).

395. Cf. Letter from Thomas Jefferson to Thomas Cooper (Nov. 29, 1802), in POLITICAL QUOTATIONS 92 (Daniel B. Baker ed., 1990) (quoting Thomas Jefferson: “If we can prevent the government from wasting the labors of the people under the pretense of taking care of them, they must become happy.”)

396. See James A. Leach, Leach Calls for Strengthened Regulation of Financial Derivatives Industry 1 (Nov. 22, 1993) (press release on file with *The American University Law Review*) (noting that complexity does not rule out legislation of derivatives industry). *But cf.* Hu, *Misunderstood Derivatives*, *supra* note 2, at 1502 (“Government, rather than the private sector, has the incentive and ability to become informed about systemic risks.”).

397. See Brett D. Fromson, *Wall Street's Risky Bets*, WASH. POST, Oct. 28, 1993, at A1, A28 (estimating one derivative trader's annual salary at \$2-3 million per year and asserting that \$500,000 to \$1 million per year is “not unusual”); Hansell & Muehring, *supra* note 53, at 62 (quoting SEC director of market regulation William Heyman: “For \$112,000 a year [the top U.S. federal bureaucrat's salary], we can't hire someone who can check the models of kids making ten times that”); Loomis, *supra* note 49, at 57 (explaining that “bank supervisors are struggling to teach \$80,000 bank examiners how to supervise a world in which a top-notch derivatives trader can make \$1 million a year easily and maybe much more than that”); Carol J. Loomis, *A Whole New Way to Run a Bank*, FORTUNE, Sept. 7, 1992, at 78 (describing derivatives trader who quit Bankers Trust because combined annual salary and bonus of \$3 million was “insufficient”).

398. Gramm, *supra* note 39, at A12.

399. See AFTER THE CRASH, *supra* note 384, at 21. Professor Miller points out:

It is important to keep in mind that we are no longer king of the hill in world capital

The impact of this overseas business migration would be two-fold. First, the profitability of U.S. dealers that issue OTC derivative instruments would decline. Second, the flow of transactions to offshore dealers would have the ironic effect of *decreasing* the regulatory oversight of the OTC derivatives markets by U.S. regulators.⁴⁰⁰

The flow of capital out of the United States and into the Eurobond market is one example of a financial migration that occurred in reaction to government-created costs. In the late 1960s, the United States instituted a thirty percent withholding tax on interest paid on bonds sold in the United States to foreign investors.⁴⁰¹ To avoid this onerous tax, the central market for dollar-denominated bonds for non-U.S. citizens moved from New York to London.⁴⁰² Despite the subsequent repeal of the withholding tax, the market has remained overseas.⁴⁰³

B. Recommendations

1. International netting recognition

The evolution of the United States bankruptcy regime has resulted in a high degree of certainty that contractual provisions, such as close-out netting, will be enforceable in accordance with agreed terms under U.S. law. The Board's new rule regarding the definition of "financial institution," a response to the lingering inadequacies of the American regime, is a significant step towards reducing systemic risk and perpetuating a safe and efficient marketplace.

Yet as the Bank of International Settlements has stated, "netting schemes only reduce credit and liquidity exposures if they have a sound legal basis [in all jurisdictions]."⁴⁰⁴ Modern financial transac-

markets. The foreign share of the financial services and futures industry has already grown substantially in recent years and will continue to grow. We cannot stop that, but we can certainly accelerate it with ill-conceived regulation.

Id.; see also Levitt, PSA Speech, *supra* note 72, at 1 ("I am keenly mindful of the cost, impact and time commitments occasioned by regulation. Wherever possible, the Commission will lay out our case, seek the broadest kind of public response, and, dealing with the parties involved, call for private sector responses.").

400. See Gramm, *supra* note 39, at A12 (describing irony of decreased ability to regulate business that goes offshore because of high regulatory costs).

401. See MILLER, FINANCIAL INNOVATIONS, *supra* note 167, at 7 (describing genesis of Eurobond market).

402. MILLER, FINANCIAL INNOVATIONS, *supra* note 167, at 7.

403. MILLER, FINANCIAL INNOVATIONS, *supra* note 167, at 7. It should be noted that one reason the Eurobond market continued to flourish overseas was the circumvention of further regulation: a costly SEC prospectus requirement. *Id.*

404. See BIS NETTING SCHEMES REPORT, *supra* note 373, at 16 (discussing legal enforceability of netting's importance).

tions are increasingly global in nature. The fear that netting agreements⁴⁰⁵ will not be upheld by foreign courts, heightening the risk of a systemic disturbance, is a "serious concern" to forty-three percent of senior management at OTC derivatives dealers, and "some concern" to another forty-five percent.⁴⁰⁶ The enforceability of netting arrangements is questionable in several international jurisdictions,⁴⁰⁷ despite legal assurances to the contrary.⁴⁰⁸

Frederick R. Medero, the Executive Director of ISDA, has asserted that foreign jurisdictions need to "take a snapshot of the United States [bankruptcy regulation] paradigm, and do the same thing [with their own regulatory regime]."⁴⁰⁹ That is, foreign jurisdictions should study the U.S. bankruptcy regime, and conform their bankruptcy laws to its explicit recognition of the ISDA Master Agreement. This Comment advocates this approach as the best method to reduce the credit risk component of systemic risk.

Derivatives are primarily used by participants who wish to reduce risk. By increasing certainty regarding counterparty bankruptcy risk, the risk-averse will increase participation in the OTC derivatives markets. This, in turn, will result in deeper, more liquid, and

405. See *supra* notes 240-53 and accompanying text (describing netting and capricious practice of cherry-picking).

406. See GROUP OF THIRTY REPORT, *supra* note 4, at 17 (discussing netting enforceability concerns of respondents to survey).

407. See GROUP OF THIRTY REPORT, *supra* note 4, app. II at 11 (describing "uncertainty" and "difficulty concern[ing] the right of termination . . . and the efficacy of the close out netting provisions"). While the French enforceability survey concluded that netting arrangements are likely to be enforceable in accordance with their terms, it acknowledged "uncertainty . . . in the absence of specific statutory or judicial authority." *Id.* at 15; see also BANK OF ENGLAND, DERIVATIVES, *supra* note 181, ¶ 53 (reporting "widespread" concern of derivatives firms to have non-US netting enforceability "clarified"); CFTC REPORT, *supra* note 50, at 110 (calling legality of close-out netting "in doubt" in some foreign jurisdictions); WINCH, CRS REPORT, *supra* note 140, at 19 n.42 (stating "[n]etting of swap contracts has been affirmed by bankruptcy legislation in the United States . . . but the situation in other countries is less clear."); DEUTSCHE BUNDESBANK, *supra* note 52, at 53 (describing legal enforceability of close-out netting agreements as "unclear as far as German or international insolvency law is concerned"); Behof, *supra* note 308, at 28-29 (articulating opinion that enforceability of netting is not as "straightforward" in foreign jurisdictions as in United States). Does this legal uncertainty increase the pricing of derivative instruments? This question has not yet been answered by economists. See Wendy L. Gramm & Gerald D. Gay, *Scams, Scoundrels and Scapegoats: A Taxonomy of CEA Regulation Over Derivative Instruments*, J. DERIVATIVES (forthcoming 1994) (urging economists to join debate over correct regulatory landscape).

408. The ISDA has solicited enforceability opinions from local law firms in Belgium, Canada, France, Germany, Italy, Japan, the Netherlands, Sweden, and the United States. Behof, *supra* note 308, at 25-26. These opinions all conclude that close-out netting and set-off is "likely" to be enforceable. The dearth of judicial precedent that informs these opinions is likely to give little comfort to derivatives participants. See *id.* at 26 (asserting few derivatives firms have gone bankrupt). Complicating matters further, different legal regimes often have conflicting bankruptcy laws, making a harmonized international agreement potentially unworkable. *Id.*

409. Interview with Frederick R. Medero, Executive Director, ISDA, in New York, N.Y. (July 28, 1993).

ultimately more efficient markets.

2. Risk management

As stated above, the discipline of the market provides incentives for senior management to engage in prudential management of derivatives portfolios.⁴¹⁰ In light of the substantial losses that resulted from improper oversight by boards of directors,⁴¹¹ however, it is clear that market discipline alone is insufficient to conform managerial behavior to a desired level of prudence. This is so because of two fundamental corporate governance failings regarding derivatives: (1) lack of independent risk managers; and, (2) lack of corporate directors with quantitative backgrounds.⁴¹²

a. Independence

"Independence" of risk managers means evaluation of risks will be undertaken by individuals whose compensation is not linked to trading profits. In Recommendation 12, the Group of Thirty suggests that "[d]ealers and end-users should have a credit risk management function with clear independence . . ." ⁴¹³ Yet the study goes on to note that "[t]he risk management function is rarely involved in actual risk taking decisions."⁴¹⁴ If risk managers maintain *any* involvement in risk taking, how can they be independent?

The Group of Thirty's standard of independence is too flexible to ensure risk managers do not have risk taking incentives to behave imprudently. This Comment supports the adoption of a more stringent standard for independence. Under this standard, dealers and end-users should voluntarily adopt a bright line test for "independen-

410. See Loomis, *A Whole New Way to Run a Bank*, *supra* note 397, at 77 (quoting CEO of large derivatives dealer: "the single most important measure of a CEO is his company's stock price."); *supra* notes 389-97 and accompanying text (describing market discipline to engage in prudential management). Given that record trading profits have not helped stock prices of derivatives dealers, *supra* notes 88-92 and accompanying text, this quote suggests the market discipline is felt by chief executive officers.

411. See *supra* notes 110-26 and accompanying text (describing large losses from improper Board oversight).

412. See e.g., *Salomon Hires Klotz to Fill New Position in Derivatives Area*, WALL ST. J., Feb. 2, 1994, at B6 (describing Salomon Brothers' employment of derivatives researcher with "potent statistical and theoretical background . . . including extensive academic training in mathematics"); *supra* note 25 (describing predominance of advanced science and mathematics degrees in ranks of Wall Street derivatives traders). Because of the increasing complexity of derivatives, "mathematical expertise will become more highly prized." *Id.* This Comment simply advocates that mathematical expertise should also "become more highly prized," *id.*, at the corporate director level.

413. GROUP OF THIRTY REPORT, *supra* note 4, at 15. See also Beese, *supra* note 32, at 32 (calling for managers that are "separate from the traders incurring the risk").

414. GROUP OF THIRTY REPORT, *supra* note 4, at 13.

dence," where risk managers have no involvement in risk taking.

The rationale for independent supervision is clear. Bonuses based on profitable trading performance can be extraordinarily high.⁴¹⁵ Thus, for risk managers with compensation linked to trading profitability, incentives of personal profit may outweigh the market incentives to ensure prudent risk exposure. As a result, risk managers who have compensation linked to risk-taking may "emphasize rewards and downplay risks."⁴¹⁶

A fraud committed at ABN-AMRO, a bank that is both an end-user and dealer of OTC derivatives, exemplifies the negative incentives for risk managers who have revenue-based compensation.⁴¹⁷ ABN-AMRO's chief foreign exchange options trader and an assistant, two employees with revenue-based compensation, conspired to falsely inflate figures that made huge trading losses appear as profits.⁴¹⁸ The case highlights the imprudence of allowing risk management policy to be set by trading desks without independent oversight. Even where risk strategies are determined independently, the ABN-AMRO case illustrates why independent auditors must not rely exclusively on pricing assumptions provided by employees with revenue-based compensation.

Moreover, the trading fraud at ABN-AMRO is not an isolated incident. The head government bond trader at Kidder Peabody &

415. See *supra* note 397 (describing multi-million dollar trading bonuses that are common feature of derivatives industry).

416. See Hu, *Misunderstood Derivatives*, *supra* note 2, at 1492 (stating that "agents often have incentives to take action contrary to their principal's best interests . . . A person engaged in derivatives operations may emphasize rewards and downplay risks."). Regarding incentives, Professor Hu also notes that traders who incur vast losses trading may lose nothing more than their jobs and reputation, while "a successful gamble could mean lifetime wealth." *Id.* at 1493. In fact, the downside risk to employment and reputation may be overstated. Although Howard Rubin, the trader credited with losing \$377 million on one unhedged position in 1987, did indeed lose his job with Merrill Lynch, *supra* note 110 and accompanying text, he remained unemployed for less than seven months. See Stephen Taub et al., *The \$650 Million Man*, FIN. WORLD, July 6, 1993, at 38, 38 (reporting that Rubin was hired to trade for investment bank Bear, Stearns and Co.). In a happy ending to the story, Rubin was paid \$7 million in 1992 and is head of Bear Stearns' collateralized mortgage obligations desk. *Id.* It is possible that the willingness to take on big risks, even destructive ones, may counter-intuitively enhance reputation in the industry. But see Terence Roth, *Ex-Metallgesellschaft Chief Vows a Fight Amid Growing Fallout from Debacle*, WALL ST. J., Mar. 23, 1994, at A10 (discussing CEO who presided over enormous trading losses as "unemployable" and social pariah).

417. See Breedon, *supra* note 385, at A14 (blaming ABN-AMRO fraud on lack of independent individuals validating trading desk's pricing assumptions).

418. See *Industry Standard Sought for Valuing Options*, EUROMONEY, May 1993, at 48, 48 ("One obvious lesson of the affair is not to rely on the options traders to provide variables such as volatility rates . . ."). This was accomplished by falsifying options tickets to reflect higher income from premiums and overvaluing options positions by roughly \$70 million. *Id.*

Co. inserted fictitious trades into the computer.⁴¹⁹ The trader was given revenue-based compensation of \$9 million for 1993,⁴²⁰ after his phantom trades showed profits of \$350 million.⁴²¹ The trader was able to avoid detection by manipulating the computer system.⁴²² The same month that Kidder discovered this fraud, two other traders were fired for unrelated reasons. In the first, a trader was dismissed for concealing losses by manipulating the valuations of a swap.⁴²³ In the second, a bond-derivatives vice president was dismissed after it was discovered that he was simultaneously working for a rival trading company.⁴²⁴ Viewing these trading frauds in conjunction with the one committed at ABN-AMRO, it would appear that derivatives dealers and significant end-users cannot afford the absence of independent risk management.

One criticism of this independent risk management proposal would be the difficulty of locating competent personnel for the job.⁴²⁵ Clearly, a high degree of intellectual firepower is required to comprehend the risk complexity.⁴²⁶ The incredible revenue-based compensation for trading-related activity has led to a steady migration of academics to Wall Street trading floors;⁴²⁷ to lure "rocket scientists" to independent risk management departments would require extraordinarily high compensation.

419. See Fromson, *supra* note 118, at H4 (explaining that trader pretended to purchase "strips" where interest and principal of bond are split into two discrete products).

420. Fromson, *supra* note 118, at H4.

421. Fromson, *supra* note 118, at H4.

422. Fromson, *supra* note 118, at H4 (reporting that trader avoided detection until recently by continuously leaving fake trades open on computer). Had the trades closed, the computer would have detected the falsification.

423. Fromson, *supra* note 118, at H4.

424. See Michael Siconolfi, *Kidder Peabody Fired Bond Aide on Ties to Rival*, WALL ST. J., Apr. 21, 1994, at A3 (describing derivatives trading executive dismissal because of work for rival). While an independent risk manager would be unlikely to uncover this particular fraud, it is illustrative of the fact, stated previously, that incentives of personal profit may outweigh market incentives to behave prudently and ethically. See *supra* note 416 and accompanying text (stating that agents often have incentives to behave in manner opposite to their principal's best interests).

425. See Mullins, *supra* note 40, at 8 (questioning how risk managers that do not share in benefits of risk taking can "be compensated adequately to avoid migration of the best personnel to risk-taking functions"). The difficulty in obtaining top quality personnel is analogous to the one faced by regulators attempting to understand derivatives' risks. See *supra* note 397 (describing gross disparity between trader compensation and governmental compensation).

426. See *Salomon Hires Klotz to Fill New Position in Derivatives Area*, *supra* note 412, at B6 (describing importance of mathematical expertise in understanding "increasingly arcane" risks presented by derivatives).

427. See Jeffrey M. Laderman, *Fisher Black is Practicing What He Teaches*, BUS. WK., Aug. 6, 1984, at 75, 75 (describing how Wall Street investment bank Goldman Sachs lured noted academic Fischer Black away from academia to trading department); Louis Uchitelle, *A Bidding War For Professors Who Know Wall Street Ways*, N.Y. TIMES, Aug. 1, 1989, at A1 (reporting that Wall Street recruits finance professors to carry out complex trading strategies and noting that base pay is low but "bonuses and profit sharing can swell this compensation substantially").

The solution is to offer independent risk managers a salary comparable to individuals who are compensated with revenue-based bonuses and profit-sharing.⁴²⁸ Wall Street firms may incorrectly view this increased compensation as unnecessary cost. The alternative is a knowledge gap between rocket scientist traders and relatively unsophisticated independent risk managers. This could lead to exploitation of insufficient management knowledge by traders, as seen in both the ABN-AMRO and Kidder Peabody cases.⁴²⁹ Consequently, large losses could accrue, increasing Congress' desire to legislate solutions to systemic risk. In a cost/benefit analysis, highly compensated independent risk managers are significantly less expensive than market losses and congressional legislation.⁴³⁰

b. Quantitative backgrounds

The Bank for International Settlements has suggested that due to the complexity of risks presented by the derivatives markets, firms that wish to maintain profits without sacrificing prudence must employ "highly skilled individuals."⁴³¹ It is axiomatic that these "highly skilled individuals" must exist not only on the trading floor and risk management department, but also at the top levels of firm management.⁴³² Yet senior management and boards of directors often lack the requisite quantitative skills necessary to understand the risks

428. See OCC Banking Circular 277, *supra* note 77, at 18-19 (recommending that senior management "recognize the need for, and devote appropriate resources to, employing knowledgeable and experienced personnel in the operations area"). The Banking Circular suggests implementing this policy with "appropriate hiring practices and compensation plans." *Id.* at 19.

429. See also Hu, *Misunderstood Derivatives*, *supra* note 2, at 1457 (citing BIS RECENT DEVELOPMENTS REPORT, *supra* note 214, at 18 ("Management ignorance could be exploited by traders wishing to hide latent losses in positions they carried.")).

430. See, e.g., *supra* notes 385-94 and accompanying text (describing loss of US Eurobond business to London following onerous regulation); *supra* notes 240-53 (relating losses that have occurred because of inadequate risk management systems). An analogous situation is the increase in compensation of compliance personnel at securities firms. To attract top quality employees, salaries for Wall Street compliance personnel increased roughly 40% between 1989 and 1993. See Cheryl Beth Strauss, *Out of the Shadows*, INVESTMENT DEALERS DIG., Feb. 1, 1993 (asserting that "[s]alaries come cheaper than settlement fees.").

431. BIS RECENT DEVELOPMENTS REPORT, *supra* note 214, at 2 (stating that "the complexity of risks incurred in OTC derivatives markets means that firms that want to participate profitably and safely in them must have at their disposal . . . highly skilled individuals").

432. The philosophy of Ayn Rand teaches that hiring one's intellectual superior and allowing that individual free reign without oversight leads ultimately to destruction. See AYN RAND, ATLAS SHRUGGED 388 (1957) ("The man who attempts to purchase the brains of his superiors to serve him, with his money replacing his judgment, ends up by becoming the victim of his inferiors.") This admonition is relevant to hiring rocket scientists, paying for their brains, and turning them loose in one's organization with the hope that they know what they are doing.

employees are incurring.⁴³³ This failing of corporate governance has led to "lax oversight,"⁴³⁴ and significant losses.⁴³⁵

To rectify the lack of quantitative skills on boards of directors, this Comment advocates that dealers and significant end-users of the OTC derivatives markets maintain at least three members on the board of directors with significant quantitative skills. This number is arbitrarily chosen, intended to provide a variety of quantitative perspectives without unduly altering the composition of the board. The degree of quantitative skills required by the term "significant" is flexible, but should correspond to the level of complexity inherent to the institution's activity in the OTC derivatives markets.

The voluntary enactment of this flexible standard by dealers and significant end-users will significantly reduce the likelihood that corporate governance failures, as described above, will recur. This, in turn, will lessen the impetus for procrustean legislation.

3. Disclosure

There are few requirements of public disclosure for users and dealers of derivative instruments. For example, neither the credit risk nor the market risk of derivatives positions designated as "hedges" must appear in the main text of most financial institutions's financial statements.⁴³⁶ Instead, the Financial Accounting Standards Board's (FASB) Statement No. 105 merely requires that disclosure of financial instruments with off-balance sheet credit risk be disclosed in a footnote of the financial statement.⁴³⁷

As a result of limited disclosure requirements, it is difficult for regulators, investors, and participants themselves to obtain meaning-

433. See Hu, *Misunderstood Derivatives*, *supra* note 2, at 1493 (explaining that "[m]any senior bank managers do not have a quantitative background").

434. See Schares, *supra* note 126, at 48 (noting that "[M]etallgesellschaft's collapse highlights a devastating weakness in . . . corporate governance.").

435. See Loomis, *supra* note 49, at 52 (noting CEO of Metallgesellschaft's comment following trading debacle: "I always informed the supervisory board [of the risks incurred] to the best of my knowledge . . ."). Yet the "hedges" Metallgesellschaft were attempting were so poorly conceived, *supra* note 126, board members with quantitative backgrounds would arguably have noticed the hedging mismatch and taken steps to reduce the severity of the disaster.

436. See J. Carter Beese, Jr., Testimony Before the Committee on Banking, Finance and Urban Affairs, United States House of Representatives, Concerning the Regulation of Derivatives Activities 11 (Oct. 28, 1993) ("At the present time, Generally Accepted Accounting Principles . . . do not comprehensively address the manner in which public companies must account for and disclose their derivative activity.").

437. FINANCIAL ACCOUNTING STANDARDS BOARD, DISCLOSURES OF INFORMATION ABOUT FINANCIAL INSTRUMENTS WITH OFF-BALANCE-SHEET RISK AND FINANCIAL INSTRUMENTS WITH CONCENTRATIONS OF CREDIT RISK (Statement of Financial Accounting Standards No. 105) 4 (1990). Beyond a general disclosure discussion, specific concepts regarding accounting for derivative instruments are outside the scope of this comment.

ful information regarding the nature and magnitude of OTC derivative use.⁴³⁸ The Group of Thirty has responded to this inadequacy by recommending voluntary disclosure of both qualitative and quantitative information regarding derivatives exposure and policy.⁴³⁹ This disclosure would include "sufficient information"⁴⁴⁰ about whether transactions are undertaken for the purpose of hedging, risk management, or speculation. Additionally, disclosure would be required regarding which transactions are undertaken, the size of the transactions, the magnitude of risk involved, and which accounting methods are used to value the transactions.⁴⁴¹

Banks have been reticent about disclosing their derivatives activity.⁴⁴² As a result, regulators have increased disclosure scrutiny,⁴⁴³ and stock prices have tumbled.⁴⁴⁴ In a financial crisis, lack of balance sheet transparency might cause institutions to refuse to transact business with firms rumored to be experiencing financial difficulty.⁴⁴⁵ By implementing the disclosure recommendation of the Group of Thirty, banks may see their stock prices improve to reflect record trading revenues.⁴⁴⁶

438. See GROUP OF THIRTY REPORT, *supra* note 4, at 21 (reporting inadequate disclosure of counterparty credit risk to be of concern to "about three-fifths of dealers" who responded to survey); Lipin, *supra* note 86, at B3 (noting investor discomfort over fact that most banks do not disclose how much revenue is attributed to brokering customer transactions versus speculative trading); Breeden, *supra* note 50, at 9 (discussing difficulty for regulators to distinguish hedging activity from speculation).

439. See GROUP OF THIRTY REPORT, *supra* note 4, at 21 (encouraging adoption of disclosure recommendations due to public concern).

440. GROUP OF THIRTY REPORT, *supra* note 4, at 21.

441. See GROUP OF THIRTY REPORT, *supra* note 4, at 21 (asserting that "[f]inancial statements of dealers and end-users should contain sufficient information about their use of derivatives to provide an understanding of the purposes for which transactions are undertaken, the extent of the transactions, the degree of risk involved, and how the transactions have been accounted for").

442. See Lipin, *supra* note 86, at B3 (describing banking industry's secrecy regarding disclosure of trading revenues).

443. See Becky Gaylord, *FASB to Seek More Disclosure on Derivatives*, WALL ST. J., Mar. 23, 1994, at C23 (discussing current FASB proposal that would enhance disclosure requirements for holdings of derivatives instruments); Lynn Stevens Hume, *FASB Standards to Seek Improved Disclosure on Derivatives*, BOND BUYER, Mar. 2, 1994, at 1, 1 (noting broker-dealers and other firms will have to begin disclosing differentiation between derivatives used for trading, risk management, or hedging).

444. See *supra* note 88-91 and accompanying text (blaming lack of disclosure for decline in bank stocks).

445. See BIS RECENT DEVELOPMENTS REPORT, *supra* note 214, at 34 (explaining how financial straits at one firm could render it unable to transact business in market crisis because of lack of risk disclosure); *supra* note 154-58 (describing how illiquidity of market participant could disenable it from transacting hedges when most necessary).

446. See Lipin, *supra* note 86, at B3 (quoting a bank consulting firm executive stating: "[B]anks who disclose more than the average tend to get the benefit of the doubt on their stock price."); Robert J. Schwartz, *Adequacy of Regulatory Controls on OTC Market Activity: Transparency, Reporting and Disclosure*, Remarks at Commodity Futures Trading Commission Symposium on OTC Derivative Markets and Their Regulation 4 (Oct. 27, 1993) (on file with *The American*

Many banks have rejected calls for increased disclosure, using a "we know what we are doing"⁴⁴⁷ approach. One common banking argument is that the credit and market risks presented by derivatives are "no different than the risks that financial intermediaries take in all their other lines of business."⁴⁴⁸ Implicit in this argument is the assertion that banks are good at managing this kind of risk. The persuasiveness of this argument must be examined in light of the banking industry's past success in their analogous "other lines of business." In fact, claims of credit and market expertise are belied by the industry's loans to lesser developed countries,⁴⁴⁹ funding of the 1980s commercial real estate boom, and purchase of highly leveraged transaction debt.⁴⁵⁰

This Comment does not suggest that banks are imprudently managing their derivatives exposures. Because of past market and credit risk mismanagement, however, it would benefit banks and all other participants in the OTC derivatives markets to voluntarily disclose the extent and nature of their participation. This would reduce investor fears and lead to improved equity valuations for shareholders, fulfilling one CEO's view that "the single most important measure of a CEO is his company's stock price."⁴⁵¹ It would have the secondary purpose of narrowing the knowledge gap between regulators and the OTC derivatives industry,⁴⁵² averting unnecessary legislation that could push the industry offshore.

University Law Review) ("Institutions that do not efficiently disclose information will find it more difficult to attract investors and counterparties.").

447. See Hansell & Muehring, *supra* note 53, at 50 (describing "condescending attitude" of bankers).

448. See Claudia Cummins, *Swaps Industry is Self-Regulating, Chairman Says*, AM. BANKER, Oct. 28, 1993, at 3, 3 (quoting Joseph P. Bauman, Citibank's head of business development for global derivatives and chairman of ISDA). See also Mullins, *supra* note 40, at 4 (stating that risks are "no different than the types of risk associated with traditional instruments—loans, securities, and deposits.").

449. See, e.g., Alfred J. Puchala, Jr., *Securitizing Third World Debt*, 1989 COLUM. BUS. L. REV. 137, 137 (1989) (noting that "[W]ith keen competition to find profitable projects and the pressure to earn healthy returns on their deposit bases, many of the major money center banks imprudently exposed themselves in Latin America and elsewhere, filling their portfolios with underperforming or defaulting loans.").

450. See Arthur E. Wilmarth, Jr., *Too Big to Fail, Too Few to Serve? The Potential Risks of Nationwide Banks*, 77 IOWA L. REV. 957, 965 (1992) (noting that attempt by banking industry to improve profits by "making high-risk loans to less developed countries (LDCs), corporations involved in highly leveraged transactions (HLTs) and real estate developers" resulted in large losses).

451. See Loomis, *supra* note 397, at 77 (quoting Bankers Trust Chairman Charles S. Sanford, Jr. on importance of stock valuation).

452. See Hu, *Misunderstood Derivatives*, *supra* note 2, at 1495 (suggesting that because regulators know far less about derivatives than bankers, regulators could "solve the informational problem by banning derivatives").

CONCLUSION

The OTC derivatives markets stand upon a precipice, with the threat of ill-informed legislators on one side and the possibility of a systemic breakdown on the other. The evolution of the United States bankruptcy regime has resulted in an affirmative step away from the ledge. But this positive step is not enough. International imposition of bankruptcy regimes that explicitly recognize close-out netting, increased disclosure, independent risk managers, and quantitatively adept boards of directors are necessary to avert both draconian legislation and the systemic breakdown it seeks to prevent.

As President John F. Kennedy once remarked, "the time to fix the roof is while the sun is shining."⁴⁵³ The sun has generally shone on the OTC derivatives industry. Now is the time for the industry to take steps to avert the impending deluge. The alternative is to remain on the precipice and await the storm.

453. GREAT QUOTES FROM GREAT LEADERS 85 (Peggy Anderson ed., 1990).