



Derivatives: State of the Debate

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The dramatic growth of derivatives activity coupled with the recent spate of widely publicized derivatives-related losses has triggered public debate about the benefits, risks, and proper regulation of these financial instruments. Some legislators, regulators, and members of the press express concern that this now-global financial activity might pose unique and excessive risks to individual firms, specific markets, and the overall economy.

The debate, moreover, has been fueled by a seemingly endless supply of new studies of derivatives activity. In the past three years alone, more than a dozen major derivatives studies have been completed. These include those sponsored by the private sector and a global array of public sector efforts drafted by both regulators and legislative committees. The impact of derivatives on everything from the world economy to the cost of playgrounds has been covered.

This rhetoric involves more than reports. There are also calls for legislative action. At the federal level, for example, proposals targeted at derivatives have ranged from statutory endorsements of the status quo at one extreme to major expansions of federal regulation at the other. Despite the heated nature of the public debate, the regulatory response to those concerns, for the most part, has been measured and prudent. This involves heightened oversight, with a focus on improved risk management practices, a greater understanding of the risks of derivatives, and better coordination among regulators. At the state level the legislative response to specific derivatives-related losses has been less tempered. Numerous proposals have been introduced to ban or severely limit the use of derivatives by governmental entities, such as municipalities and state pension plans. Some of these proposals have passed, some have failed, and others have stalled for further study.

A proper response to public concerns about derivatives should be solidly grounded in the best available information on the likely benefits and risks of both derivatives and alternative regulatory proposals. Therein lies the purpose of this report on a "study of the studies" of derivatives activity. The Center for Study of Futures and Options Markets at Virginia Tech surveyed and abstracted over one hundred studies of, and articles on, derivatives.* The review of this extensive literature sought answers to the following questions:

- What do the studies identify as the benefits of derivatives?
- What do the studies identify as the risks of derivatives?
- Do the studies recommend banning or restricting derivatives use?

The results of this review are summarized, along with a sampling of the range of views on these key issues. In short:

- The growth in derivatives activity over the past twenty years has yielded substantial benefits to public and private institutions using these financial tools and to the U.S. economy.
- The risks of derivatives are the same types of risk that public and private institutions face in their traditional businesses and generally have not exposed them to new risk sources.
- Not a single study reviewed called for banning or severely restricting the use of derivatives.

BENEFITS OF DERIVATIVES FOR FIRMS, MARKETS AND THE ECONOMY

The recent studies of derivatives activity have led to a broad consensus, both in the private and public sectors, that derivatives provide numerous and substantial benefits to end users.

Derivatives provide a low-cost, effective method for end users to hedge and manage their exposures to interest rates, commodity prices, or exchange rates. Interest rate futures and swaps, for example, help banks of all sizes better manage the repricing mismatches in funding long-term assets, such as mortgages, with short-term liabilities, such as certificates of deposit.

Agricultural futures and options help farmers and processors hedge against commodity price risk. Similarly, airlines and oil refiners can use commodity derivatives to hedge their exposures to fluctuating fuel and oil prices. Finally, multinational corporations can hedge against currency risk using foreign exchange forwards, futures, or options.

Derivatives also allow corporations and institutional investors to more effectively manage their portfolios of assets and liabilities. An equity fund, for example, can reduce its exposure to the stock market quickly and at a relatively low cost without selling off part of its equity assets by using stock index futures or index options. Corporate borrowers and governmental entities can effectively manage their liability structure - the ratio of fixed- to floating-rate debt and the currency composition of that debt - using interest rate and currency futures and swaps.

Corporations, governmental entities, and financial institutions also benefit from derivatives through lower funding costs and more diversified funding sources. Currency and interest rate derivatives provide the ability to borrow in the cheapest capital market, domestic or foreign, without regard to the currency in which the debt is denominated or the form in which interest is paid. Derivatives can convert the foreign borrowing into a synthetic domestic currency financing with either fixed- or floating-rate interest.

Institutional investors and portfolio managers may enhance asset yields, diversify their portfolios, and protect the value of illiquid securities by using derivatives. For example, in cases of highly illiquid securities, derivatives can be used to hedge or neutralize undesirable features, thereby creating a synthetic instrument with less downside exposure.

The studies also find that participating in derivatives activity benefits derivatives dealers by increasing both the average credit quality and the diversity of credit risk to which they are exposed. This activity provides a profitable and stable earnings stream that helps to build capital and diversify sources of earnings. Finally, as banking supervisors have rightly emphasized in their reports, improvements in risk management techniques that were first applied to derivatives are now spilling over into and improving the management of risks in other, more traditional businesses - banks taking deposits and making loans, securities firms purchasing and financing securities positions, or corporations managing their treasury functions. These improvements in risk management, in turn, enhance the safety and profitability of these institutions.

Taken as a whole, the studies provide support for the view that the growth in derivatives activities over the past twenty years has yielded substantial benefits to the U.S. economy.

By facilitating the access of U.S. corporations to international capital markets and enabling them to lower their cost of funds and diversify their funding sources, derivatives improve the position of U.S. firms in an expanding, competitive, global economy.

By providing U.S. firms with new and more effective tools to manage their inherent risk exposures, derivatives reduce the likelihood that these firms will face financial distress, helping to stabilize employment. Moreover, with these incidental risk exposures under control, management can focus on its core business strategy — improving the quality and lowering the cost of its product.

By providing investors and issuers with a wider array of tools for managing risks and raising capital, derivatives improve the allocation of credit and the sharing of risk in the global economy, lowering the cost of capital formation and stimulating economic growth.

Now that world markets for trade and finance have become more integrated, derivatives have strengthened these important linkages between global markets, increasing market liquidity and efficiency and facilitating the flow of trade and finance.

RISKS OF DERIVATIVES TO FIRMS, MARKETS, AND THE ECONOMY

The fundamental risks of derivatives are the same types of risks - credit, market, operational, and legal risk - that many financial institutions and firms face in their traditional businesses. On this point, there is widespread agreement.

Credit risk is the risk that a loss will be incurred because a counterparty fails to make payments as due. In the event of the default, the loss on a derivatives contract is the cost of replacing the contract with a new counterparty. Concern has been expressed that financial institutions (especially dealers) may have used derivatives to take on an excessive level of credit risk that is poorly managed. The following evidence presented in these studies undercuts this conclusion.

First, the accumulation of credit risk from derivatives activities can be controlled by the traditional credit risk management function of dealers. This can be supplemented by the more precise identification and measurement made possible by derivatives technology. The technology can evaluate the creditworthiness of counterparties, set risk limits to avoid excessive concentrations, regularly measuring exposures, and monitoring them against risk limits. Second, the credit risk that banks take on from derivatives is a relatively small percentage of their overall credit exposure from other sources, and the credit quality of their counterparties is generally quite high. Actual credit losses have been low, both absolutely and relatively.

In addition, much of the growth in derivatives activity has occurred in exchange-traded products where the direct credit exposures of trading counterparties are eliminated through daily settlement systems, backed up by risk-based performance bonds.

Market risk is the risk that the value of a position in a contract, financial instrument, asset, or portfolio will decline when market conditions change. Concern has been expressed that derivatives expose firms to new market risks, while increasing the overall level of exposures.

The studies reveal that derivatives generally have not exposed institutions to fundamentally new sources of market risk. Banks, for example, have long been exposed to these same market risks.

- Interest rate exposure is inherent in the mismatch of assets and liabilities.
- Currency exposure is inherent in foreign exchange trading and in foreign-currency-denominated borrowing or lending.
- Commodity price exposure is inherent in oil field production payout loans.
- Equity exposure is inherent in margin loans.

A fundamental principle of finance is that the market risks of any financial activity, including derivatives activity, must be evaluated on the basis of its effect on the net exposure of an overall portfolio. While large in some gross

sense, a dealer's derivatives portfolio contains many positions with offsetting market exposures. These balanced positions leave a much smaller residual market risk to be managed.

Similarly, corporations use derivatives as part of other activities, such as a debt issuance, and usually manage these activities as related positions. The market risk of the combined position is quite minimal.

Finally, as these studies emphasize, market risk can be effectively managed through frequent marking-to-market of portfolios, coupled with the identification and measurement of market risk, the setting of risk limits, and monitoring of positions against limits. These same sound principles and practices can be, and are, applied to other activities.

A risk that arises in all businesses is operational risk - the risk that losses will be incurred as a result of inadequate systems and control, inadequate disaster or contingency planning, human error, or management failure. Concern has been expressed, however, that participants in derivatives activity have not implemented the costly systems and techniques that are necessary for effectively controlling risk.

While no aspect of operational risk is unique to derivatives, all the studies addressing this issue agree that it is important for institutions actively engaged in derivatives activities to have adequate oversight of well-trained and knowledgeable staff by informed and involved senior management. There is a complete consensus, both public and private, on this issue.

Legal risk is the risk of loss because a contract cannot be enforced or because the contract terms fail to achieve the intended goals of the contracting parties. This risk, of course, is as old as contracting itself. Because of the relative newness of derivatives transactions, however, their treatment under existing laws and regulations is often ambiguous. This legal uncertainty can result in significant unexpected losses.

Users of derivatives, like other firms, attempt to manage and minimize legal risks. In certain cases, however, public action, regulatory or legislative, may be necessary to reduce legal uncertainty.

Global markets for trade and finance have become increasingly integrated and accessible. Derivatives have both benefitted from and contributed to this development. In these circumstances, however, some observers fear that derivatives make it possible for shocks in one part of the global financial system to be transmitted farther and faster than before, being reinforced rather than dampened. Concern also has been expressed that derivatives activity may exacerbate market moves through positive feedback trading. This claim has been made in particular to the dynamic hedging of large option positions.

Fortunately, extensive academic literature addresses the question of whether the dynamic hedging of options positions increases market volatility. These studies examine the effects of option listing on the volatility of the underlying stock

price and are particularly relevant because dynamic hedging of option positions by market makers is an important factor linking the markets for the option and the underlying stock. The findings are uniform. Virtually every study concludes that volatility is reduced with the introduction of options trading. These studies are quite powerful because they span numerous time periods and literally hundreds of option listings.

In related literature, researchers estimate the effect of the introduction of futures trading on the price of the underlying commodity. The range of commodities examined is extensive, from onions to stock index futures. The overwhelming majority of studies find that the introduction of futures trading in stock indices does not result in increased volatility of the underlying stocks. Where an increase is found, moreover, it is usually for short-term volatility. Studies examining other commodities find that the introduction of derivatives trading tends to either decrease volatility or result in no change.

More directly, this extensive body of scientific research provides little support for concerns that derivatives activity increases market volatility, exacerbates market moves, or poses a significant threat of systemic disruption.

WHAT SHOULD BE DONE ABOUT DERIVATIVES?

The studies reviewed here have not been purely academic exercises. They have contributed to and been supplemented by concrete actions from both the private and public sectors. The private sector made notable contributions through their reviews of industry practice and articulation of good risk management principles. The public sector made substantial contributions to the understanding and management of derivatives risk through detailed guidance issued on sound risk management practices and enhanced oversight procedures.

The studies also document that all major U.S. dealers - including banks, securities firms, and insurance companies - and many major end users have dramatically enhanced their systems for controlling the risks of derivatives. In addition, futures and options exchanges and clearinghouses and intermediaries trading on these exchanges around the world have recently reviewed their risk management practices. Finally, senior management and boards of directors at major U.S. corporations have been put on notice that they are responsible for overseeing their firms' derivatives activities.

Despite some differences in policy recommendations, all the studies are in agreement on two final points. First, the most important line of defense for ensuring that the risks of derivatives are limited is a "conscious and disciplined" approach to risk management based on sound principles and practices. These sound approaches exist and have been well documented in the studies reviewed. Second, derivatives provide important benefits to individual firms and the overall economy and, hence, regulators must be careful not to unduly limit their use. Simply put, not a single study called for banning or severely restricting the use of derivatives.

VIEWS of END-USERS

"McDonald's Corporation has been using derivatives for over ten years, and we find them invaluable for managing our interest rate and foreign currency risks. Even more important, banks and other lenders have found ways to offer the benefits of these complex instruments to our 2,600 independent franchise holders in the U.S."

Carleton O. Pearl, Treasurer

McDonald's Corporation, 1993

Pearl, Carleton O. "Letter to Congressman Henry B. Gonzalez," McDonald's Corp., November 29, 1993.

"Mobil is committed to active debt management using derivatives to reduce risk and to achieve the lowest after-tax financing costs over time. ...Most [commentators] have missed the fact that derivatives when used properly reduce risk. "

Elizabeth Glaeser, Treasurer

Mobil Corporation, 1995

Economist Intelligence Unit. *Strategic Derivatives: Successful Corporate Practices for Today's Global Marketplace*, New York, 1995, p. 94.

"The agency has sizeable financing needs and manages a large investment portfolio; therefore, interest rate risk is a major concern. ... [T]he Port Authority sees ... derivatives transactions, which provide opportunities to achieve low financing costs that would be otherwise unattainable, playing an increasingly important role in its financial structure."

John Hauptert, Treasurer

Port Authority of New York, 1992

Hauptert, John. "Using Interest Rate Swaps as Part of an Overall Financing and Investment Strategy." *Government Finance Review*, October 1992.

"It is often not only simpler but cheaper and more liquid to utilize an equity index, for example, as opposed to purchasing the individual stocks of a country or region for managing the company's pension fund."

Stephen Crompton, Treasurer

SmithKline Beecham, 1995

Economist Intelligence Unit. *Strategic Derivatives: Successful Corporate Practices for Today's Global Marketplace*. New York, 1995, p. 65.

"Derivatives allow municipalities to reduce the overall cost of borrowing, lock in forward rates, reduce interest rate risk, adjust the ratio of variable-and fixed-rate debt or match assets and liabilities."

Philip N. Shapiro, Chief Financial Officer

Massachusetts Water Resources Authority, 1992

Shapiro, Philip N. and T. Spencer Wright. "An Issuer's Perspective on Interest Rate Swaps."

Government Finance Review, October 1992.

"On the funding side, Fannie Mae uses a variety of risk management derivative instruments to reduce interest rate risk on its mortgage portfolio and to reduce its debt costs, both of which help lower mortgage rates for American homeowners."

James Johnson

Federal National Mortgage Association, 1993

Johnson, James. "Letter to Congressman Henry B. Gonzalez," Federal National Mortgage Association, December 9, 1993.

"If appropriate, we structure our hedges so we can benefit from upside potential. Generally, however, our goal is to protect ourselves from adverse movements in currencies, interest rates and commodity prices, providing budget certainty. "

David Cromwell, Treasurer

British Post Office, 1993

Cromwell, David. *Derivatives Week*, November 1, 1993.

"Our experience at First Union in the use of derivatives is that these new instruments are more efficient tools and have several significant advantages over the more conventional cash alternatives, including flexibility of structure, capital usage, liquidity, and credit exposure. "

Edward E. Crutchfield, Jr., Chairman & Chief Executive Officer

First Union Corporation, 1994

Crutchfield, Edward E., Jr. "Forward," *Banking Off the Balance Sheet*, BAI and McKinsey and Company, Inc., 1994.

VIEWS OF REGULATORS AND ACADEMICS

"Derivatives have facilitated the financing of investment in physical assets. "

William J. McDonough, President

Federal Reserve Bank of New York, 1993

McDonough, William J. "A Regulatory Perspective on Derivatives," *Global Derivatives: Public Sector Responses*, Occasional Papers, No. 44, The Group of Thirty, Washington, D.C., 1993, pp. 11-19.

"It is important to acknowledge the benefits that derivative products provide as a risk management tool for both financial and non-financial firms. ... [T]he prudent use of derivatives helps market participants guard against market volatility, thus providing a more stable environment for job creation. "

James A. Leach, Member

U.S. House of Representatives, 1993

Leach, James A. "Statement on Derivatives," *The Group of Thirty Symposium*, The Federal Reserve Board, September 27, 1993.

"Derivatives serve an important function in the global financial marketplace, providing end-users with opportunities to better manage financial risks associated with their business transactions. The rapid growth and increasing complexity of derivatives reflect both the increased demand from end-users for better ways to manage their financial risks and the innovative capacity of the financial services industry to respond to market demands."

U.S. General Accounting Office, 1994

United States General Accounting Office. *Financial Derivatives: Actions Needed to Protect the Financial System*, Washington, D.C., May 18, 1994.

"But I believe the most important benefits of derivatives are usually overlooked. The complexity of derivatives activities, along with the intense scrutiny these activities have attracted, are forcing a revolution in risk management practices. "

Susan M. Phillips, Governor

Federal Reserve Bank of New York, 1994

Phillips, Susan M. "Derivatives and Risk Management: Challenges and Opportunities," *Conference on Financial Markets*, Federal Reserve Bank of Atlanta, Coconut Grove, Florida, February 25, 1994.

"The dramatic reductions in transactions costs achieved by (derivative) markets have made it possible for business firms to hedge against the uncertainties of currency exchange rates, interest rates, and basic commodity prices far more quickly and cheaply than was possible before."

Robert C. Merton, Professor

Harvard University, 1992

Merton, Robert C. "Financial Innovation and Economic Performance." *Journal of Applied Corporate Finance*, Vol. 4, No. 4, Winter 1992.

"Efficient risk-sharing is what much of the futures and options revolution has been all about. "

Merton H. Miller, Nobel Laureate

University of Chicago, 1992

Miller, Merton H. "Financial Innovation: Achievements and Prospects." *Journal of Applied Corporate Finance*, Vol. 4, No. 4, Winter 1992.

"Derivatives offer institutional investors a uniquely efficient way to manage risks and enhance returns. ... [A]ny investment strategy that allows pension funds and other institutional investors to increase returns, reduce risks, and cut costs can generate enormous benefits to retirees, individual investors in mutual

funds, and holders of insurance policies. "

S. Craig Pirrong, Professor
University of Michigan, 1994

Pirrong, S. Craig. "Regulation, Futures Trading and Institutional Investors." *The American Enterprise*, Vol. 5, January/February 1994.

"Derivatives serve a highly useful risk-management role for both financial and non-financial firms. "

Financial Economists Roundtable, 1994

Financial Economists Roundtable. "Statement on Derivatives Markets and Financial Risk," *Journal of Applied Corporate Finance*, Vol. 7, No. 5, Fall 1994.

"The current debate over the corporate use of derivatives is misplaced and needs to be put back on track by focusing on the strategic opportunities afforded by derivatives. "

Peter Tufano, Professor
Harvard Business School, 1995

Harvard Business Review. "Using Derivatives-What Senior Managers Must Know." *Harvard Business Review*, January/February 1995.

VIEWS OF REGULATORS

"Strong internal control systems; independent, knowledgeable audit committees; and public reporting on internal controls are critical to firms engaged in complex derivatives activities and should play an important role in ensuring sound financial operations and protecting shareholder interests of these firms. "

U. S. General Accounting Office, 1994

United States General Accounting Office. *Financial Derivatives: Actions Needed to Protect the Financial System*, Washington, D.C., May 18, 1994.

"To put it simply and directly, if the bosses do not or cannot understand both the risks and rewards in their products, their firm should not be in the business "

William J. McDonough, President
Federal Reserve Bank of New York, 1993

McDonough, William J. "A Regulatory Perspective on Derivatives," *Global Derivatives: Public Sector Responses*, Occasional Papers, No. 44, The Group of Thirty, Washington, D.C., 1993, pp. 11-19.

"While, linked markets can act as a safety valve, [t]here are some circumstances in which close linkages can be a source of concern. This would be the case if, as price movements or uncertainties are transmitted from one market to another, they are reinforced rather than dampened."

Bank of International Settlement, 1992

Bank of International Settlement. *Recent Developments in International Interbank Relations*, (The "Promisel Report"), Basle, October 1992.

"The use of such dynamic hedging methods can generate liquidity problems [since they] can trigger an avalanche of sales into a relatively illiquid market for the underlying security, thereby collapsing the price or causing a breakdown in trading. "

International Monetary Fund, 1993

International Monetary Fund. "The Growing Involvement of Banks in Derivative Finance — A Challenge for Financial Policy," *International Capital Markets, Part II - Systemic Issues in International Finance*, August 1993.

"The notional value of a derivative contract is not a useful measure of credit exposure. That exposure generally amounts to only a small fraction, say two to three percent, of notional value. "

U.S. Banking Supervisors, 1993

Board of Governors of the Federal Reserve System, Federal Deposit Insurance Corporation and Office of Comptroller of the Currency. *Derivative Product Activities of Commercial Banks: Joint Study Conducted in Response to Questions Posed by Senator Riegle on Derivative Products*, Washington, D.C., January 27, 1993.

"Gross credit risk for 14 major U.S. financial institutions that responded to a GAO survey was \$114 billion, or 1.8 percent of their \$6.5 trillion notional amount, as of year-end 1992. "

U. S. General Accounting Office, 1994

United States General Accounting Office. *Financial Derivatives: Actions Needed to Protect the Financial System*, Washington D.C., May 18, 1994.

"There are no fundamentally new or different risks in derivative products, rather ... familiar kinds of risks are presented and combined in novel ways."

Brian Quinn, Director**Bank of England, 1993**

Bank of England. *Derivatives: Report of an Internal Working Group*, April 1993.

"In looking at regulatory issues relating to these products, one must ask whether these products are inherently more risky than traditional products. Is an interest rate swap entered into by a bank inherently more risky than traditional products? "

Richard Breeden, Chairman**Securities and Exchange Commission, 1992**

Breeden, Richard C. "Remarks," March 11, 1992.

While derivatives can be useful investment tools, they also present significant risk if not understood fully and used. ...As with other investment instruments, the amount of risk and the potential for return from a derivative depend on its use and unique characteristics.

Legislative Audit Bureau
State of Wisconsin, 1995

Legislative Audit Bureau. "An Evaluation of Investment Practices of the State of Wisconsin Investment Board," State of Wisconsin, July 1995.

VIEWS OF REGULATORS, ACADEMICS, AND INDUSTRY EXPERTS

"It is unlikely that the underlying markets would have performed as well as they did [during the European currency crisis] without the existence of related derivative markets that enabled currency positions to be managed, albeit with some difficulty in some instruments. "

U. S. Banking Supervisors, 1993

Board of Governors of the Federal Reserve System, Federal Deposit Insurance Corporation and Office of Comptroller of the Currency. *Derivative Product Activities of Commercial Banks: Joint Study Conducted in Response to Questions Posed by Senator Riegle on Derivatives Products*, Washington, D.C., January 27, 1993.

"The explosive growth of derivatives in recent years was the result rather than the cause of volatility in foreign exchanges and in money markets. The only question is whether the development of derivatives has reinforced market volatility. "

Georgios Katiforis, Rapporteur

European Parliament, Subcommittee on Monetary Affairs, 1995

Katiforis, Georgios. *Financial Derivatives: Their Present Role on Capital Markets, Their Advantages and Risks*, (Working Paper) Parliament - Committee on Economic and Monetary Affairs and Industrial Policy, March 1, 1995.

"The greater awareness and understanding of risk and the enhanced methods of managing risks probably have reduced the likelihood of systemic problems, and will continue to do so over time as industry and supervisory practices advance. "

Federal Reserve Board, 1993

Federal Reserve Board. "Response to the Questions Posed by Congressman Leach," October 6, 1993.

"Research suggests that no statistically significant evidence has been published to support the hypothesis that there is a relationship between spot market volatility and the existence of derivative markets. "

Ontario Securities Commission, 1994

Ontario Securities Commission. *Over-the-Counter Derivatives in Ontario: OSC Staff Report*, January 1994.

"All things considered, systemic risk appears to be at a relatively low level as of late 1994. Even if a systemic event should occur, it appears that requisite tools and knowledge for limiting its effects are in place and ready for use. "

Philip F. Bartholomew & Gary W. Whalin

Director & Deputy Director

Office of the Comptroller of the Currency, 1994

Bartholomew, Philip F. And Gay W. Whalen. "Fundamentals of Systemic Risk," *Banking, Financial Markets, and Systemic Risk*, Office of Comptroller of Currency, Washington, D.C., December 2, 1994.

"Derivatives help to manage risk in new ways — an important economic function. Yet the risks involved in derivatives activities are neither new nor unique. These are the same kind of risks found in traditional financial products: market, credit, legal, and operational risks. "

Global Derivatives Study Group

The Group of Thirty, 1993

Global Derivatives Study Group. *Derivatives: Practices and Principles and Appendix I: Working Papers*, The Group of Thirty, July 1993.

"Like the fund's other investments, a fund's derivative investments may entail various types and degrees of risk, depending upon the characteristics of the particular derivative instruments and the fund's portfolio as a whole. "

Investment Company Institute, 1994

Investment Company Institute. *Investments in Derivatives by Registered Investment Companies*, August 1994.

"The widely publicized losses on derivatives have been due to inadequate risk-management systems and poor operations control and supervision. These losses have not threatened the stability and efficiency of financial markets; and, by encouraging the development of better risk-management and operational controls, they have had a salutary effect. "

Financial Economists Roundtable, 1994

Financial Economists Roundtable. "Statement on Derivatives Markets and Financial Risk," *Journal of Applied Corporate Finance*, Vol. 7, No. 5, Fall 1994.

"The Orange County financial collapse and bankruptcy filing resulted from really nothing short of a reckless abuse of public trust. The losses would not have occurred if parties having responsibility to maintain that public trust had

acted in a responsible and sensible manner. "

Board of Advisors, California Senate

Special Committee on Local Government Investments, 1995

Craven, William A. and Lucy Killea. "The Orange County Bankruptcy: Broad Repercussions, New Public Policy," *Report of the Senate Special Committee on Local Government Investments*, California Legislature, August 1995.

VIEWS OF ACADEMICS AND INDUSTRY EXPERTS

"The collapse of Barings PLC was caused in large part by a lack of adequate internal controls over [an] employee's proprietary trading activities, including those conducted in exchange-traded futures and options. The Barings failure did not result in losses to other market participants and, in many respects, the situation underscored the fundamental strength and soundness of the global futures and options regulatory, trading and clearing systems."

Global Task Force on Financial Integrity

Futures Industry Association, 1995

Global Task Force on Financial Integrity. *Financial Integrity Recommendations: for Futures and Options Markets and Market Participants*, Futures Industry Association, June 1995.

"The reason so many holders of derivatives positions took large losses in early 1994 is in most cases exactly the same as the reason that many more investors lost money on ordinary bonds: Interest rates rose very far and very fast.

Stephen Figlewski, Professor

New York University, 1994

Figlewski, Stephen. "How to Lose Money in Derivatives." *The Journal of Derivatives*, Vol. 2, No. 2, Winter 1994.

"Where do managers go from here? The first step - which may be the hardest - is to realize that they cannot ignore risk management. Some managers may be tempted to do so in order to avoid high profile blunders... . [T]his head-in-the-sand approach has costs as well. "

Kenneth Froot, David Scharfstein & Jeremy Stein, Professors

Harvard University & M.I.T, 1994

Froot, Kenneth A., David S. Scharfstein and Jeremy C. Stein. "A Framework for Risk Management." *Journal of Applied Corporate Finance*. Vol. 7, No. 3, Fall 1994.

"Of course speculators were in the market, taking positions on future price changes. [T]he trading process — both hedging and speculation — did not amplify the price volatility associated with the dramatic fundamental developments taking place in the Gulf during the crisis of 1990-91."

Robert J. Weiner, Professor

George Washington University, 1995

Weiner, Robert J. "The Oil Futures Market in the Gulf Crisis." *Derivatives and Systemic Risk*, Federal Reserve Bank of Atlanta, Georgia State University, and Virginia Tech, Washington, D.C., April 20, 1995.

"There is no significant evidence that spot volatilities have increased since the introduction of index futures. "

John Board, Charles Goodhart & Charles Sutcliffe, Professors
London School of Economics & Univ. of Southampton, 1992
Board, John, Charles Goodhart and Charles Sutcliffe. *Inter-Market Volatility Linkages: The London Stock Exchange and London International Financial Futures Exchange*, Securities and Investments Board, June 1992.

"The academic research on the effects of derivatives on market volatility is increasingly consistent in its findings, and particularly voluminous after the 1987 crash. The research strongly indicates that derivatives trading either has no effect on, or reduces, volatility in underlying markets."

The Group of Thirty, 1993
Global Derivatives Study Group. *Derivatives: Practices and Principles and Appendix I: Working Papers*, The Group of Thirty, July 1993.

"The notion that an expansion in the use of OTC derivatives has somehow increased systemic risk, and that additional regulation is needed to reduce this risk, has no obvious factual basis."

Franklin R. Edwards, Professor
Columbia University, 1994
Edwards, Franklin R. "Systemic Risk in OTC Derivatives Markets: Much Ado About Not Too Much," (Working Paper), American Enterprise Institute, Washington, D.C., November 7, 1994.

"Derivatives markets act to reduce systemic risk by spreading the impact of underlying economic shocks among a larger set of investors in a better position to absorb them. "

Ludger Hentschel and Clifford W. Smith, Jr., Professors
University of Rochester, 1995
Hentschel, Ludger and Clifford W. Smith. "Controlling Risks in Derivatives Markets." *The Journal of Financial Engineering*, Vol. 4, No. 2, June 1995.

"Systemic risk at root is about failure of firms and fear of resulting failure of other firms, especially financial firms. The growth of the derivatives market has reduced that risk through widespread cancelling of risk as well as shifting of risk to those most able to manage and bear it. "

Michael R. Darby, Professor and Research Associate
National Bureau of Economic Research, 1994

Darby, Michael R. "Over-the-Counter Derivatives and Systemic Risk to the Global Financial System," (Working Paper No. 4801), National Bureau of Economic Research, Cambridge, MA, July 1994.

"One of the most significant observations (of the report) is the need for fund boards of directors to become more involved in the risk management process."

Ernst & Young LLP, 1995

Ernst & Young LLP. *Derivatives Usage by Investment Funds*, September 1995.

VIEWS OF REGULATORS AND INDUSTRY EXPERTS

"Regulation cannot substitute for effective management."

U. S. Banking Supervisors, 1993

Board of Governors of the Federal Reserve System, Federal Deposit Insurance Corporation and Office of Comptroller of the Currency. *Derivative Product Activities of Commercial Banks: Joint Study Conducted in Response to Questions Posed by Senator Riegle on Derivatives Products*, Washington, D.C., January 27, 1993.

"Policies governing derivatives use should be clearly defined, including the purpose for which these transactions are to be undertaken. Senior management should approve procedures and controls to implement these policies, and management at all levels should enforce them."

Global Derivatives Study Group

The Group of Thirty, 1993

Global Derivatives Study Group. *Derivatives: Practices and Principles and Appendix I: Working Papers*, The Group of Thirty, July 1993.

"Customers should ensure that they understand the risks of their trading activities, the nature of their legal relationships with their brokers/intermediaries and the risks of utilizing their brokers/ intermediaries and of trading on specific exchanges/ clearinghouses. A broker/intermediary engaging in customer and proprietary trading should establish and enforce appropriate policies and procedures to identify customer property and to protect it against risks arising as a result of its proprietary trading activities. "

Global Task Force on Financial Integrity

Futures Industry Association, 1995

Global Task Force on Financial Integrity. *Financial Integrity Recommendations: For Futures and Options Markets and Market Participants*, Futures Industry Association, June 1995.

"In the private sector truly great progress has been, and is being made, in developing the risk management, information and control systems that are so crucial for individual firms and the marketplace more generally. "

E. Gerald Corrigan, Former President
Federal Reserve Bank of New York, 1994
Corrigan, Gerald E. "Remarks," May 10, 1994.

"Market discipline can be a powerful educator, as long as the experience of both the gains and the losses from using derivatives remains with the contracting parties."

Jerry L. Jordan, President
Federal Reserve Bank of Cleveland, 1994
Jordan, Jerry L. "Specialization in Risk Management: Supervision of Derivatives Instruments," *Coping with Financial Fragility: A Global Perspective*, University of Limburg, Maastricht, The Netherlands, September 8, 1994.

"There can be no doubt that each organization's conscious and disciplined attention to understanding, measuring, and controlling risk ... should help ensure that the risks to individual institutions and to markets as a whole is limited and manageable. "

Paul Volcker, Chairman
The Group of Thirty, 1993
Volcker, Paul. "Forward," *Derivatives: Practices and Principles*, The Group of Thirty, July 1993.

"When one assesses this field, I think it is not hyperbole to suggest that the development and growth of financial derivatives constitute one of the most dramatic success stories in modern economic history."

David W. Mullins, Jr. , Vice Chairman
Federal Reserve Board, 1993
Mullins, David W., Jr. "Remarks on the Global Derivatives Study Sponsored by The Group of Thirty," Summer Conference, ISDA, New York, N.Y., July 28, 1993.

ENDNOTES

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