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OTC Derivatives in Retirement Plans

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INTRODUCTION

With the exponential growth in the derivatives markets, and the corresponding acceptance of derivatives as an important portfolio and risk management tool, the trustees of Employee Retirement Income Security Act (“ERISA”) regulated retirement plans, who once debated the prudence of using these complex financial instruments, now routinely authorize plans to make those investments or delegate that authority



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to third-party managers. The growth of derivatives, which are broadly defined as financial instruments that derive their value from changes in the value of another financial instrument, asset, or index to which they are linked, has been particularly strong in the fixed income market where the \$42.58 trillion (notional) credit default market¹ dwarfs the \$9.3 trillion cash bond market.²

Unlike futures and other standardized derivative instruments, which are traded on regulated exchanges with uniform terms, over-the-counter or OTC derivatives transactions are customized transactions, based on a privately negotiated legal contract between two parties, which are entered into an unregulated, sometimes illiquid market, with limited transparent pricing.³ The two parties to OTC derivatives transactions are generally classified as “dealers” and “end-users” based on their purpose for entering into the derivatives transaction. Dealers are generally major brokerage firms and banks that “cater to the needs of end-users by ‘making markets’ in OTC derivatives instruments” and in doing so, “expect to generate income from transaction fees, bid/offer spreads and their own trading positions.” “End-users typically enter into derivatives transactions to achieve specified objectives related to hedging, financing or position-taking on the normal course of their business operations....”⁴

OTC derivatives are widely acknowledged to be a valuable and useful portfolio and risk management tool, and as such, are now employed by retirement plans.⁵ Even the Department of Labor (“DOL”) has acknowledged the utility of derivatives; in a March 21, 1996, letter to the Comptroller of the Currency of the United States, it confirmed that “derivatives may be a useful tool for managing a variety of risks and for broadening investment alternatives in a plan’s portfolio...” and suggested ways for plan fiduciaries to utilize derivatives consistently with their ERISA obligations.⁶

Recent events, however, have been a reminder that the risks in derivatives run in both directions, and sometimes in ways that are difficult for even the most sophisticated users to anticipate. As demonstrated by the recent announcement by the French investment bank Société Générale that it has lost \$7.2 billion as a result of unauthorized derivatives transactions by a rogue trader, the widespread acceptance of derivatives has not diminished their inherent risk nor their potential to cause catastrophic losses.⁷ Less than three weeks after the losses of Société Générale were announced, in a filing with the U.S. Securities and Exchange Commission, the American International Group (“AIG”) reported that its independent auditors, PricewaterhouseCoopers LLC, had identified “a material weakness in its internal control over financial reporting and oversight relating to the fair value valuation of [its subsidiary’s] super senior credit default swap portfolio.”⁸ As a result of this

finding, AIG was forced to increase write-downs for losses in the credit default swap portfolios of its subsidiaries from \$1.15 billion to \$4.88 billion.⁹ These are, of course, the sorts of risks that led Warren Buffett, while acknowledging their utility, famously to refer to OTC derivatives as “financial weapons of mass destruction.”¹⁰

In support of the ever evolving use and management of derivatives in retirement plans, this article summarizes both key features of OTC derivatives and lessons recently learned that, in appropriate circumstances, may be useful in the retirement plan context.¹¹ (References throughout the remainder of this article to “derivatives” will refer to “OTC derivatives” unless otherwise noted.)

INHERENT RISKS AND COMPLEXITIES OF DERIVATIVES

Investments in derivatives expose the parties to multiple risks including market, counterparty credit, operations, and legal risk. These elements also give rise to the opportunity to broaden, and to manage other exposures embedded in, a plan’s investment portfolio. Accordingly, these risks are inherent in a derivatives strategy and create the complexity in these instruments.

Market Risk

Market risk is defined as “the risk of loss associated with a decline in the value of a derivative instrument, and/or the decline in the value of a portfolio if the portfolio is unhedged or imperfectly hedged. Such declines result when the value of the underlying assets, securities, or rates moves in a direction that reduces the value of a derivative instrument.”¹²

The financial leverage that derivatives create will magnify losses from declines in market value (financial leverage may also create unwanted unrelated business taxable income for plans and other non-profit organizations). Losses will also occur if a derivatives transaction does not achieve the objective for which it was intended. Examples of these objectives include: hedging a variety of risks, including the basis risk, interest rate risk, credit risk, and market risk of an asset, an asset class, or a portfolio; modifying or hedging cash flows; adjusting the duration or convexity of an asset, liability, or a portfolio; generating additional incremental income for the portfolio; gaining economic exposure to a security where direct ownership of the underlying asset is too costly or is prohibited by legal or regulatory restrictions; and creating synthetic securities by replicating the economic exposure of an asset when that asset is either not available or more costly in the cash market.

The ability of a derivatives transaction to meet these objectives often depends on the accuracy of various assumptions, complex calculations, or mathematical models as well as the assumptions on which these calculations and models are based. For example, hedges are generally based on assumptions concerning the correlation of the derivative instrument and the hedged asset or liability and option pricing is based on assumptions about the volatility of the underlying asset and the relationship between the price of the option and various variables.

Counterparty Credit Risk

Derivatives transactions can result in one party to the transaction having a substantial and sometimes long-term credit exposure to the other party. Counterparty credit risk is the risk that a counterparty will become insolvent and not be able to perform its obligations under the derivatives contract. Increases in the market value of a derivatives transaction for one party will also generally increase that party's credit exposure to its counterparty in a corresponding amount.

Operations Risk

Operations risk is defined as “the risk associated with human error, system failures, or inadequate procedures and controls. This risk is exacerbated in the case of certain financial derivative instruments because of the complex nature of their payment structures and the calculation of their values.”¹³ Trading, pricing, reconciling, settling, and accounting for derivatives is a complex, cross-departmental task that requires the capture and reporting of substantial data.

As discussed above, the failure of a derivatives transaction to meet its designated objectives can result in significant losses for the company; therefore, the performance of derivatives transactions must be monitored carefully against these objectives. In the executive summary of its report, *Internal Control Issues in Derivatives Usage*, the Committee of Sponsoring Organizations of the Treadway Commission noted:

As contract features increase in complexity, the value and effectiveness of a derivative in achieving objectives may become more difficult to ascertain before such positions are closed out or settled for cash. Derivative products and activities must be well understood in order for control systems to provide adequate assurance that derivatives' use will support achievement of entity-wide strategies and objectives.¹⁴

Mistakes in calculating the market value of derivatives are also an operational risk that can result in material losses. Based on a variety of

variables and assumptions, these calculations are complex and prone to error.

The fact that initial cash disbursements are not required for many derivatives transactions contributes to the risk that operational errors or fraud will go undetected. If appropriate processes and controls are not in place to ensure proper trade entry, processing, settlement, reconciliation, and reporting, trades can go unrecorded or be recorded or priced incorrectly for months without correction. Commenting on this issue in its *Statement on Auditing Standards, Auditing Derivative Instruments, Hedging Activities, and Investments in Securities*, the American Institute of Certified Public Accounts warns, “Derivatives that do not involve an initial exchange of cash are subject to an increased risk that they will not be identified for valuation and disclosure.”¹⁵ As has been noted with respect to the Société Générale loss:

Fraud on this scale would have to be perpetrated on the derivatives side; it would be incredibly difficult on the cash side, as \$20 billion leaving the bank would raise a few red flags. Exchange-traded derivatives are purchased on margin and OTC derivatives on just a handshake, however, and as long as the positions are rolled (sold when approaching settlement and bought back with a longer-dated futures settlement date) around settlement date, a major cash outflow would never occur.¹⁶

Legal Risk

Legal risk is defined as “the risk that a transaction is not valid and enforceable under applicable law.” “Legal risk also refers to situations when a bank’s customer does not have the power and authority to engage in derivative transactions.”¹⁷

The derivatives master agreement is the primary legal document that governs the legal relationship between two parties trading OTC derivatives, including all outstanding derivatives transactions between the parties. It also addresses and mitigates counterparty credit risk. The specific terms of each derivatives transaction are documented by separate “confirmations,” which are incorporated by reference into the ISDA Master Agreement and deemed to form a single agreement between the parties.

The derivatives master agreement is generally composed of one of several versions of a standardized, preprinted contract developed by the International Swaps and Derivatives Association, Inc. (the “ISDA Master Agreement”); the Schedule to the ISDA Master Agreement (the negotiated section of this agreement), which allows the parties to make elections available under the ISDA Master Agreement and to modify its terms to

meet their specific needs; and confirmations that document the terms of each transaction entered into by the parties and which are incorporated by reference into the master agreement. By agreement, the ISDA Master Agreement can also include another preprinted standardized document, the Credit Support Annex, which provides for the collateralization of counterparty credit exposure. Like the ISDA Master Agreement, the terms of this standardized document can also be negotiated and tailored to meet the needs of the parties.¹⁸ (References herein to the “ISDA Master Agreement” will refer to the preprinted document; references to “*derivatives master agreement*” or “*master agreement*” will be to the final signed agreement of the parties that reflects changes and amendments the parties have made to the preprinted document.)

Although based on a standardized document, the derivatives master agreement is a complex, highly customized agreement. Like a loan agreement, the derivatives master agreement addresses the long-term credit exposure that one party may have to the other and includes various covenants and performance obligations; default and cross-default provisions; notification and disclosure requirements; representations and warranties; and sometimes complex collateral arrangements. However, unlike a loan agreement in which the amount of a party’s obligation under the loan is fixed, the plan’s payment obligations under a derivatives master agreement can grow over time, based on changing market values of the underlying transactions. Also, unlike a loan document in which the parties’ roles as either the lender or the creditor are fixed, these roles are interchangeable in a master agreement, depending on the changing aggregate market value of outstanding transactions under the agreement.

MITIGATION OF DERIVATIVES RISK

A number of studies and reports have been issued by independent industry groups as well as industry regulators that discuss process and controls for organizations that trade derivatives. These reports include: *Derivatives: Practices and Principles*, Report prepared by the Global Derivatives Study Group of the Group of Thirty, Washington, D.C. (July 1993); *Risk Management of Financial Derivatives*, Banking Circular No. 277, U.S. Office of the Comptroller of the Currency, Administrator of National Banks (October 27, 1993); and *Risk Management Guidelines for Derivatives*, Basle Committee on Bank Supervision (July 1994).

The requirements of an organization’s risk management system will generally vary according to the size and scope of its derivatives trading activities. As the Comptroller of the Currency, Administrator of National Banks, noted in an October 1993 release addressing banks that were both dealers and end-users of derivatives, “The sophistication

of a bank's risk management practices should be consistent with the level of activity and degree of risk assumed by the bank in its derivatives activities."¹⁹ The studies referenced above generally focus on major dealers. The derivatives operations of retirement plans entail much less breadth, volume, and complexity, and thus materially less risk exposure, than those of major dealers. Accordingly, the risk management techniques discussed below for dealers may provide helpful insights for, but do not translate directly to, the retirement plan context.

Board Oversight

In the dealer context, the board of directors exercise oversight over derivatives trading by establishing constraints on their use and by the adoption of a derivatives use plan ("Derivatives Use Plan"), as discussed in greater detail below, that documents the organization's risk management system and that requires periodic and meaningful reporting to the board on the organization's derivatives investments and the performance of its risk management system.²⁰ Boards will also generally evaluate the firm's risk management system on a periodic basis to confirm that it effectively mitigates and manages derivatives-related risks and is supported by adequate resources.²¹

Constraints

A dealer's board of directors will usually prohibit the use of derivatives except for specific board-authorized objectives. Boards will also often specify the instruments and strategies that an organization is authorized to use to achieve those objectives. Restrictions and controls are also generally placed around the execution of derivatives transactions. Only board-authorized personnel with adequate training and experience are authorized to approve and execute derivatives trades,²² and appropriate limits on the transactions an individual is authorized to trade as well as limits on the size or amount of the transactions an individual is authorized to approve and/or execute for an organization are also specified.

Risks can generally be classified as those for which an organization is compensated for taking, such as market risk and counterparty credit risk ("Compensated Risk"); and those for which it is not, such as the risk that a rogue trader will make unauthorized trades ("Uncompensated Risk"). Boards will generally establish limits on the amounts of Compensated Risk to which the organization is exposed, including limits on market exposure as well as limits on current and potential counterparty credit exposure.²³

Dealers also generally conduct risk assessments of their derivatives operations and identify Uncompensated Risk to which they may be potentially exposed and then approve management recommended

processes and controls to mitigate this risk; determine appropriate measurements and/or tests to monitor the exposure to this risk; and assign responsibility for conducting these tests and reporting the results to the board on a periodic basis.

Monitor and Report Risks

In the dealer context, risk management systems of dealers also monitor for compliance with board or senior management-established limits on Compensated Risk. They also monitor implemented processes and controls to confirm that they are effectively mitigating Uncompensated Risks. Market value at risk calculations are generally used to measure the market risk of derivatives positions. Dealers also stress test derivatives positions against various extreme market assumptions.

Current as well as potential counterparty credit risk exposures are routinely monitored for compliance with board-established restraints. Boards generally review and approve methodologies for the calculation of the market value of derivatives positions. The frequency with which market value is calculated varies depending on a number of factors; however, the major dealers do so on a daily basis.

Responsibility or ownership for conducting these measurements and tests and for monitoring for compliance with board-established policies and procedures and for reporting the results to the dealer's board on a periodic basis is generally assigned by the board of directors, with an emphasis on the segregation of authority and independence of each function from the other and especially from the portfolio management function.²⁴

Risk management for dealers also is supported by systems to process, confirm, and settle derivatives trades, with proper controls to ensure against unauthorized entry of transaction details. Dealers may invest in sophisticated systems capable of generating accurate and timely reporting of positions and risk exposures, including the verification of position data, profit and loss figures, and transaction-by-transaction details; as well as facilitating the daily reconciliation of front and back office databases by operations or another independent business unit.

Derivatives Use Plan

A dealer's derivatives trading and risk management system is generally documented in a board-approved derivatives trading and risk management policy ("Derivatives Use Plan"), which also includes relevant accounting, tax, and legal policies, and policies for determining the market value of derivatives. The Derivatives Use Plan is the means by which the board of directors exercises its oversight over the organization's derivatives investments; as such, it also provides for periodic

and meaningful reporting to the board and is generally reviewed and updated on an annual basis by the board.

A Derivatives Use Plan is a dynamic road map of the organization's risk management system, frequently referenced by participants in the program; it typically is not an abstract description of an organization's risk management system. A Derivatives Use Plan will generally describe with detail and specificity the processes, controls, and systems that support the transaction process from trade authorization and approvals to execution, trade entry, processing, settlement, accounting, and reporting.

In current practice, a Derivatives Use Plan will not simply require that a risk be monitored; it will specify a methodology or model to measure that risk and assign clear and unambiguous responsibility and ownership for the measurement of that risk. Rather than requiring the organization to "carefully monitor counterparty credit exposure and provide reports to the board," a Derivatives Use Plan might direct the dealer as follows:

The Risk Management Department will be responsible for monitoring on an ongoing basis counterparty credit exposure and potential credit exposure against the following limits....Credit exposure and potential credit exposure will be calculated as follows....The Risk Management Department will provide the board with a quarterly counterparty credit exposure report, which shall include the following details....

Finally, Derivatives Use Plans generally require the dealer to report exceptions or breaches of the policy. Policy violations will inevitably occur in even well-run organizations; a dynamic and effective risk management system is a closed-loop process in which flaws or deficiencies in the risk management process are regularly identified and reported to appropriate management levels; corrective action is determined and implemented; and implementation and effectiveness of corrective action is confirmed.

SPECIFIC CONSIDERATIONS FOR PLAN SPONSORS AND NAMED FIDUCIARIES

Confirmation of Authority and Assessment of Capabilities

It is elementary that a named fiduciary who authorizes an investment manager to trade derivatives for the plan should first confirm that plan documents permit derivatives investments and also permit the named fiduciary to delegate that authority.²⁵ In addition, as the DOL has observed, before making this delegation, the named fiduciary should also consider whether it has the personnel, resources, and

experience required to assess the capabilities of the investment manager against industry standards and to diligently monitor its activities on an ongoing basis if that authority is granted.²⁶ Named fiduciaries that do not have appropriate derivatives experience commonly engage consultants to conduct due diligence reviews of investment managers.

Policies and Procedures and Investment Policy Statement

Following on to the practice of dealers, named fiduciaries who delegate derivatives investment authority may also wish to consider establishing appropriate policies and procedures around the delegation of their authority and the oversight of this delegation. There is, of course, no universally applicable approach to these issues; appropriate policies and procedures, if any, will depend on all the circumstances surrounding the use of derivatives by a plan.

For example, in some circumstances, plan sponsors or named fiduciaries that delegate derivatives investment authority may wish to establish plan-level derivatives policies and a plan-level risk management system to ensure that the delegation of their authority and the supervision of the investment manager to which that authority is delegated, is carried out in a manner consistent with the standards of ERISA. As appropriate, these policies might include minimum standards or requirements for investment managers; establish appropriate procedures and guidelines for conducting due diligence assessments of their capabilities; or specify processes for monitoring derivatives trading activities. To the extent there are unique issues presented by the management of derivatives, as discussed below, policies and guidelines to address those issues may also be incorporated into the plan's derivatives policy.²⁷

Criteria for Investment Management Selection and Due Diligence Review

Depending on the circumstances, an on-site due diligence evaluation of the derivatives capabilities of the investment manager, including the experience and training of its personnel and its risk management system, can have value. If the responsibility for conducting this review is delegated to a consultant, the named fiduciary may wish to specify in the plan's derivatives policy the criteria for selecting the consultant and for interacting with the consultant and validating its conclusions.

A derivatives use plan of the investment manager itself provides insight into the manager's risk management system and a partial due diligence road map. Many investment managers are also prepared to verify that the risk management system described in the investment manager's Derivatives Use Plan has been implemented and functions as described in that document. The investment manager's compliance system will

generally document investment limits and restrictions for each account; provide access to this information by portfolio managers and compliance personnel (ideally, the investment manager should have a pre-trade clearance process for derivatives); and perform routine portfolio compliance tests to verify compliance with these requirements.

The investment manager's risk management process will usually generate documentation that can be used to evaluate the investment manager's processes and controls. Trade tickets will generally identify the objective of the trade, and if the transaction has been entered into for hedging purposes, the specific asset or liability the instrument is hedging.

Tests and reports performed by the derivatives risk management system are also generally available, such as new transaction and outstanding transaction reports, counterparty exposure reports, effectiveness tests, stress tests, board reports, board actions providing authorization for specified individuals to trade derivatives for the organization, and legal documentation.

Derivatives Master Agreement

Derivatives master agreements commonly require plans to provide derivatives counterparties with various plan documents, including the plan trust document, its investment policy statement, and plan financial statements. Counterparties also routinely include in the master agreement requirements that the plan provide updated financial statements on a quarterly or annual basis, as well as updated copies of any amended plan documents.

When a fiduciary delegates authority to an investment manager to invest a portfolio of plan assets in cash instruments (for example, a fixed income portfolio), he or she can take some comfort in the fact that the plan's maximum exposure to losses by that investment manager, in a worst case scenario, will be the value of the portfolio assigned to the advisor to manage. However, when a fiduciary also gives that investment manager the authority to trade derivatives for that portfolio, all of the assets of the plan may potentially be exposed to the investment manager's derivatives trading losses if the master agreement does not limit the recourse of the counterparty. The standardized ISDA Master Agreement does not include any limitations on recourse that one party has against the other to satisfy obligations incurred thereunder. Depending on the investment objectives, and economic and other terms of a particular derivative, therefore, it is sometimes possible to negotiate a clause that strictly limits the counterparty's recourse against the plan to only those assets, *e.g.*, under management by the investment manager.

Many derivatives master agreements negotiated with plans include termination events that are triggered by various reportable events under

ERISA Section 4043(c) or other ERISA-defined events. Since most derivatives transactions might be considered “lending of money or other extension of credit” for the purposes of the prohibited transaction restrictions of ERISA Section 406(a), counterparties also generally require plans to (1) specify in the derivatives master agreement the prohibited transaction exemption on which the plan is relying; and (2) make representations concerning any facts or circumstances on which the exemption is based. The investment manager may need to consult with the named fiduciary or other plan representatives before making these representations.

Again depending on the scale and function of the derivatives program of a plan, it is sometimes useful for a plan to prepare a single derivatives master agreement under which multiple investment managers can trade, as opposed to having different investment managers negotiate multiple agreements, sometimes with the same counterparty, with inconsistent terms. For example, if various separately negotiated agreements have inconsistent cross-default terms, the occurrence of a single event related to a single portfolio may trigger a cascade effect that results in the termination of all the plan’s derivatives agreements and its outstanding derivatives transactions thereunder. Also, if multiple agreements are negotiated with a single counterparty on behalf of a plan, in the event the counterparty becomes insolvent and the agreements are terminated, the plan may not be able to aggregate its exposures to the counterparty under each agreement for close-out netting purposes. It is increasingly common for derivatives master agreements to include Credit Support Annexes that provide for the collateralization of counterparty credit exposure. If multiple collateral arrangements are made under separate master agreements with the same counterparty without coordination, the plan’s credit exposure to that counterparty will not be aggregated and netted for collateral purposes; as a result, an investment manager may be required to deliver collateral under one agreement with a counterparty at the same time another investment manager is requesting collateral from the same counterparty. (In the worst case, by delivering collateral to a counterparty, an investment manager may increase a plan’s aggregate credit exposure to that counterparty.)

Anticipate and Address Unique Issues

In a very conventional manner, the ongoing experience with derivatives broadly among financial institutions and end users continues to identify new and subtle points that now can be anticipated and addressed. As with all the discussion above, these points do not arise in all cases and, where they do arise, there is no singular approach that is preferable in all circumstances.

Establishing and applying meaningful restrictions, limits, and risk measurements to derivatives investments, and incorporating derivatives transaction exposures into issuer and aggregate investment limits, can on occasion lead to unanticipated issues of interpretation. For example, derivatives investment policies frequently stipulate that derivatives may not be used to speculate and may only be used for hedging purposes. If the manager of a portfolio of fixed-rate bonds enters into an interest rate swap as the fixed-rate payer (and receives the floating rate), is that manager hedging the portfolio against a drop in interest rates, or speculating that interest rates will rise? Many derivatives policies also impose restrictions on “leverage” without distinguishing between “financial” or “accounting” leverage” and “economic” leverage. Most restrictions on leverage are intended to apply to “financial” leverage, which occurs when total assets exceed net assets as opposed to “economic” leverage, which derivatives are used to increase the volatility of a portfolio (for example, by purchasing call or put options). To take another example, should the investment restrictions and limits on a portfolio’s cash investments be based on the aggregate economic exposure of the portfolio’s cash and derivatives positions? Should a portfolio that holds a cash position that exceeds a specified limit in an asset or asset class be in violation of that limit if it has an off-setting derivatives exposure? Should a portfolio that holds a cash position that does not exceed a specified investment limit in an asset or an asset class be in violation of that limit if on an aggregate basis its derivatives positions give the portfolio an actual economic exposure in excess of that limit? For example, can a portfolio manager who is prohibited from investing in below-investment-grade securities do so in the cash market and offset the portfolio’s credit exposure to the issuer by entering into a credit default swap as the protection buyer? These are emerging points on which greater detail in drafting, where appropriate, can now provide advance answers to future operational questions.

Applying any restrictions may also give rise to valuation questions. For example, the exposure created by an investment in a total return swap will vary, depending on whether the plan is a fixed-rate payer or a floating-rate payer. In a total return swap, one party, the fixed-rate payer, agrees to make a fixed-rate payment to the other and receive in return a floating rate payment that is based on the performance of asset or an index. If it is the fixed-rate payer of a total return swap on the Standard & Poor’s 500 index, a plan will be exposed to gains or losses on that index; however, if it is the floating rate payer of that total return swap, the plan’s exposure to that index will be reduced. Either way, the resulting exposure needs to be quantified for testing compliance with any prescribed limits on exposure. In the past, the notional value of the total return swap was commonly used; some players are recently coming

to the judgment that the notional amount plus or minus the market value of the swap can be more useful.

Investment policies that cover derivatives generally specify that derivatives transactions may only be entered into with counterparties who have some minimum credit rating. Most investment policies that cover derivatives prohibit an investment manager from entering into derivatives transactions with a counterparty with a credit rating that is below some minimum specified rating. It has been less common for policies to describe the course of action to be followed if a counterparty that initially satisfied the specified rating subsequently falls below it, and recent events have exposed the need for such provisions from time to time.

Establishing counterparty credit exposure limits and controls also has its subtleties. Do the “no short sales” restrictions commonly found in investment policies negotiated between plans and investment managers restrict the purchase of credit protection by an investment manager? Does the purchase of credit protection on the debt of a company with a below investment grading violate an investment policy’s minimum ratings requirement? These are points emerging in the marketplace that can, in appropriate circumstances, merit attention.

Limits are generally imposed on counterparty credit exposure. Counterparty credit exposure is generally defined for most derivatives transactions not by the notional amount of the outstanding derivatives transactions but as the aggregate or net market value of those transactions between two parties. However, credit exposure under credit default swaps is calculated differently. To illustrate, a plan enters into a credit default swap with a counterparty. The plan is the fixed-rate payer, also known as the “protection buyer,” and the counterparty is the floating rate payer, also known as the “protection seller.” The notional amount of the transaction is \$60 million, and its market value is \$1.5 million in favor of the counterparty. In this case, even though the market value of the transaction is in the counterparty’s favor, it is generally understood that as the protection buyer, the plan has a \$58.5 million credit exposure to the counterparty, which is calculated as the notional amount of the swap less its \$1.5 million market value. On the other hand, as the floating rate payer, the counterparty’s credit exposure to the plan is equal to \$1.5 million, the market value of the credit default swap. Anticipating this distinction in evaluating exposures under credit default swaps, where appropriate, can avoid complications.

CONCLUSION

Derivatives are well-established and widely used investment instruments, recognized for their utility in the portfolio and risk management

process. Recent experience continues to provide new insights into how they can be even more effectively deployed in the retirement plan context.

NOTES

1. *Bank for International Settlements Quarterly Review*, March 2008.
2. As of the end of September, 2007. Statistical Supplement to the Federal Reserve Bulletin, January 2008. This figure includes domestic non-financial debt of \$3.446 trillion and financial sector corporate bond debt of \$5.821 trillion. In a published paper, Tim Weithers of the University of Chicago writes, “Currently, in the autos, primarily G.M. and Ford, there’s estimated to be somewhere between 14 to 18 times the notional outstanding in credit default swaps (alone) than exists in the underlying bonds, notes, and loans.” Tim Weithers, “Credit Derivatives, Macro Risks, and Systemic Risks,” *Federal Reserve Bank of Atlanta, Economic Review*, Vol. 92, No. 4, Fourth Quarter 2007.
3. In addition to the Exchange-traded, OTC distinction, derivatives are generally classified into four broad groups: forward purchase agreements, futures, options and swaps. In the United States, futures are traded exclusively on regulated futures exchanges; and options are traded in both the over-the-counter market and on regulated exchanges. Forward purchase agreements and swaps are traded exclusively in the over-the-counter markets by institutional investors.
4. Basle Committee on Banking Supervision, Risk Management Guidelines for Derivatives (July 1994)
5. In a 2006 article in the *Ohio State Law Journal* considering the application of the modern prudent investor rule to derivatives, the authors suggest that derivatives are “not only highly beneficial, but also essential for fiduciaries seeking to fulfill their duties as prudent investors.” Robert J. Aalberts and Percy S. Poon, “Derivatives and the Modern Prudent Investor Rule: Too Risky or Too Necessary?”. *67 Ohio St. L.J.* 525.
6. Department of Labor-Comptroller Letter of Guidance and Statement on Derivatives signed by Assistant Labor Secretary Olena Berg on Mar. 28, 1996.
7. *The Wall Street Journal*, page A1 (January 25, 2008). Other organizations with notable derivatives losses include Hammersmith and Fulham, £1.14 million (1989); Kashima Oil, \$1.45 billion (1994); Metalgesellschaft AG, \$1 billion (1994); Gibson Greetings, \$23 million (1994); Procter & Gamble, \$200 million (1994); Orange County, California, \$1.7 billion (1994); Daiwa Bank, \$1.1 billion (1995); Barings P.L.C., \$1.4 billion (1995); Sumitomo Corporation, \$2.6 billion (1996).
8. Form 8-K Current report, File No.: 001-08787 (February 11, 2008).
9. *The Wall Street Journal*, February 13, 2008, and March 3, 2008.
10. Robert J. Samuelson, “A Financial ‘Time Bomb?’”, *Washington Post*, Mar. 12, 2003, at A21.
11. Certain technical issues under ERISA unique to the retirement plan setting—for example, prohibited transaction issues, the ERISA trust requirement, and delegation of investment management responsibility—are beyond the scope of this article.
12. Comptroller of the Currency, Administrator of National Banks, *Questions and Answers for BC-277: Risk Management of Financial Derivatives* (May 10, 1994).

13. Comptroller of the Currency, Administrator of National Banks, *Questions and Answers for BC-277: Risk Management of Financial Derivatives* (May 10, 1994).
14. Internal Control Issues in Derivatives Usage.
15. Statement on Auditing Standards No. 92, *Auditing Derivative Instruments, Hedging Activities, and Investments in Securities*, paragraph 8, The American Institute of Certified Public Accountants.
16. Larry Tabb, *Wall Street & Technology* (February 19, 2008).
17. Comptroller of the Currency, Administrator of National Banks, *Questions and Answers for BC-277: Risk Management of Financial Derivatives* (May 10, 1994).
18. To further add to the complexity of this document, the ISDA Master Agreement and the individual transaction confirmations use literally hundreds of terms, which are defined in various ISDA publications. The ISDA Master Agreement and transaction confirmations incorporate these definitions by reference.
19. Comptroller of the Currency Administrator of National Banks, *Banking Circular 277, Risk Management of Financial Derivatives*.
20. *See Recommendation 16 from Derivatives: Practices and Principles, Report* prepared by the Global Derivatives Study Group of the Group of Thirty, Washington, D.C. (July 1993): “Dealers and end-users should use derivatives in a manner consistent with the overall risk management and capital policies approved by their boards of directors. These policies should be reviewed as business and market circumstances change. Policies governing derivatives should be clearly defined, including the purposes 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.”
21. In its 1996 letter to the Comptroller of the Currency, the DOL also spoke to this point: As part of its evaluation of the investment, a fiduciary must analyze the operational risks being undertaken in making the investment. Among other things, the fiduciary should determine whether it possesses the requisite expertise, knowledge, and information to understand and analyze the nature of the risks and potential returns involved in a particular derivative investment. In particular, the fiduciary must determine whether the plan has adequate information and risk management systems in place given the nature, size and complexity of the plan’s derivatives activity, and whether the plan fiduciary has personnel who are competent to manage these systems.
22. *See Recommendation 16 from Derivatives: Practices and Principles, Report* prepared by the Global Derivatives Study Group of the Group of Thirty, Washington, D.C. (July 1993): “Dealers and end-users must ensure that their derivatives activities are undertaken by professionals in sufficient number and with the appropriate experience, skill levels, and degrees of specialization. These professionals include specialists who transact and manage the risks involved, their supervisors, and those responsible for processing, reporting, controlling, and auditing the activities.”
23. As necessary, the board should also specify how such limits should be calculated.
24. The DOL also noted monitoring market risk in its 1996 letter: Plan fiduciaries have a duty to determine the appropriate methodology used to evaluate market risk and the information which must be collected to do so. Among other things, this

would include, where appropriate, stress simulation models showing the projected performance of the derivatives and of the plan's portfolio under various market conditions. Stress simulations are particularly important because assumptions which may be valid for normal markets may not be valid in abnormal markets, resulting in significant losses.

25. ERISA Section 404(a)(1)(D).
26. In its letter to the Comptroller of the Currency, the DOL advised ERISA fiduciaries who delegate investment authority to an investment manager to, "consider whether the investment managers have such personnel and controls and whether the plan fiduciary has personnel who are competent to monitor the derivatives activities of the investment managers."
27. The plan derivatives policy should also address many of the same issues covered in the Derivatives Use Plan of an organization that makes derivatives investments directly on its on behalf or for its clients (in the case of an investment manager). For example, it should establish constraints on the use of derivatives; establish limits on derivatives risk exposure; and provide guidelines for meaningful reporting on derivative investments by investment managers.

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