

Structured Finance

Derivative Ratings

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The Rating Process for Derivative Product Companies

An enhanced derivative product company (DPC) is a company set up specifically to originate, intermediate, or guarantee derivative product transactions. Such a company's credit quality is derived largely from its financial and credit support structure. Enhanced subsidiaries differ from other derivative-product subsidiaries rated by Standard & Poor's, as their credit ratings do not rely on their parent's guarantee. A DPC may engage in over-the-counter interest rate, currency and equity swaps, and options as well as certain exchange-traded futures and options depending on its individual structure. A DPC is capitalized at a level appropriate for the scope of its business activities and desired rating. DPCs have been set up in most cases to overcome credit sensitivity in the derivative product markets.

Enhanced DPCs are structured operating entities. As such, the criteria that have been developed for rating DPCs are based on criteria established for rating structured finance transactions and financial institutions. Certain key issues concerning the DPC's parent must be addressed before the rating process begins, since DPCs generally contract their parent or an affiliate to provide them with certain services including operational support and systems. These issues are:

- The parent's experience and operating history regarding derivative products;
- Senior management's experience and understanding of derivative products;
- Sufficiency and capacity of operations and systems technology to support the derivatives business of the DPC; and
- The parent's commitment to the DPC, including plans for its form and business development.

The structures of the existing enhanced DPCs differ in several respects. These differences reflect the parent companies' specific business needs in the marketplace, and their desired methods for quantifying the risks associated with their business goals concerning the activities of their DPCs. The major difference is in the type of

the DPCs structured, which are either continuation or termination structures. The continuation structures are designed to honor their contracts to full maturity, while termination structures are designed to honor their contracts to full maturity, or should certain events occur, to terminate and cash settle all their contracts prior to their final maturity.

The criteria developed for evaluating enhanced derivative product companies focus on three main areas: legal risk, financial risk, and operating risk.

Legal Risk

Separateness

In forming a DPC that is to be rated higher than its parent, one of the primary concerns is the “separateness” of the two entities in an insolvency of the parent. Standard & Poor’s relies on opinions of independent counsel to the effect that the DPC would not be consolidated with its parent in the event of the parent’s insolvency. The nonconsolidation opinion in many cases is based on factual assumptions regarding the parent’s relationship with, and involvement in, the subsidiary. These factual assumptions include any direct or indirect financial support to be provided by the parent to the subsidiary, the subsidiary’s day-to-day business activities and transactions with the parent, and all servicing agreements between the two entities. Because non-consolidation opinions are necessarily fact-intensive, analysts review the “indicia of separateness” as reflected in the DPC’s operating documents to ensure that the relationship between the parent and the subsidiary continues at arm’s length while the subsidiary is in existence.

All aspects of the relationship between the DPC and its parent should be clearly defined. One aspect that receives particular attention is the nature of the parent’s obligations to the DPC. In addition to contributing capital to the DPC to insulate the subsidiary from market risk, the parent may engage in certain offsetting transactions with the DPC. The parent then will post collateral to secure its obligations to its subsidiary under such offsetting transactions.

In such a case, the DPC must obtain a first priority perfected security interest in this collateral. Standard & Poor’s requires an opinion from independent counsel stating that the DPC has a first priority perfected security interest in the collateral and that, in the event of an insolvency of the parent, the collateral would be enforceable and not subject to a stay or avoidance by the receiver, liquidator, administrator, or bankruptcy trustee of the parent. In an insolvency of the parent, timely availability of the collateral often depends on the nature of the obligation that is being collateralized. The legal opinion should address these issues.

Collateral Arrangements

Depending on governing law and the nature of the obligations collateralized, the use of collateral in the structure of a DPC may be restricted. In all cases, the collateral must be enforceable and realizable in a timely manner in the event of a bankruptcy or insolvency of the party posting the collateral. The collateral will be valued regularly using a pricing service recognized by Standard & Poor's. Collateral value will be also adjusted in accordance with market value discount factors, which assume an immediate liquidation of the securities pledged as collateral. If a DPC relies on collateral posted by third-party counterparties to secure such parties' obligations, the DPC's operating documents should detail the procedure under which the collateral will be administered. Additionally, analysts will evaluate:

- The enforceability of the collateral notwithstanding the insolvency of such third-party counterparty;
- The perfection and priority of the security interest in the collateral; and
- The timely availability of such collateral including any possible stay imposed on the DPC by the insolvency of the third-party counterparty.

Although opinions to this effect could be rendered for each counterparty under the applicable laws, analytical review of opinions and documents for each counterparty would be cumbersome within the rating process. Standard & Poor's has developed an approach that considers both procedural safeguards and legal opinions to address the risks associated with pledge of collateral. However, the approach differs, depending on the amount of collateral posted by a counterparty. If the collateral pledged by a counterparty is within a prespecified threshold amount or a predetermined percentage of its capital, the DPC could provide a general opinion rendered by an independent counsel that a first priority perfected security interest in each item of the collateral will be obtained following procedures set out in the DPC's operating guidelines.

Counsel's opinion will also state that the pledged collateral would be enforceable notwithstanding the insolvency of the third-party counterparty, and that it would not be subject to a stay or be recoverable as a preferential transfer in the insolvency of the third-party counterparty posting the collateral. If the collateral pledged by a counterparty exceeds the preestablished level, the DPC is required to provide a specific opinion rendered by an independent counsel, stating the validity and perfection of each item of collateral following the established procedure in its guidelines, and the collateral's timely availability in the insolvency of the counterparty.

The counsel's opinion and the procedures should be specific as to the type of collateral and the type of counterparty allowed to pledge collateral (for example, U.S. bankruptcy code entities, U.S. FDIC-insured institutions, French financial institutions), and the method of perfecting the security interest in such collateral. Standard & Poor's expects that the procedures would be specific to the relevant

jurisdiction's law to ensure that the DPC would have timely and full access to the collateral in an insolvency of the counterparty. Analysts will evaluate the perfection and insolvency opinions under the laws of the relevant jurisdictions.

The review will also cover the third-party counterparty's security agreement with the DPC. If the DPC proposes to repledge counterparty collateral, the security agreement should include the counterparty's consent to a repledge of its pledged collateral. Excess counterparty collateral held by the DPC from a third-party counterparty will not be considered as available credit support for the DPC. Provided the above criteria is met, collateral posted by a third party would be credited to the DPC from the counterparty credit concentration risk perspective, but for capital allocation purposes, the aggregate uncollateralized exposure to the counterparty will be incorporated.

Netting

A third area of concern is the availability of netting in the DPCs. For structures using offsetting transactions between the DPC and its parent where netting is uncertain as a result of the legal status of the parties or the law governing the transaction in an insolvency of the counterparty, Standard & Poor's requires an independent counsel's opinion that netting would be enforceable between the parties. For all other transactions, in evaluating the capital adequacy of a DPC, analysts will consider using net exposures as appropriate if it receives the requisite opinions that netting would be enforceable as a matter of law. Standard & Poor's considers the U.S., the U.K., Australia, the Cayman Islands, Canada, France (under specified conditions), Germany, Ireland (under specified conditions), Sweden (under specified conditions) and Switzerland as "netting jurisdictions," for which it would not require opinion of counsel.

To ensure enforceability of netting, the DPC must use one master agreement for each counterparty. As a general matter, Standard & Poor's does not consider multibranch netting or netting under a master agreement that combines many submaster agreements to be enforceable. From a capital-adequacy perspective, it is recommended that the question of netting be extensively reviewed.

The issues relating to separateness, capital and collateral structure, and netting treatment are clearly key legal issues in the DPC structure. There may be, however, other regulatory and legal issues specific to a DPC structure that will have to be addressed and evaluated. For example, special-purpose companies are subject to criteria published in "Legal Issues in Structured Finance Transactions," April 1998. The criteria for rating derivative product companies also includes review of the following documents:

- Articles of incorporation;
- Corporate by-laws;
- Corporate operating guidelines;

- Custodial agreement (as applicable);
- Corporate board resolutions; and
- Independent legal opinions (as applicable).

Executed copies of all legal opinions and agreements must be completed upon the release of the rating and before the DPC becomes operative.

Financial Risk

Quantification of financial risks and their coverage at a level consistent with the desired rating is a significant element in the evaluation of a DPC. Because the quantification exercise is closely linked to structural features incorporated in a DPC's operating guidelines, the specification of the risk model of a DPC should be parallel to the formulation of its structure. Examples of structural features with implications for model specification are product types and tenor limits, the credit quality of counterparties, the net or gross treatment of exposure to a counterparty, exposure limits, and methods for curing any breaches of pre-established limits.

The primary financial risks that a DPC's structure should address, whether through its risk model or otherwise, are the risks associated with:

- Credit losses and their severity arising out of counterparties' defaults;
- A decline in the value of a DPC's portfolio due to adverse market movements; and
- Inadequate liquidity of a DPC's assets.

The major determinants of potential credit losses are the credit quality of the counterparties and the size of the credit exposure to each counterparty. The counterparty's credit quality as measured by its rating provides a proxy for the probability of its default. Standard & Poor's publishes annual studies on corporate defaults, which provide default and rating transition probabilities associated with each rating category over different time horizons. The historical default rates will be stressed, where appropriate, to achieve a more conservative assessment of potential credit losses. The determination of credit exposure to a counterparty at any point in time, however, requires the valuation of each transaction with that counterparty, and application of net or gross treatment depending on the counterparty's jurisdiction. Moreover, some of the structural concentration limits may also have to be taken into account.

The potential credit exposure to a counterparty at the time of its default depends on the market conditions. To allow for the influence of market variables on the potential credit exposure, a simulation model may be constructed. The model would simulate the evolution of the term structure of interest rates, exchange rates, and other relevant indices in many different currencies over a specified time horizon. The simulated values of the underlying indices can then be used to calculate the value of each transaction at each point in time, from which the appropriate credit exposure

to each counterparty (or just the counterparty assumed to have defaulted), can be determined.

Having established, by means of simulations on index behavior, the potential credit exposures at any given time, it is next necessary to introduce default incidence. One possibility is to model incidence by means of simulation, using the default probabilities of each counterparty over each time period. The potential losses corresponding to each market path can be obtained by combining the results of default simulations and the counterparty exposures. A consideration of losses across all market paths permits the construction of a distribution of potential credit losses. The necessary credit enhancement to protect against losses at a given level of confidence may be obtained. This risk model can also quantify the potential change in the portfolio's value over a period of time.

A DPC with a continuation structure generally receives collateral from the parent to cover its exposure to the parent resulting from the back-to-back trades. This collateral amount, after appropriate discount factors are applied, is equivalent to the net mark-to-market value of the DPC's portfolio of contracts with its parent. Upon the occurrence of certain events, however, the management of the DPC's portfolio will be passed on to a contingent manager.

In the short period prior to the transfer of portfolio management to the contingent manager, the value of the DPC's contracts with its parent could rise. Using the capabilities of the risk model, the potential increase in the DPC's credit exposure to the parent may be quantified.

In a termination structure, the value of the DPC's portfolio can change over the period beginning with the last regular valuation date and ending at the early termination valuation date upon occurrence of a termination trigger event. Again, the potential change in the portfolio's value may be determined at the desired level of confidence by using the risk model.

The DPC's liquidity needs also require evaluation. The DPC must be able to meet its obligations on a timely basis. These include its payables to its counterparties under its derivative contracts, and to its parent resulting from the back-to-back transactions and, in certain cases, obligation to meet margin calls on the exchange-traded futures contracts used as hedges. The risk model may be used in determining the liquidity needs of the DPC by using simulated market evolution and evaluating the current portfolio of derivative contracts and the likely portfolio of offsetting hedges. Using the model, a distribution of daily portfolio positions can be simulated, thus establishing, at an appropriate level of confidence, the potential liquidity need of the DPC on a daily basis and over a specific time horizon.

The above section addresses the major financial risks that Standard & Poor's considers in evaluating a DPC, and suggests, in very broad terms, how the risk model may be developed and applied to quantify the potential risks. Analysts will

evaluate any model presented to them that can adequately address the potential financial risks associated with a DPC's derivatives portfolio.

Operating Risk

The DPC's operating risks are associated with its day-to-day operation and scope of activities. The first step in addressing such risks is to formulate a document that details the operations and procedures according to which the company will operate. The operating document should be exhaustive and should cover all phases of the DPC's operation, including:

- Initiation of operation and "ramp" period,
- Ongoing operations, and
- The termination or continuation after the termination of its relationship with the parent.

Management, Board of Directors, Dividend Policy, and Voluntary Bankruptcy

The DPC's management is the responsibility of its designated officers. Its operating document is the representation by the parent of the manner in which the DPC will manage its activities and meet its obligations on a day-to-day basis. The criteria require that the DPC's board of directors include at least two independent members. Independent board members should not currently or over the past year have been employed by the DPC's parent or any of its affiliates, and should not own more than 10% of the outstanding common stock of the parent. All board members should have an understanding of derivative product. Any material change to the operating guidelines should be approved by at least a majority of the board members, including a majority of the outside directors. The board should execute a nonpetition covenant in the DPC's agreements with the parent, effectively limiting the parent's ability to voluntarily file the DPC into bankruptcy. The dividend policy should also limit dividend distributions to a level which would not diminish the DPC's capital base.

Market Risk Mitigation Method

DPCs utilize different methods or instruments for mitigating or removing their market risk depending on their desired structure. Certain structures engage in back-to-back mirror contracts with their parents to insulate against market risk associated with their portfolio. Some DPCs have employed over-the-counter derivatives contracts and government securities as their ongoing hedging mechanism. Others have chosen to use offsetting swaps with their parent and exchange-traded futures and options as a means of insulating against market risk in the absence of their parent.

Depending on the method employed, Standard & Poor's may assume that the portfolio will be managed in a market-risk-neutral manner. However, the evaluation

assumes that some losses may arise as a result of the bankruptcy or insolvency of the DPC's parent, which will cause the DPC to seek new hedges. The amount of portfolio value that may be lost as a result of the parent's default is quantified assuming a conservative time frame for the replacement of hedging swaps or other hedging instruments, or the acceleration of the total portfolio in a termination. The capital or credit-support-adequacy quantification exercise is an attempt to identify the probable risks in DPCs and to provide appropriate reserves for these risks.

Limit Structures

The limit structure of a DPC should first define the minimum credit quality of counterparties with which the entity will originate or intermediate transactions. Then individual exposure limits to each counterparty based on the counterparty's credit rating should be established. In some cases, aggregate exposure limits may also be established for certain groups of counterparties. The exposure to a subsidiary that is rated higher than its parent should be compared with a limit designated to that subsidiary's credit rating. The exposure to a subsidiary rated equal or lower than its parent should be compared to the limit designated to its own rating category. However, the overall exposure to a group of entities within a corporate family will be aggregated on a gross basis and compared to the limit established for the parent's rating category. The exposure limits should also correspond proportionately to the DPC's capital or support base.

Additionally, the limits should reflect the DPC's ability to manage its position with third-party counterparties. Other limits concerning product type and tenor should also be defined. These limits should be considered in the modeling exercise. A product would be defined as a swap, index, or a currency type transaction individually or combined into one instrument. It is important to note that the properties of more exotic transactions should be carefully detailed to facilitate the analysis of the effect of their use on the DPC's credit quality.

Remedies

The limit structures that derivative subsidiaries employ will only be effective if there is a mechanism to either maintain the relevant exposures within the limits or prudently cure their violation. Breach of limit generally results in a capital charge. Furthermore, counterparty exposure overlimits will have to be incorporated in subsequent capital adequacy calculations. As stated in the Legal Risk section, cures that require counterparty collateral posting may or may not have an effect on the DPC's exposure to that posting party. It is imperative for the DPC's management to demonstrate that the limits are maintained and the remedies for violation of those limits are appropriately administered.

Relationship With Affiliates

Many of DPCs have engaged their parent or affiliate as a service provider to perform tasks such as marketing, daily marking to market, accounting, payment calculation, and processing and other related functions. The subsidiary may, however, choose to retain some or all of these responsibilities within itself. Regardless of who performs these functions, concise details of how they will be performed and how they will be paid for should be contained in the operating documents.

Further, should all of these services be provided by the parent, the nonconsolidation opinion should address these arrangements and their effect on the DPC's separateness. A derivative product subsidiary may also act as guarantor of certain affiliates' transactions. In such cases, the operating document should describe precisely how such contracts will be recorded and how the DPC will allocate capital to support its contingent liability under the guaranteed transactions. This activity should also be referenced in the nonconsolidation opinion. Depending on the form and the structure of the guaranteed transactions, Standard & Poor's may require additional legal opinions.

Capital Investment Restrictions

The capital investment policy of the DPC, as outlined in its operating document, should preclude any investments in assets other than 'AAA' rated assets. The appropriate credit quality of short-term instruments in 'A-1+'. Some exceptions apply to short-term investments. There would be no adverse impact on the rating of the DPC if it held 20% or less of its investments in 'A-1' rated instruments provided that the 'A-1' investments were invested in a minimum of three different issuers with no more than 33.33% invested in any one issuer. The investment policy should exclude investments in the parent or any affiliates.

The investment policy of the DPC should be consistent with the established criteria concerning qualified investments for 'AAA' structured financings. In termination structures, capital investments will be discounted in accordance with market value criteria as published by Standard & Poor's. The adjustment provides for rapid liquidation of investments in a termination event.

Collateral Management

The collateral that is posted to the DPC, whether by the parent or by third-party counterparties, may be credited against exposures to the posting entity only if the DPC has a first-priority perfected security interest in the collateral, as described in the Legal Risk section. The collateral should also be invested in 'AAA/A-1+' quality assets. Additionally, the value of collateral will be discounted in accordance with the market value criteria published by Standard & Poor's to provide for rapid liquidation

of the collateral. The perfection procedures should be detailed in the operating document and meet the aforementioned criteria. Securities invested in capital or posted as collateral should be valued regularly using a pricing service acceptable to Standard & Poor's.

During the regular operation of the DPC, many issues arise regarding the DPC's legal responsibilities, its operations, and its procedures upon occurrence of certain events. The following issues must be addressed.

Documentation

The derivative product subsidiaries must have the necessary facilities to negotiate and process their deal confirmation and swap agreements in a timely fashion. The enforceability of the derivative contracts hinges on several key legal issues such as authority and capacity of the parties involved, the type of product, form of the master agreement, and the proper execution of deal confirmations as well as the master agreement by both parties. Standardized agreements, such as ISDA forms, are widely accepted and frequently used by global market participants. It is preferred that DPCs execute signed master agreements with their counterparties prior to entering into transactions. It is critical for a DPC to execute its transaction documents as quickly as possible, since the quantification of capital adequacy and potential market risk depends on accurate determination of the portfolio's transactions. In cases where the DPC's master agreements differ from the ISDA or other standardized agreements, obtaining signed confirmations is more critical. Analysts will review the form of master agreement and attached schedules as part of its evaluation process.

New Products

The product mix with which a DPC begins its operations may or may not be adequate to provide a DPC's customers with all of their risk management needs. Moreover, markets change and new techniques are developed, the adoption of which could prove to be advantageous to the DPC. Therefore, inclusion of procedures for new product introduction are necessary to the DPC's operating documents. The procedures should include testing of the new product's market risk parameters and impact on capital and credit support measurement. It may also be necessary to review the legal status of a new product type to ensure its qualification under the provisions of the relevant governing law.

Modifications

Changes to the structure of the DPC or its agreements, including operating documents, should be implemented in an orderly fashion. Changes regarding relationships with the parent or affiliates should be carefully reviewed by the DPC's board of directors to determine the outcome of such changes. Standard & Poor's expects to be informed

in advance of any proposed changes to the structure or its relevant documentation. Should a change be proposed that would have an adverse effect on the DPC's rating, the DPC will be informed immediately.

Frequency of Model Runs

The use of the risk model that was constructed for the initial quantification of potential credit losses for the DPC should be included in the operating document for regular quantification of the current portfolio's capital adequacy. The portfolio and the business environment change over time. It is important to use the risk model methodology to measure continually the condition of the portfolio relative to these changes.

External Audit

Independent audits should be conducted periodically to verify the DPC's compliance with its established operating guidelines. The independent auditor will be expected to verify the credit rating of the counterparties contained in the portfolio, the valuation of the swaps in the portfolio, and the compliance with the limit structures. The annual financial reports of the subsidiary should also be subject to external audit.

Finally, the DPC's structure should adequately address the termination of its relationship with its parent. The operating guidelines must establish procedures which will be followed by the DPC, its contingent manager or independent auditor as the case may be, following a termination event.

Termination Procedure

The DPC's structure should adequately address the termination of its intermediation agreement with its parent, as well as the early termination of its contracts with its counterparties in case of a termination structure. The occurrence of certain trigger events or, in some cases, the default of the parent, will cause a derivatives subsidiary to either terminate all of its outstanding contracts or engage its contingent manager to manage the portfolio to final maturity. The termination procedure should be clearly detailed in the operating document, including methods of addressing portfolio valuation and potential market disruptions. The liquidation of capital investments should be addressed, and any involvement of a trustee should be made clear. The operating document should also include references to the swap master agreement's calendar of events in the event of an early termination, and call for the procedures to expedite the termination as outlined in those documents. Should a contingent manager be involved, the contingent management agreement should outline the procedure and time frame for rehedging the portfolio. Additionally, the triggers for the different activities of the contingent manager, and the procedure for an orderly transition of the portfolio's management to the contingent manager, should be contained in the operating document.

Standard & Poor's criteria for enhanced derivative product companies and the evolution of its rating approach are reflective of the dynamics of the derivative markets and the laws applicable to those markets.

Surveillance

Regular surveillance on the management, operations, and performance of a DPC will be maintained after the release of the DPC's rating. Since the rating is based on the DPC's financial ability to honor its obligations according to their terms, it is necessary to ensure that the DPC establishes operating guidelines within which it will be managed. Standard & Poor's requires the DPC to submit data regarding the credit quality and asset mix of its portfolios, for the purpose of monitoring the degree of adherence to operating guidelines and the portfolio's risk parameters. Surveillance reports should also include data sufficient to determine the financial adequacy of the DPC's capital or collateral based on its current scope of business.

DPC ratings are among those that analysts monitor the most actively; they require surveillance information to be provided weekly to Standard & Poor's and to be reviewed by an independent auditor on a regular basis.

Portfolio Credit Quality

The credit quality of counterparties to derivatives transactions is the primary determinant of potential credit losses that a DPC might experience. The information supplied should include specific details on a counterparty's legal name as denoted on agreements with the DPCs, counterparty or senior unsecured debt rating, country of domicile, aggregate notional amounts, aggregate exposure amounts and netting status. Counterparty exposures should be quantified on a net or gross basis according to the jurisdiction relevant to the counterparty. Counterparty exposure limits defined in the DPC's operating guidelines are often a function of counterparty credit ratings. Operation in accordance with the established credit limits is critical to the maintenance of the DPC's rating.

Portfolio Asset Quality

DPC portfolios may consist of interest rate, currency, option, and to a limited extent, equity derivatives transactions. Product constraints based on type, currency, index and tenor have been designed by the DPC's sponsors to limit the DPC's risk parameters to remain within those addressed in its capital adequacy analysis. Additionally, upon the occurrence of any specified trigger event, transactions must be readily priced and hedgeable. As a result, the surveillance data should provide analysts with sufficient transaction detail to determine the risk profile of the DPC's portfolio. The types of products and their respective currencies and indices should be included in the surveillance reports.

Capital Adequacy

The adequacy of a DPC's financial resources is a major component in the determination of the DPC's rating. DPCs must have sufficient financial capacity to honor their obligations in accordance with their terms at all times. The capitalization of DPCs covers, among other things, credit risk exposure to counterparties, potential liquidity risks, and potential market risks. Capital and collateral supporting the vehicle must be invested in eligible securities in accordance with the established criteria for qualified investments on 'AAA' rated structured financings.

The over-collateralization levels published by Standard & Poor's must be applied to the collateral investments' market value to determine their liquidation values. The schedule of investments should include each security's type, credit rating, face value, remaining maturity, current market value and liquidation value. The pricing mechanism used for determining the investments' market values must be a pricing service approved by Standard & Poor's.

Adherence to Operating Documents

The documentation of a DPC includes operating procedures or guidelines that describe the day-to-day management for the vehicle. The DPC's surveillance includes a review of these operating procedures in order to verify that the entity is operating within its predetermined scope.

Audit Procedures

Operations of DPCs must be examined by a firm of independent auditors for adherence to established operating guidelines. Master agreements, supporting documents and trade confirmations should be examined by the auditors for proper and timely execution and completeness. The mark-to-market value of the portfolio of transactions should be independently verified by the auditing firm. Capital and collateral investments must be reviewed regarding their eligibility and liquidation value. Any discrepancies, breaches, or deficiencies of the DPC's pre-determined risk parameters should be immediately communicated to Standard & Poor's.

The surveillance aspect of the DPCs is an integral part of their ongoing operations. The flow of information provides much of what is considered necessary to determine the credit quality of the entity. The surveillance process, like the derivatives market, is constantly changing to incorporate the independent portfolio simulations made by Standard & Poor's, as well as other useful exercises to maintain DPC ratings.

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Derivative Product Companies: Risks and Future Directions

The development of a derivative product company (DPC) rating opinion involves careful consideration of various sources of risk and the provisions against them. The kinds of risks confronting DPCs may be classified into three broad categories: legal, financial, and operational. In this article, the specific manifestations of these risks, the measurement methods used to size them, and the mitigants against them are detailed according to the categories. After analysis of the risk categories, the article will conclude with directions that DPCs may take in the future.

Legal Risk

Analysis of a DPC's structure involves many legal considerations, but the principal concerns are as follows:

- The bankruptcy remote nature of the DPC;
- The enforceability of collateral used by the DPC; and
- The legality of netting the exposures generated by portfolios of counterparty contracts.

The analysis of capital adequacy often is conditioned on the particular solutions proposed by a DPC to the legal issues associated with its structure (*see chart 1*).

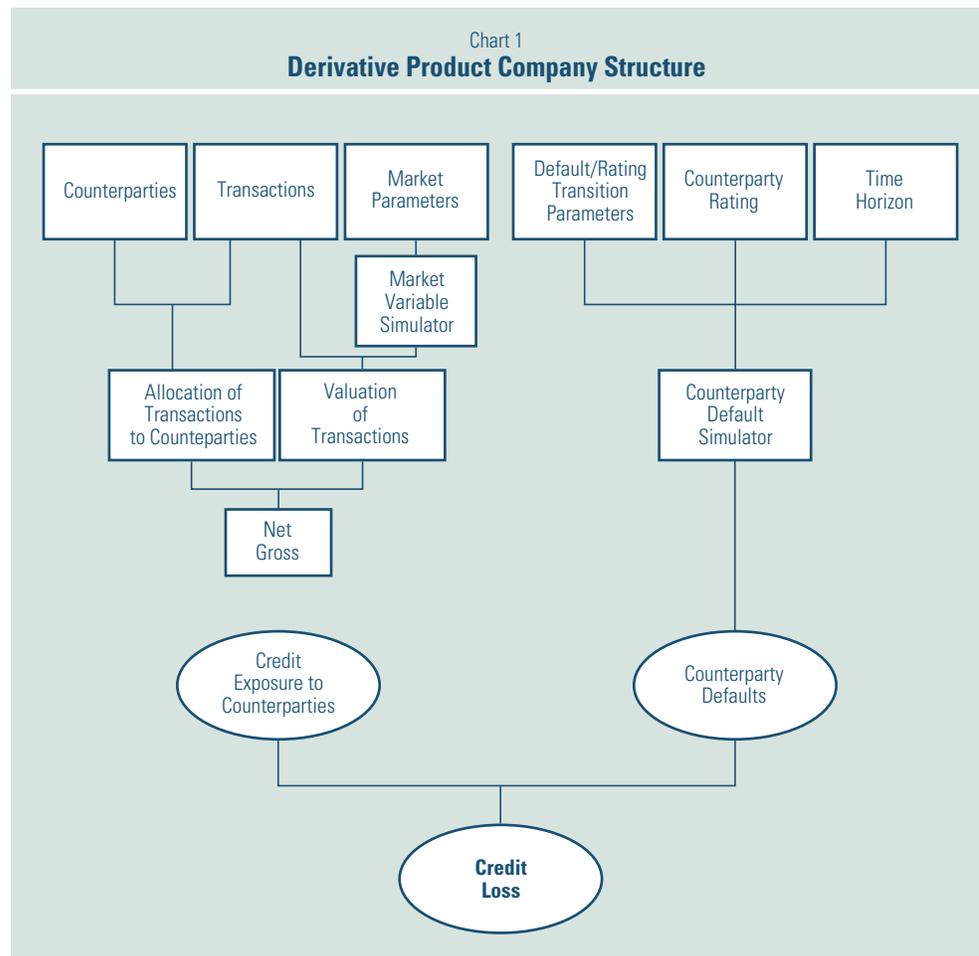
A primary concern in forming a DPC that will be rated higher than its parent is the separateness of the two entities in the event of the insolvency of the parent company. The DPC should be structured so that a court would not decide to consolidate its assets with those of the parent in the event of the parent's insolvency.

Nonconsolidation in bankruptcy depends on:

- The parent’s relationship with, and involvement in, the subsidiary, including any direct or indirect financial support provided by the parent to the subsidiary;
- The subsidiary’s day-to-day business activities and transactions with the parent; and
- All servicing agreements between the two entities.

The second important aspect in analyzing a DPC’s structure is the assets held by the DPC and the availability of these assets for paying only the DPC’s creditors. Assets, either as a capital contribution or as a sale for fair value, should be delivered to the DPC through transfers that could not be avoided as a preference or otherwise invalidated if the parent becomes insolvent.

In some DPCs, the parent will engage in certain risk-reducing transactions with the DPC and will post collateral to secure its obligations under such risk-reducing transactions. If the parent posts collateral to secure its obligations to the subsidiary, the subsidiary should have a first-priority perfected security interest in this collateral. The collateral should be enforceable notwithstanding the insolvency of the parent, and should not be subject to any stay or avoidance by the receiver, liquidator,



administrator, or bankruptcy trustee of the parent. In an insolvency of the parent, the collateral's timely availability often depends on the nature of the obligation being collateralized.

Depending on governing law and the nature of the obligations collateralized, the use of collateral in a DPC's structure may be restricted. Losses on transactions that cannot be collateralized may be covered by deductions against the available capital in the DPC. In all cases, the collateral must be enforceable and realizable in a timely manner. An assessment of the value of posted collateral as a security against specific obligations also is subject to haircuts, that is, discounts that reflect a quick sale value of the collateral items.

As with the parent, if a DPC wants to rely on collateral posted by third-party counterparties to secure such parties' obligations, it is necessary to evaluate the collateral's enforceability notwithstanding the counterparty's insolvency; the perfection and priority of the security interest in the collateral; and the timely availability of such collateral, including any possible stay imposed on the DPC by the counterparty's insolvency.

Another area of concern in analyzing a DPC's structure is the availability of netting in its operations. When netting is uncertain as a result of the parties' legal status or the laws governing the transaction, gross exposures to such parties should be incorporated into any financial-risk model used to evaluate and quantify a DPC's capital adequacy.

For structures using offsetting transactions between the DPC and its parent where netting is uncertain as a result of the legal status of the parties or the law governing the transaction in an insolvency of the counterparty, Standard & Poor's requires an independent counsel's opinion that netting would be enforceable between the parties. For all other transactions, in evaluating the capital adequacy of a DPC, the use of net exposures will be considered, as appropriate, if the requisite opinions that netting would be enforceable as a matter of law are received. Standard & Poor's considers the U.S., the U.K., Australia, the Cayman Islands, Canada, France (under specified conditions), Germany, Ireland (under specified conditions), Sweden (under specified conditions) and Switzerland as "netting jurisdictions," for which the opinion of counsel would not be required.

To ensure enforceability of netting, the DPC must use one master agreement for each counterparty. As a general matter, Standard & Poor's does not consider multibranch netting or netting under a master agreement that combines many submaster agreements to be enforceable. From a capital-adequacy perspective, it is recommended that the question of netting be extensively reviewed.

Financial Risk

As with any other vehicle transacting in financial markets, a DPC is subject to risks of financial loss, either due to market movements (market risk) or counterparty default (credit risk). How this risk presents itself depends in part on the DPC's structure. Many DPCs employ mirror transactions and other hedges to mitigate against market risk, but these vehicles still are exposed to credit risk.

Analyzing financial risk involves a simulation of market variables, using volatility and correlation parameters derived from historical observation. When combined with a projection of portfolio transactions with counterparties of defined characteristics, this analysis may be used to establish distributions of change in portfolio value (or exposures to the parent) over prescribed time intervals.

At the same time, the simulation exercise may be used to determine a constellation of joint simulated exposure time paths for the respective counterparties represented in the exercise. These simulated exposures may be combined with a default simulation founded upon the credit ratings of portfolio counterparties and a linkage between such ratings and the likelihood of default per unit time. From such a combination, a credit loss distribution may be constructed and coverage against loss may be determined for a given confidence level threshold.

The tasks associated with this strategy are:

- Specification of counterparties and their key characteristics;
- Definition of an appropriate portfolio of derivative contracts and an evolutionary scheme for it;
- Specification of an index-generating process, appropriately restricted by historical data, so that index simulations of market variables conform to appropriate historical characteristics;
- Valuation of projected contracts conditioned on simulated index time paths, and the consequent determination of a distribution of market gain or loss, a distribution of potential growth of exposure to a parent, and a distribution of exposures to third-party counterparties;
- Establishment of a method for introducing data on default probabilities to establish an appropriate default loss distribution for analytical purposes; and
- Construction of a module for comparing potential losses quantified by the modeling system with the credit support of the DPC, and relating the quantification of risk and resources against the agreed guidelines for operating the DPC.

Counterparties

The modeling strategy requires a credit rating and domicile for each counterparty to be specified. The credit rating defines the likelihood of the counterparty defaulting. The counterparty's domicile is important, since the strategy for assessing financial

risk will require a simulation of counterparty exposures. As noted previously, there are certain jurisdictions in which there is a strong legal foundation to expect, in the event of close-out, that a netting of obligations arising from derivative transactions written under a single-swap master agreement would be sustained. On transactions with counterparties domiciled in such jurisdictions, the DPC reasonably may model the benefit from netting. For counterparties domiciled in other jurisdictions, one would expect the DPC to model risk on the basis of gross exposures.

Projection of Portfolio Transactions

A DPC's exposure to credit and market risk will depend on the character of its portfolio. For any given percentage change in underlying indices, different portfolios of derivatives will fluctuate in value in dramatically different ways depending on the type and tenor of the transactions within them.

The definition of a portfolio for specific risk calculations is not a trivial exercise. In the evaluation of risks confronting a start-up operation, the initial portfolio may or may not be known, depending on whether the DPC will be inheriting a seasoned portfolio or developing one from scratch. In cases where the portfolio will be constructed entirely from new originations, some reasonable projection as to the character of expected future business is necessary. This will involve defining the mix of product in terms such as the volume of interest rate and currency swaps, equity options, and so forth; tenor; balance across payment positions, such as fixed versus floating, various foreign-exchange positions, written calls (puts) versus purchased calls (puts), and so forth; and some projection of the general evolution of this mix.

Even when the initial portfolio is seasoned, it is necessary to define the portfolio evolution scheme appropriate for the risk assessment exercise. Portfolio evolution may take deterministic forms, such as run-off, constant replacement at current positions, or evolution according to a projected growth path involving programs of acceleration or deceleration in originations of the various products across various tenors. Alternatively, a stochastic portfolio evolution may be constructed with the random process and parameters linked to particular criteria.

It is worth clarifying that within the portfolio evolution exercise is an evolution scheme for counterparties, with which the evolving portfolio projection is linked transaction by transaction. As previously noted, the counterparty credit quality and each counterparty's domicile are materially important in calculating coverage against financial risk. For this reason, a time projection of contracts with specific counterparty association is needed in which each counterparty's credit quality and domicile is concurrently tracked. The effort's end result is a time path projection of counterparty and transaction characteristics for use in simulation exercises.

A proper risk evaluation may require a study of the sensitivity of results to portfolio assumptions. This would invite multiple analyses, each founded upon a different projection of portfolio characteristics. More risk is borne in portfolios with transactions of longer tenor or with counterparties of lower credit quality, while values of certain kinds of products are more sensitive in index change than others, and, hence, are more likely to generate large exposures. The sensitivity of results to various portfolio assumptions may be compared by establishing alternative projections in which characteristics such as tenor, credit quality, or product composition are permitted to vary from one projection to the next. It is clear that, as time passes, simulations must be rerun with updated portfolio projections.

Index Generation

By definition, a derivative's financial value is obtained with reference to an underlying index or indices. A DPC's market loss or credit exposure to each of its counterparties depends, therefore, on the uncertain movement of these variables.

An analytical exercise may be conducted to assess a vehicle's vulnerability to risks arising from index movements. In this exercise, index movements are simulated by means of a random process. This generation process may be repeated many times to create a spectrum of index paths across simulation time periods to some established horizon. The many different evolutions, shaped by appropriate parameters, establish a range of probabilistic index outcomes upon which a probabilistic range of exposures to different counterparties may be developed. This spectrum of exposures is crucial to any analysis of potential credit loss. The outcomes of the index generation process also may be used to establish a probabilistic assessment of the vulnerability of the vehicle to market loss.

Since a DPC portfolio is almost certain to include interest rate swaps and other interest rate derivatives, the simulation process must model evolutions for a whole interest rate term structure. Many options are available, the simplest of which is to drive movements of the term structure by means of movements of one interest rate, typically a short rate. Such a system commonly is constructed as a one-factor model, in which the evolution of the whole term structure is driven by movements in a single underlying random variable. In the basic models, the random variable defines the evolution of a driver interest rate level. Changes in the position of the driver rate are then used to reposition the entire term structure.

An extension of such systems consists of models in which the evolution of the term structure is defined by the movement of two or more rates, each evolved separately by means of a random factor. The addition of factors in the defining sequence of rate levels along the term structure provides potentially greater flexibility in the representation of term structure movements. The driver rate or rates may be points

on a yield curve, zero curve, or forward curve. The mathematical relationships between these rate structures must be embedded in the modeling process.

In the single- or multiple-factor models previously mentioned, parametric equations may be required to transform the conditions of the driver variable or variables into a representation for the initial condition of the term structure. By carefully selecting parameters, one may obtain a close fit between the current, empirically observed term structure and the parametric representation of it. In general, however, the fit will not be perfect and the errors, even if small, will introduce the possibility of arbitrage opportunities among financial products priced off the parametric representation.

One response to this problem is to take the entire, current, empirically observed term structure as the point of departure for the simulation and evolve the whole structure as a function of a factor or factors. A notable issue in pursuing such a strategy is that only a particular kind of evolution will result in simulated term structures that maintain intertemporal arbitrage-free characteristics. The essence of no-arbitrage models of term structure evolution rests in establishing appropriate restrictions to the evolutionary process so that arbitrage opportunities are necessarily eliminated.

Because derivative portfolios commonly hold derivatives in different currencies, a system for the joint evolution of interest rates in different currencies must be conceived. One of the difficulties involved in structuring an index evolution system is constructing a system that generates variables with appropriate correlations.

Clearly, for the generation process to be relevant, outcomes must be framed by a set of parameters informed by observations across an appropriate interval of history: simulation outcomes must exhibit volatilities conforming to historical observation and exhibit correlations in joint variable evolutions that also conform to experience. The choice of relevant history is itself a matter for study. While recent history is the obvious guide to developments in the near future, anomalies within the period may make it unrepresentative.

Once appropriate parameters are set, indices may be evolved by means of random shock drawings. This randomness allows the analytical process to reflect the uncertainty of specific outcomes. If desired, elements may be introduced to effect mean reversion for the index-generating process. It also may be desirable to establish boundary conditions or other restrictions on the evolutionary process to ensure that positive variable values and proper spread relationships among various simulated indices are maintained.

Generation of Simulated Exposures and Liabilities

Given each joint simulation of a set of index movements to the simulation time horizon, calculations of cash flow from contract receivables and payables as well as mark-to-market valuations may be made for specific time periods, conditioned on the

specifications of counterparties and portfolio transactions. For most kinds of derivative transactions, valuation is an exercise conforming to recognized standards and practice. This is particularly true for plain vanilla swaps, forward rate agreements, foreign-exchange forwards, and European options.

Consider the joint simulation of a set of index movements with a single projected portfolio and counterparty time path (derived in the fashion previously discussed). By applying valuation methods to this set of simulated variables, one can generate a time path of portfolio value and a time path of exposures to the various counterparties in the portfolio. Repeating the process many times will generate a distribution of changes in portfolio valuation relative to the initial condition for each point in simulation time from the initial condition to the horizon.

If the portfolio is not mirrored, matched, or otherwise perfectly hedged, it will bear market risk that will be reflected in nondegenerate distributions of portfolio valuation change. By analyzing the distributions, one may determine the credit enhancement necessary to cover market losses over an appropriate time interval from the initial period at any requisite confidence level.

Each point in simulation time will be associated not only with a distribution of portfolio valuation change, but also with distributions of exposures to each counterparty. In particular, a time path of distributions of exposure to a DPC's parent may be determined. This can be used to determine the extent to which uncollateralized exposure to the parent could grow during the contract termination window. Coverage against an appropriately established distribution again may be determined (*see following discussion*).

Modeling Default Incidence

A probabilistic model for simulating default may be constructed using three components:

- Counterparty credit ratings;
- Rating transition and default parameters; and
- Determination of an appropriate time horizon for the analysis.

The combination of these elements into a modeling framework, are considered in the following paragraphs. Transactors only establish credit ratings from one or more independent rating agencies. If a potential transactor does not have a rating, a Standard & Poor's evaluation is likely to be necessary, unless exposure to the counterparty is entirely charged against capital.

The specific relationship between credit ratings and default incidence is an empirical issue and calls for historical research. Standard & Poor's has conducted an analysis of rating transition and default histories of rated senior unsecured corporate debt. The results of the historical analysis may be used to inform a simulation of default.

Assume that average one-year-rating transition rates are broadly stable and that rating transition events are independent. Then, a matrix of average one-year-rating change rates, expressing respective probabilities that an issuer with a given rating at the beginning of the year will maintain its rating or migrate to some other rating or default by year end, may be taken as probability parameters in a simulation model of rating transition and default. Alternatively, average cumulative default rates over given time intervals may be taken as benchmarks to establish default probability parameters in a simulation exercise.

For certain purposes, the application of averaged historical default experiences may suffice. In other circumstances, it is desirable to use stressed probabilities, that is, probabilities that reflect the likelihood of rating downgrade and default under conditions more stressful than those represented by recent history.

Stressed probabilities are advisable particularly when a calculation is being made of potential default losses that arise over short time intervals. The assumption of independence of default events is convenient and reasonable when one is analyzing cumulative loss over a long interval of time. For default loss estimates over short time horizons (such as a termination window), the application of the assumption, in conjunction with unstressed probabilities, leads to default loss distributions that are not robust.

Yet another reason for stressing default probabilities for use in testing the adequacy of credit enhancement in a termination vehicle is that there is some uncertainty as to how counterparties with out-of-the-money positions would respond to an acceleration of obligations. A counterparty owing money on accelerated contracts also may face a liquidity crisis and be unable to satisfy its obligations according to the termination schedule. Since timeliness in the receipt of all obligations due to the DPC is a vital concern in termination structures—and Standard & Poor's rating of them—it is prudent to apply severely stressed historical-default probabilities in constructing a risk model assessing coverage for potential default loss during a termination period.

The relevant window over which exposure to default loss must be studied depends on the nature of the DPC structure. Structures mitigating market risk by means of mirrors or other hedges still must evaluate credit risk, typically extending to the longest tenor in the portfolio. Structures using mirror transactions with the parent to mitigate market risk will cease transactions, accelerate obligations, and settle with the parent if the parent deteriorates financially below some stated threshold. In such circumstances, the risk of uncollateralized exposure growth to the parent runs from the last good mark and associated posting to the date of valuation of accelerated obligations.

Structures may benefit from collateral postings against exposures, particularly the exposure of the DPC to its parent. In the case of a guarantee structure in which the guarantee program posts collateral against its mark-to-market positions, risk of counterparty default must be evaluated from the last posting of collateral through to

the valuation and settlement of accelerated receivables. In other terminating structures, a special evaluation of credit risk must be performed from the termination trigger through to the settlement of DPC receivables.

The transformation of index path drawings and associated portfolio valuations to default loss distributions through the use of relevant default probabilities may be achieved in different ways. It is worth emphasizing that, for the time interval under consideration, it is not the mathematical expectation of cumulative default loss that is desired but a construction of its distribution.

Perhaps the most intuitive method is to simulate a time path of default incidence of portfolio counterparties using an appropriate set of default probabilities, applying to each counterparty, at each payment date, the probability of default associated with its rating. The default drawings may be convolved or otherwise combined with the calculated exposures to each counterparty to establish a distribution of cumulative default losses. This distribution, in turn, may be applied, in a manner described below, in testing the adequacy of DPC credit enhancement.

Alternatively, one may simulate rating transition and default using period-by-period rating transition and default probabilities. Again, these results may be combined with exposure time paths to the various counterparties to determine a default loss distribution.

Given random drawings defining a single simulated index set time path, and a set of default probabilities over counterparties, a distribution of default loss may also be established by considering the probability of realizing every possible configuration of counterparty cash flow and default across all counterparties. The distribution represents the limiting condition that would be obtained if, given counterparty exposure time paths following from the single projection of contracts and the single projection of index levels, simulations of counterparty default using the given set of default probabilities were performed many times.

Note that a different random projection of index levels would result in a defined and different cumulative loss distribution. Many random index time path simulations result in many separate cumulative loss distributions. Combining these distributions in some appropriate fashion leads to a single cumulative loss distribution embedding information on probabilistic exposures and default experiences. Such a cumulative loss distribution then may be applied in testing the adequacy of DPC credit enhancement.

The assessment of credit risk also is influenced by assumptions regarding possible recovery in the event of default. Because Standard & Poor's DPC ratings address not only the likelihood of an entity meeting its payment obligations but also the timeliness of those payments, Standard & Poor's gives no credit for recovery in the event of default. Such recovery is likely to take time; in the interim the resources of the DPC may be called upon before recovery has been effected.

Calculations of Coverage for Default Loss

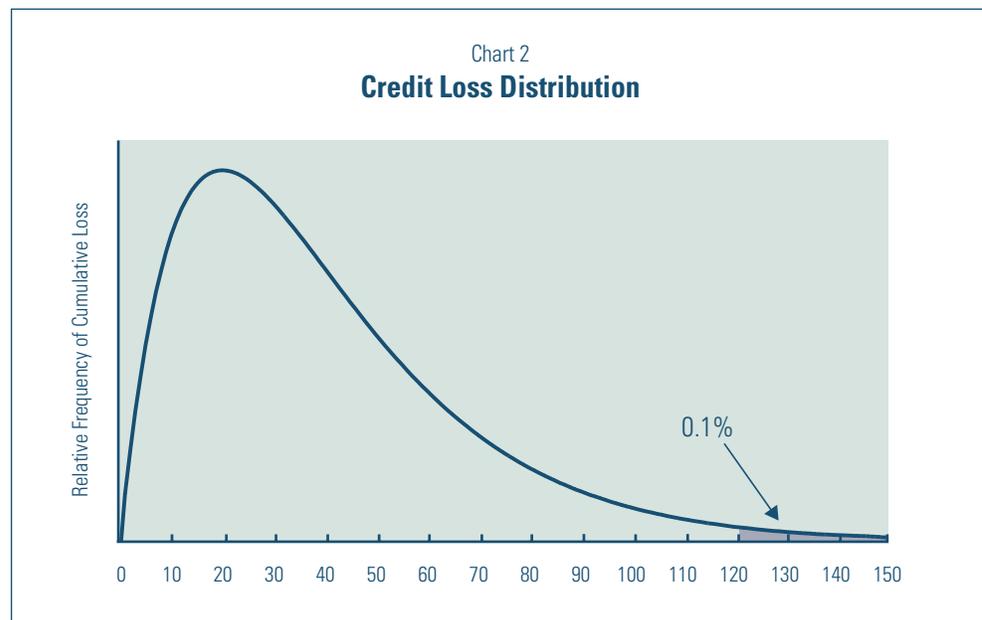
A single simulated time path for defaults covering each of the counterparties in the portfolio, when combined with a time path for respective counterparty exposures, generates a single simulated cumulative credit loss experience across the time interval covered in the simulation. When this process is repeated many times using different default and exposure paths, a distribution of cumulative loss is generated.

Coverage against credit loss then may be determined at any given confidence level by moving out an appropriate distance to the tail of the distribution. The determined coverage amount then may be compared with DPC resources to establish the adequacy of those resources against the contingency of loss.

In the illustration of a loss distribution and coverage calculation, if the shaded portion to the right of the \$120 million represents 0.1% of the area under the curve, then a 99.9% confidence level coverage of loss across this distribution would be \$120 million (*see chart 2*).

The specific confidence level target to be applied is, by its nature, a subjective matter and depends on the specific goals, calculations, and concerns of the agent setting the target. The robustness or lack of robustness of various simulation exercise elements is one factor in making the decision. To the extent that portfolio and counterparty projections, default probabilities, and index simulations are stressed and robust against input assumptions, the confidence target may be more generous.

For example, if the selected market variable simulator generates a distribution of index values with a relatively wide dispersion and weight in the tails, or if applied default probabilities are particularly onerous and stressed, or if the applied portfolio



projection is relatively rich in riskier products with longer tenors, then the applied confidence target may be set a bit lower. The converse, of course, may also apply.

The confidence target also is related to the goal of the exercise. For highly rated DPCs, targets are set to promote DPC survival under stressful environments with a very high degree of confidence.

Operating Risk

Operating a DPC safely depends on skilled personnel devising, and then executing, a clear and rigorous series of guidelines and programs backed by active, multitiered monitoring arrangements. At the heart of the system are the operating guidelines, which detail fundamental operating policies and procedures of the DPC. The guidelines should precisely lay out the following information:

- DPC governance;
- Limit structures and other policies and procedures for risk mitigation;
- Capital adequacy tests;
- Policies concerning the contingency of a drastic credit rating downgrade or failure of the DPC parent; and
- Cures for, and consequences of, guideline breaches.

Clearly and comprehensively articulated governance structures are very important, since ultimate responsibility for the realization of risk-management programs rests with the vehicle's managers, especially its senior managers. Beyond the particular strengths each director brings to a vehicle's board, the board, as a body, should be:

- Familiar with derivative products;
- Made up of an adequate number of truly independent directors;
- Obligated to vote unanimously on certain crucial issues; and
- Able to execute a nonpetition covenant in the DPC's agreements, with the sponsor to limit the sponsor's ability to voluntarily file the subsidiary into bankruptcy.

Typically, the operating guidelines will include a dividend policy, which serves to further separate and protect the DPC's interests from what may be the immediate interests of the parent. The operating guidelines also will describe the principal methods of risk mitigation in the form of mirrors, matching transactions, and hedges, and detail limits structures. The latter are usually stipulated with reference to:

- Individual counterparty exposure (typically conditioned by credit rating);
- Aggregate counterparty credit level exposures;
- Sovereign exposures;
- Product and tenor restrictions; and
- Limitations on the type and duration of instruments in which capital funds may be invested.

The operating guidelines typically express a policy concerning collateral. Such policies must be supplemented with detailed procedures designed to establish and maintain a first-priority perfected security interest in the collateral.

In spite of all the risk-mitigation methods, one nevertheless must provide for potential loss. Policies and procedures must be prepared to cover the contingency of counterparty default. Capital adequacy test rules, including test frequency and the consequence of test failure, are important elements of the operating guidelines. The specifications of the risk model and its components, if not included in the operating guidelines, must be fully described in other written documentation.

The practical exercise of a derivatives operation involves an array of activities including origination, bookkeeping and accounting, calculation, billing and payment processing, and report generation and evaluation, as well as contact with rating agencies. Employees of the DPC may perform these functions. Alternatively, many of these activities may be performed under contract by the parent or by an independent servicing company. To the extent that the DPC interacts regularly with the parent due to risk-mitigating trades or because of origination, calculation, or accounting services that the parent provides to the DPC, appropriate intermediation and agency agreements must be in place, with fees clearly set at arm's-length rates.

As the relationship between the parent and the DPC may be extensive, careful planning must be made for the contingency of the parent's incapacitation or failure. Plans may include the specification of triggers. In the case of continuation vehicles, beyond plans for settling obligations between the parent and the DPC, arrangements for a contingent manager may be specified, as well as backup agreements for calculation, accounting, and billing services. In the case of termination vehicles and explicit detailed timeline of events, describing the steps involved in valuing and settling accelerated obligations must be established in writing for both counterparties and management.

The limits and restrictions of the operating guidelines establish vital safeguards for the DPC; breaches of these guidelines should have explicit consequences and required cures. Beyond such explicit provisions, an independent firm must establish a system of external audits, as well as a mechanism for regular communication with rating agencies (including the reporting of guideline breaches).

The proper documentation of all agreements and executed trades with counterparties is critical. Before executing trades, signed master swap agreements should be in place. Upon the execution of a transaction, confirmations must be issued promptly, and signed copies must be collected from the counterparty within a reasonable time frame, reviewed for accuracy, and stored safely.

Financial risk management depends not only on a sophisticated mathematical risk model, but also on constant managerial attention to operational procedures and

detailed analyses of the portfolio's market position. To this end, portions of the risk model may be applied or supplemented with other systems for use by managers in closely monitoring the mark-to-market value of portfolio positions and in evaluating the sensitivity of such positions to possible changes in index movements.

The combination of structural and procedural safeguards with careful calculation and managerial oversight establishes the framework for managing the various operating risks likely to confront the DPC. As part of the rating process, Standard & Poor's examines operating policies and procedures to evaluate a DPC's capacity to realize the benefits of programmed safeguards. Analysts will also monitor DPC performance through the periodic receipt of reports, including audited reports, extensive portfolio analysis, and notices of guideline breaches. These activities, performed in connection with the contracted function of Standard & Poor's as a rating agency, are distinctly different from regulatory functions performed by governmental authorities to which the DPC may be required to report.

The Future of Derivative Product Companies

Since DPCs first began to emerge in the early 1990's, they have enjoyed increasing acceptance as intermediaries among highly credit-sensitive transactors. This acceptance, in combination with persistent credit and market conditions that spurred their creation, suggests that DPCs will continue to be a feature in financial markets in the future.

Heightened credit sensitivity manifests itself in a variety of ways. For example, counterparties may demand that over-the-counter (OTC) derivative transactions be supplemented with credit-support agreements such as two-way mark-to-market agreements. In such arrangements, parties agree to evaluate their positions with each other at regular intervals and to collateralize against the value of payable positions. As detailed previously, many legal and operational requirements are needed to ensure the realization of collateral in a timely fashion. If this legal and operational uncertainty continues, conducting business with highly rated credits is likely to constitute a more efficient means, for the credit sensitive, of gaining comfort against the risk of default loss.

Designers of new DPCs look back to previous structures, but may not reproduce them exactly. The future is likely to see new products such as credit derivatives, indeed possibly credit derivative vehicles, as well as hybrids, which will blend the strengths of the different approaches described in this article. We have seen efforts to bring together termination and continuation characteristics into a single vehicle. An example of this would be a continuation DPC which offers two-way termination provisions. In this structure, both parties to an OTC contract agree that, should the credit rating of one of the parties fall below a specified trigger, the other party would have the option to terminate the contract and settle at value.

The guarantee structures rated to date also are suggestive of future forms. The guarantee structure organizes credit enhancement to benefit third-party counterparties contracting in a program transacted externally from the DPC, thereby detaching the function of intermediation from the function of financial support provision. The program concept establishes some flexibility in shaping a class of beneficiaries, and opens up many possibilities in terms of the source and form of credit support for derivative transactions in future credit-enhanced structures. Currently, three DPCs, Credit Lyonnais' CLDP, Lehman Brothers LBDP, and Sakura PrimeSM, supplement credit enhancement by means of an insurance policy.

Financial institutions that establish DPCs face varying degrees of governmental oversight and control. Regulatory involvement may be particularly acute when the DPC sponsor is a bank. To date, regulators from Australia, France, and Japan have permitted particular banks under their control to establish DPCs or DPC-enhanced programs. For example, SBCM Derivative Products, sponsored by Sumitomo Bank, was incorporated in London under English law, necessitating the regulatory involvement of British as well as Japanese authorities.

The structure of existing DPCs also may evolve. Many DPCs regularly consider adapting their structures to the needs of potential counterparties by broadening the scope of products that may be written and transacted. In certain cases, approved products and indices have been expanded from interest rate and foreign-exchange derivatives into a range of equity products. An example of this process of extension was the approval given to Goldman Sach's GSFP to transact in certain commodity derivative products.

Finally, the evolution of DPCs may turn out to be beneficial for the derivative industry as a whole. Large losses in derivative transactions incurred by prominent nonfinancial corporations in recent years have raised governmental concerns regarding standards for management and disclosure of the derivative positions transacted by public companies. The previous collapse of Barings, and other incidents, have brought to the fore concerns about market risk and operational procedures even among experienced derivative trading institutions. A range of proposals for addressing these problems has been discussed, including the use of daily mark-to-market monitoring, simulation-based risk modeling, and the regular generation of reports regarding the position of the derivative portfolio.

These practices are all prominent features of the rated DPCs, which have voluntarily embraced these practices to enhance risk mitigation and control and gain market acceptance. In many ways, therefore, DPCs may be viewed as models for shaping market practice, reflecting the careful work that has gone into the construction and operation of these vehicles.

Note: Much of the material in this article has been drawn from Reza Bahar and Mark Gold, “Structuring Derivative Product Companies: Risk and Safeguards” in Derivative Credit Risk: Advances in Measurement and Management, published by Risk Publications.

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Structured Investment Vehicles

Structured investment vehicles (SIVs) have been operating in the U.S. and European debt markets for several years. As early as 1989, Standard & Poor's rated the first SIV, Alpha Finance Corp., with Beta Finance Corp. following shortly thereafter. Many others have since been rated, including Ascot Capital, Sigma Finance, Asset-Backed Capital, and Centauri Corp, Dorada Corp, K2, Links, Five, Abacas. Each has its own particular traits, but the concept behind the structures is the same: they are credit arbitrage vehicles.

The purpose of an SIV is to take advantage of pricing differentials of securities in both the U.S. and European markets, while maintaining a sufficiently conservative capital charge methodology and market risk-neutral profile to merit an 'AAA'/A-1+' credit rating. This article will clarify the criteria that Standard & Poor's applies to these vehicles in the rating process and further will explain the structures rated.

In rating an SIV, analysts use criteria developed in the Structured Finance Group, the Derivative Ratings Group, and the Market Value Group. These criteria sources are necessary because of the SIV's general reliance on operating within tight boundaries according to specific guidelines and their purchase and sale of debt securities and derivatives transactions. Additionally, the vehicles require specific elements of the three criteria areas to support aspects such as liquidity, enforcement, and asset valuation (*see chart 1*).

Legal Requirements

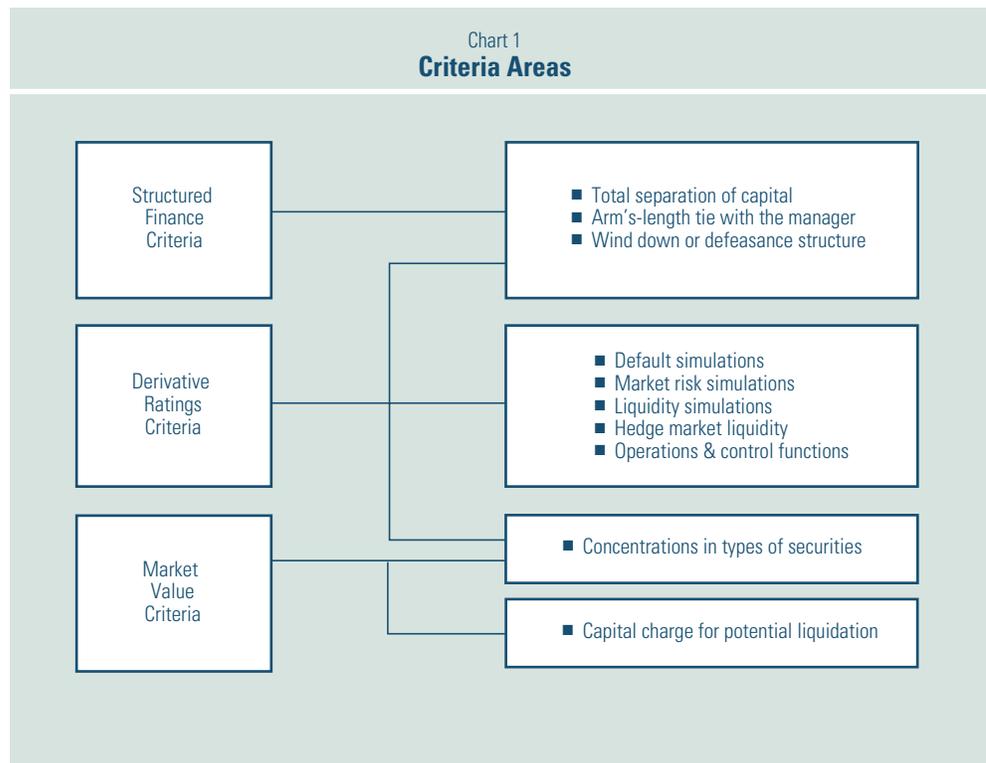
The separateness of an SIV is important because the vehicle's assets must not be considered the property of any other entity, whether sponsor or investor. In many cases the vehicle's capital is raised from private investors through the issuance of capital notes or equity. However, there are other methods, such as wholly owned equity purchased by the sponsoring entity. The selection of the appropriate form of capital is entirely up to the sponsor; the sole requirement is that the capital be the property of the vehicle. On an ongoing basis, capital may not be redeemed, nor any

dividends paid, if it will cause the structure to fail any of its tests or breach any limits.

In enforcement, the capital securities may not be redeemed nor dividends on them be paid until the last tranche of senior debt and subordinate debt is retired. Other financial support for the vehicle has taken the form of liquidity facilities issued by banks or financial institutions rated 'A-1+' by Standard & Poor's. These are senior debt obligations of the vehicle and not credit support. In enforcement, the liquidity providers rank pari passu with the note holders and the derivative counterparties.

The separateness of the vehicle from its manager also should be established to clarify the roles relating to the control of the vehicle's investment, issuance, and administration. The manager upon whom the vehicle relies for investment advice and execution should not be confused with the owner of the vehicle. The vehicle's owners will either be a charitable trust, investors in the SIV, the SIV's sponsoring entity, or a combination of the latter two. The manager generally has been affiliated with the sponsoring entity.

The manager's primary function is to make investment decisions that fall within the SIV's preestablished guidelines and limit structures. None of these relationships should be considered as moving the burden of payment away from the SIV. The services provided by the relevant parties to the vehicle should be paid at a rate commensurate with market practice, at arm's length. The function of the manager's internal control is to verify that these guidelines and limit structures are complied with.



Because all SIV counterparties are secured parties in the event of enforcement, Standard & Poor's requests legal opinions from the investment manager's counsel as to the legality of the structure's documentation, the pledging and security interest in the vehicle's assets, and the security trustee's ability to access these assets. The assets must be in a segregated account with no co-mingling. The custodian's credit rating must be at least 'A-1'.

Netting also must be analyzed under relevant jurisdictions and across different products. At this time Standard & Poor's does not recognize cross-product netting, that is, swap exposure and securities exposure, in these structures. Standard & Poor's considers the U.S., the U.K., Australia, the Cayman Islands, Canada, France (under specified conditions), Germany, Ireland (under specified conditions), Sweden (under specified conditions) and Switzerland as "netting jurisdictions," for which Standard & Poor's would not require opinion of counsel. Other jurisdictions are currently under review.

Board Requirements

The vehicle's owners, through its board of directors, will determine if the SIV is performing as it should and seek to incorporate changes wherever necessary. If the vehicle is wholly owned by the sponsor, the board should have at least two directors that are not currently, and have not been for at least one year, affiliated with, or employed by, the sponsor. These external directors would have to unanimously approve any resolution for the voluntary bankruptcy filing of the SIV or any of its subsidiaries. Unanimous board approval also would be required for any resolutions relating to changes to the SIV or its management agreements that may result in an adverse impact on the rating of its outstanding debt securities.

An SIV is generally structured so that its capital adequacy and potential market risk are measured against preestablished limits, the passing of which allows the vehicle to continue to issue new debt and to continue to operate. If capital-adequacy limits or market-risk limits are breached without being cured within a predefined period of time, the vehicle would draw down all of its liquidity facilities and enter into enforcement. An enforcement is activated by the vehicle's trustee crystallizing its fixed charge over all the SIV's assets and reorganizing them such that all liabilities are repaid in a timely manner from asset sales or asset maturities.

In some cases, medium-term note holders of the SIV will have the option to redeem their securities following the occurrence of an event triggering enforcement. These obligations, along with the drawdowns on the liquidity facilities, would become part of the short-term or first year's pool. The support for all the pools would be placed in a residual pool, a proportional share of which is available to each of the other pools, both senior and subordinated. Should the need arise to call on the residual

pool for a subordinated pool shortfall, however, it may be used only if the defeasance manager feels that there are still sufficient funds to meet all senior obligations. The pools are constructed so that the assets supporting each pool's liabilities are sufficiently capitalized at a high rating level and are sufficiently diverse.

Limits and Tests

The capital adequacy requirements and leverage restrictions that these vehicles adhere to are itemized in the vehicle's individual contracts with its various providers. The particular treatment of each asset class and hedge instrument should be itemized in the manager's operating manual. The manager also should establish reserves for extraordinary circumstances. The limits and tests that are included in the itemization of the capital-adequacy requirement are designed to cover the following series of different risks:

- Credit risk associated with each obligor (assets and hedges),
- Potential losses arising from changes in currencies and interest rates,
- Potential default of the SIV for lack of liquidity, and
- Marginal cost of liquidating certain assets or hedges.

The capital adequacy charge percentages may be preestablished in static matrix form taking rating, tenor, and concentration into consideration. Similarly, a risk model often is used to calculate the potential losses to the SIV arising from obligor defaults. This model should be designed to generate a large number of market paths to assess the potential credit exposure of the portfolio of assets and hedges through to their final maturity. These paths should be generated by incorporating the pricing variables' historical volatilities and correlations.

Using these simulated values at each point over a simulation time horizon and incorporating the appropriate netting assumptions, one can calculate the potential credit exposure to each obligor. The model also should simulate defaults based on the ratings of the obligors and the associated default probability derived by Standard & Poor's default research. Given the credit exposure to each obligor and the simulated default status, credit losses over all obligors may be aggregated. Thus, for each random evolution of the market variables and counterparty default, a cumulative credit loss can be obtained. The simulated losses then can be used to construct an empirical distribution of potential credit losses. The required allocation of capital would correspond to a stressed level of potential credit losses at a high level of statistical confidence.

The allocation of capital derived from the default simulation exercise provides the amount of capital required to support the vehicle against credit losses. Further allocations of capital will be needed for other aspects of the SIV. Beyond the simulation methods used to determine potential default cost, the vehicle must maintain low

concentrations of exposures to its obligors. In the past, these concentration limits have been relative to the size of the total portfolio. Standard & Poor's current position on concentration is that the SIV should not be exposed to any obligor, regardless of rating, for more than its capital. In addition to portfolio-based concentration limits, the vehicle also should be able to absorb the default of its largest single 'AAA' or lower-rated obligor, its two largest 'AA' or lower-rated obligors, three largest 'A' or lower-rated obligors, and five largest 'BBB' or lower-rated obligors.

Other Simulations

Among the other simulations required to analyze the vehicle, the market risk simulations provide the verification of the vehicle's necessary representation of market neutrality. These exercises are focused on changes to the term structure of interest rates and changes to foreign-exchange rates. The threshold for total portfolio sensitivity to parallel or incremental changes in these rates for all the 'AAA/A-1+' rated SIVs has been extremely low relative to the change imposed.

The rationale for the vehicle's imposition of this standard of sensitivity is twofold. First, the vehicles mark their positions to market daily, and, as a result, the realization of losses due to changes in interest or currency rates could cause the vehicle to fail its capital-adequacy test and be forced into an enforcement. Second, the vehicle provides value to its owners by managing a portfolio of credit risk and not by taking positions in the interest-rate or currency markets. The risk that the portfolio is left with is that of a fall in the price of a security held in the portfolio relative only to that obligor's cost of funds and its credit spread.

The liquidity simulations were introduced into the vehicles to provide information about the vehicle's internal liquidity relative to its liabilities. Standard & Poor's considers this important because the vehicles fund the purchase of longer-term assets with the issuance of commercial paper. Medium-term notes also can be issued, but these are not necessarily maturity-matched to asset purchases. Clearly, this creates the risk of a liquidity failure on the part of the SIV. The liquidity simulation should look at each day's inflows and outflows in five-business-day intervals on a rolling, daily basis to determine the vehicle's peak cumulative potential cash need over each interval.

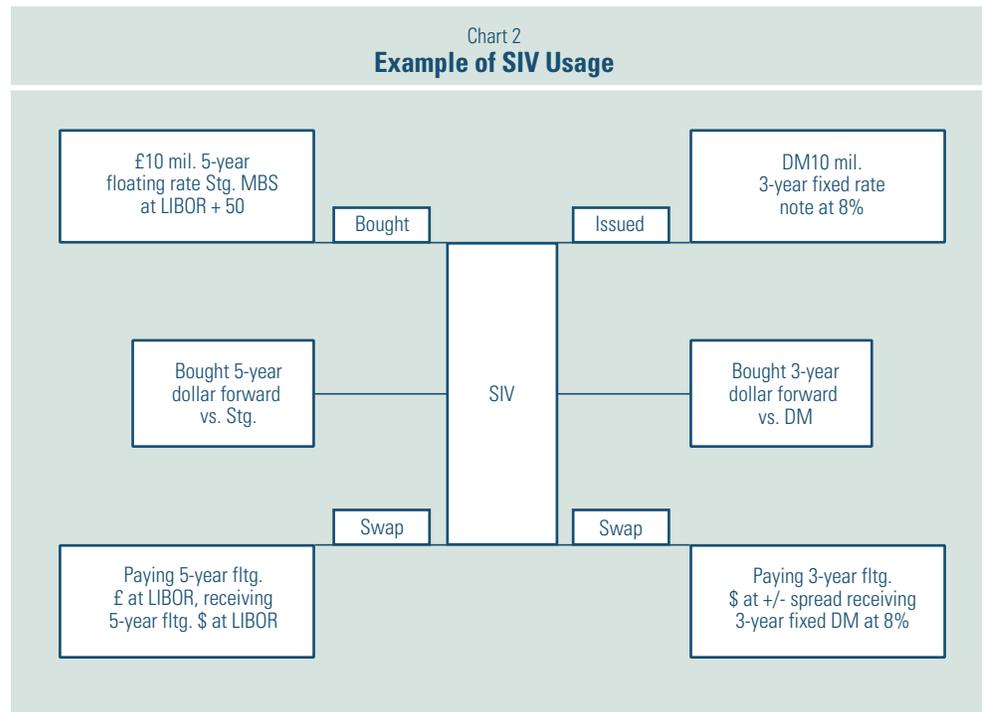
The methods used to address this potential need have been short- or medium-term liquidity facilities from 'A-1+' or 'AAA' rated financial institutions and the establishment of asset-based liquidity for certain assets that satisfy the vehicle's liquidity criteria. These criteria would include a credit rating of at least 'A-1+' and be compared with Standard & Poor's own market value criteria.

The vehicles assembled and operating in the markets rely to varying degrees on the derivatives markets for hedging tools on the asset and liability sides of the balance sheet. There are many possible uses, assuming all obligors are ‘AAA’ rated (see chart 2).

The advanced use of derivatives for hedging all exposures back to a single currency or a floating-rate cost of funds allows the vehicle to maintain a market risk-neutral position while taking advantage of pricing inequalities in the markets relative to its own cost of funds. The vehicle’s challenge is to provide sufficient capital allocations for the potential unwinding of the above hedge and asset positions to perform on its liabilities.

In the above example, if the three-year liability comes due with its accompanying foreign-exchange forward contract, the vehicle must raise money to pay the maturing liabilities either through new debt issuance or liquidation of the asset position and its accompanying hedges. For the vehicle to be able to accomplish this latter maneuver without incurring unanticipated losses, capital must be sufficient to cover the potential liquidation of the assets and hedges. This capital allocation becomes particularly important in the event of an enforcement because the potential for unwinds, sales, and new purchases of securities and hedges for various pool allocations could lead to substantial transaction costs.

Considering the potential for enforcement, the amount of the capital charge for potential liquidation on each asset might easily outweigh the capital allotted for



default, since the default history on rated securities necessarily is more stable than investors' relative desires for certain securities. The identification of the appropriate factor for each asset to any degree of precision would be extremely different. Standard & Poor's has developed overcollateralization factors for market-value structures that rely on the total liquidation of the portfolio to pay the liabilities, but these factors assume that the portfolio is subject to interest rate and currency moves as well as investor preference.

This is not the case in an SIV; the vehicles take very conservative discounts in case assets have to be liquidated in a short time. These discounts are not, in most cases, as conservative as Standard & Poor's market-value criteria, but they are informed by those criteria in terms of the data collected from the markets that the criteria address. As a further measure of prudence, the vehicles hold themselves to the purchase of asset where a firm price quote can be obtained from a Standard & Poor's approved pricing service. In cases where a pricing service does not carry the specific security, live bid quotes from dealers are obtained. The use of a substantial charge for potential liquidation, formally recognized pricing services, and live dealer quotes give Standard & Poor's confidence that sufficient capital is reserved for each security.

Asset-Class Limitation

The vehicle's sensitivity to liquidity and price volatility of a security, or sector securities, is addressed in terms of diversification limits and requirements. These limits originally were confined to industry sector and geographical area, excluding more global sectors such as securitized debt. More recent determinations by Standard & Poor's have caused the SIVs to further limit their exposures by asset class to eliminate as much as possible the risk to each class of asset. Standard & Poor's recognizes the difficulty in determining the applicability of one security based on its asset-class distinction over another. However, two important premises must be defined. First, true diversification is recognized as prudent risk management; second, a definitive statement of each asset class' applicability or liquidity can be made only after sufficient data covering several economic cycles on each asset class have been analyzed.

When assessing an SIV, one must take into account the issue of control. The SIVs are subject to the same types of abuse as any dealer in the securities and derivatives market. A vehicle's control functions therefore are critical to its 'AAA' status. Internal and external controllers must verify all aspects of the structure on a regular basis. Standard & Poor's receives weekly summary reports from the vehicles, as well as more detailed portfolio disclosures (usually monthly). These reports must come under the internal controller's signature, and regular (weekly, monthly, or annual) verification of the structures also must come under the external auditors' signature.

The securities markets are continually evolving new and more efficient methods of transfer, risk management, and securitization. After a suitable period of evolution and testing, these new techniques will become the market standard. As with any other highly rated quasi-operating company, an SIV will want to use these new methods to manage its risks more efficiently. This evolution will be possible for the SIV once the techniques have become market standard and an adequate performance history can be observed. The vehicles therefore will continue to evolve, although at a necessarily slower pace than that of the rest of the market.

credit spreads over the life of its portfolio. Abacas has been constructed to be rated ‘AAA/A-1+’ for senior secured obligations and ‘A’ for senior subordinated secured obligations by Standard & Poor’s, resulting in portfolio limitations on various categories including rating concentration, asset composition, and remaining maturity. Coupled with these limitations, Abacas must also analyze the portfolio on a daily basis to ensure that it is satisfying minimum tests on liquidity, leverage, capital adequacy, interest rate risk, and foreign exchange risk.

Abacas is a Cayman Islands limited liability company that issues European commercial paper and medium-term notes. Abacas Investments LLC (Abacas LLC) a Delaware limited liability company, is a subsidiary of Abacas and was formed for the purpose of issuing commercial paper and medium-term notes in the U.S. domestic market on Abacas’ behalf. Abacas unconditionally and irrevocably guarantees the obligations of Abacas LLC.

III Offshore Advisors (III) is a Nevada limited liability company and has been contracted as advisor to Abacas. Quadrant Capital Ltd. has been contracted as manager to Abacas and Abacas LLC. Bear Sterns Structured Services Inc. has been contracted as standby servicer. Bear Sterns Structured Services will be receiving and reviewing reports to verify that Abacas operates within the specified limits and will step in as manager if Quadrant can no longer perform its duties as manager.

Standard & Poor’s concentrated its analysis of Abacas in five principal areas:

- Asset and liability portfolio composition,
- Market risk sensitivity,
- Leverage and capital adequacy,
- Liquidity, and
- Defeasance.

Portfolio Composition

Abacas uses the funds raised by the debt programs to purchase a portfolio of securities in various currencies. Currency and interest rate exposures are then hedged either by the use of derivative transactions or by issuing debt with the same currency and interest profile. Abacas has the option to match fund part of its portfolio.

All securities and derivative counterparties must be rated at least ‘AA-’ at the initiation of the transaction. A minimum of 75% of the portfolio must be in ‘AAA’ rated assets and no emerging market debt may be held. Up to 100% of the portfolio may be invested in ABS. Diversification rules must be strictly observed. The securities that Abacas may purchase are subject to category limits, and each of these categories is further divided into subgroups. Each subgroup is subject to individual and geographic concentration limits and maturity constraints. Derivative counterparties are also subject to these limits.

Breach of certain exposure limits potentially requires the value of such excess to be treated as an ineligible asset for capital purposes. All of the transactions in the portfolio that are not match funded are marked to market on a daily basis. Match-funded transactions are priced at principal. All exposures (whether gross or net, depending on the jurisdiction) are then calculated, subject to the above mentioned limits.

Market Risk

When Abacas purchases a security, it is done with a view to holding that security to maturity. To eliminate market risk, Abacas employs active asset and liability management and transacts in derivatives. The risk management policy is implemented by using swaps, options, and forwards across various interest rate and currency bases to hedge all mismatches between assets and liabilities. For example, a fixed rate liability could be converted to a synthetic floating rate liability by executing an interest rate swap. Market risk neutrality is tested for both interest rate and currency exposures.

The tolerance for mismatch is very low. The impact of a single basis point parallel shift in the yield curve may not cause more than a 0.05 basis point change in portfolio value. Moreover, the impact of shifts to the individual points on the yield curve on portfolio value is also tested. Similarly, a 1% change in the value of all currencies versus the U.S. dollar may not cause the change in portfolio value to exceed 0.5 basis point. A similar test is carried out to include the senior subordinated notes, but with a different tolerance threshold. These tests are conducted on a daily basis, and any breach has a five business day cure period.

Leverage and Capital Adequacy

Abacas must reserve capital against potential losses in connection with the investments and derivative transactions in the portfolio. Abacas uses a matrix to determine the amount of capital it must reserve for each security it purchases. This matrix incorporates credit rating and remaining maturity of the security purchased. A different table is used when calculating the amount of capital to be reserved for each derivative transaction. This table incorporates capital charges based on a variety of criteria, including counterparty rating, transaction type, and currency. An adjusting factor is applied on the above methodology for match funded assets. These capital charges are charged on the mark to market value of the derivative or security or the principal value in the case of a match funded security. Abacas performs capital adequacy tests for both senior and senior subordinated capital requirements daily. Any breach of these tests has a five-business-day cure period.

To monitor its leverage ratios, Abacas is subject to specific capital gearing ratios for both senior and senior subordinated obligations, which must also be tested on a daily basis. Any breach of these ratios, uncured within a five-business-day period, results in Abacas not being permitted to increase its aggregate senior obligations (in the case of a senior breach) or its senior and subordinated obligations (in the case of a subordinated breach), until the breach has been rectified.

Liquidity

Abacas purchases securities of varying maturities based on their value to the structure. To the extent that the assets and liabilities are not maturity matched, Abacas is exposed to refinancing risk. It is important that Abacas has the ability to repay all of its creditors, to the extent that it is obligated, in full and in a timely manner. Thus arises the need for a limit on the amount of debt that can mature in specific units of time. These limits require management of liquidity requirements and coverage in the event of liquidity failure. The limits specifically address the maximum net cumulative cash outflows that may be permitted in any one, five, 10 and 15 business day period.

The cash outflows are calculated on a daily, forward rolling, cumulative basis, and the peak is chosen in each of the four test periods. This peak must then be within the net cumulative outflow limits. Liquidity resources available to Abacas to cover these limits take on three forms: committed bank lines from 'A-1+' rated financial institutions, breakable deposits with 'A-1+' banks and specific liquidity eligible assets. The specific assets may be highly rated government securities, supranational, financial institution, corporate, and asset-backed securities specifically earmarked and prudently haircut so that the remaining value reflects the potential liquidated value should they have to be sold on short notice to meet a liquidity requirement.

Each day, Abacas must test its liquidity resources against its net cumulative outflow limits. Any breach must be cured within five business days. Any breach that occurs in the next 30 business days has a three-business-day cure period. Currently, Abacas has committed liquidity facilities of US\$100 million available to it from a small group of 'A-1+' rated banks.

Defeasance

Abacas has contracted with Chase Manhattan Trustees Ltd. to serve as the security trustee. Should an enforcement event occur, the security trustee shall enforce the security constituted by the security agreement and realize its interest over the collateral for the benefit of all the secured creditors (including senior and senior subordinated noteholders, liquidity providers and derivative counterparties). Enforcement events include:

- Failure without cure of the capital adequacy tests,
- Failure without cure of the liquidity tests,
- Failure without cure of the interest rate sensitivity tests,
- Failure without cure of the exchange rate sensitivity tests,
- Failure to repay any liquidity provider when due within the applicable grace period,
- Failure to repay any of the noteholders when due within the applicable grace period,
- Failure to repay any derivative counterparty when due within the applicable grace period,
- Failure to retain a rating of at least 'AA-' for the senior medium-term notes issued by Abacas and Abacas LLC,
- Failure to retain a rating of at least 'BB-' for the senior subordinated medium-term notes issued by Abacas and Abacas LLC, and
- Failure to retain a rating of at least 'A-1' for the short-term notes issued by Abacas and Abacas LLC.

Should any of the above events occur, an enforcement event will ensue. The security trustee is then required, acting in the interests of all secured creditors, to realize its lien over the security and, over the next 60-day period, to organize the portfolio into a series of asset pools based on credit quality and remaining maturity. Available liquidity lines are fully drawn down if necessary to meet any immediate liquidity requirements.

The pools are set up in tranches of one year, extending out to the final maturity of the latest maturing obligation. Each pool is matched with assets, hedges, and liabilities all maturing within the applicable year. There are senior obligation pools, senior subordinated obligation pools, and a residual pool that will be allocated pro rata first to the senior pools and second to the senior subordinated pools. Any residual after all creditors, both senior and subordinated, are repaid in full, will be paid to the junior noteholders.

It is entirely at the security trustee's discretion, acting in the best interests of the secured noteholders, to determine what assets and derivatives to dispose of and what transactions to allocate to which pools (once they meet the individual pool requirements). However, each pool must be formed in accordance with certain minimum criteria and at the appropriate level of credit quality. As each pool matures, the security trustee repays the liabilities as they come due with the proceeds of the assets allocated to that pool. If there are any asset defaults over the life of a particular pool, the pro rata share of resources of the residual pool will be called upon to meet any shortfall in the obligation.

Surveillance

To ensure that Abacas adheres strictly to its operating procedures and limit structure, it has applied two layers of controls for ongoing surveillance. The first is a weekly compliance report generated by the internal control of Quadrant Capital. This report is inspected by Abacas' board of directors, and by Bear Sterns Structured Services Inc. The second is a monthly compliance report, prepared by Abacas' external auditors, which reviews each week's portfolio activity for compliance with the limit structure then in place for Abacas. The auditor verifies that all weekly reports are accurate representations of Abacas' activity.

Ascot Capital Ltd.

Analysts:

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Credit Rating

AAA/A-1+

Outstanding Rating(s)

Counterparty credit	AAA/A-1+
Senior secured	AAA
Commercial paper	A-1+

Credit Rating History

Dec. 1, 1995 AAA/A-1+

Subsidiaries

Ascot Capital Corp.	
Commercial paper	A-1+

Rationale

The ratings for Ascot Capital Ltd.'s U.S. and European commercial paper and euro medium-term note programs are based on Ascot's method of structuring leverage and diversification limits into a bankruptcy remote entity with sufficient capital support to provide it with the capability to perform on its obligations in full and on a timely basis.

Ascot uses the funds raised through the above program issuances, together with its capital, to purchase a portfolio of securities rated at least 'BBB-' by Standard & Poor's. The structure defines maximum leverage of its capital in terms of the amount of capital reserve it must maintain for each asset it purchases based on the asset's credit rating. Ascot's capital must equal, or exceed, the aggregate amount of these reserves for it to continue to issue new debt. Additionally, asset class concentration limits, single obligor concentration limits, and maturity limits are included in the management of the vehicle to ensure a prudent portfolio profile. The structure's maintenance and its administrative duties are provided for by its manager, the Industrial Bank of Japan Ltd. ('BBB+/A-2'), New York Branch (IBJ).

Profile

Ascot, a structured investment vehicle, was created to take advantage of pricing differentials in the credit markets. Ascot's buy-and-hold strategy allows it to realize these differentials throughout the life of its portfolio. For the structure to achieve maximum profitability, it must be able to fund itself at the lowest cost possible. To achieve this, Ascot has been constructed to be rated 'AAA/A-1+' by Standard & Poor's; this is the primary reason for its limitations on asset type, maturity, issuer concentration, and credit quality. Ascot is owned by a charitable trust in the Cayman Islands, with additional capital provided through the issue of preference shares.

The risks upon which Standard & Poor's concentrated its analysis were those of portfolio credit quality, along with internal and external liquidity. The assumptions of near-zero interest rate and currency risk have been verified through the analysis of Ascot's hedging strategy, and this will be monitored on a regular basis. The company hedges all risk, whether on the asset or liability side, back to U.S. dollar LIBOR, or other benchmark indices as appropriate. The hedging structure is tested on a daily basis by portfolio scenario analysis, which shows the change in value of the portfolio for parallel and incremental shifts in interest rates, and for a significant change in foreign-exchange rates for each currency to the U.S. dollar. The hedging strategy adds a further segment of analysis to credit losses and liquidity of securities markets, concerning the liquidity in the over-the-counter (OTC) markets where the hedging products are traded.

Credit

Ascot uses a table to determine the amount of capital it must reserve for each security it purchases based on the security's credit rating. Ascot arrived at the capital reserve levels by using multiples of default experience as defined in Standard & Poor's default study. These levels are based solely on credit quality and are as follows:

- 'AAA', 10%;
- 'AA', 15%;
- 'A', 20%;
- 'BBB', 25%; and
- 'BB', 30%.

Ascot has imposed strict limits on the amount of any one particular asset class that it will purchase. These limits impose a greater diversity of asset type in the portfolio. The limits are on concentrations in the industry sector for corporate obligors and on concentrations of specific asset types for securitizations.

Liquidity

Internal Liquidity

Ascot's investments are restricted to certain asset classes and certain ratings so that assumptions of market liquidity may be supported. But the liquidity of the securities alone would not be sufficient to support Ascot's rating. It is important for Ascot to be able to make full and timely payment on all of its obligations. The company funds itself in the short- and medium-term markets, purchasing securities of varying maturities based on their value to the structure. Therefore, the need for a limit on the amount of debt that may mature in any one predetermined unit of time is essential in managing the risk of liquidity failure.

Currently, Ascot's limit for debt maturing in any one week is US\$275 million. This limit is derived from the different sources of liquidity that Ascot has built into its structure. Internally, the limits create the incentive for Ascot's managers to have the portfolio of assets fund much of its maturing liabilities. Where it is more advantageous to rely on other sources to meet these limits, Ascot has earmarked a portion of its portfolio as liquidity eligible. This portion is limited to highly rated sovereign, supranational, and corporate debt securities. Furthermore, Ascot discounts these securities significantly to cover the cost of liquidation on short notice. Standard & Poor's is satisfied by the internally structured liquidity position and takes some comfort from the asset-based liquidity. However, it would not be sufficiently conservative to assume that these sources alone would provide 'AAA' certainty in meeting the structure's liquidity needs.

External Liquidity

To provide further strength to its structure, Ascot has engaged an aggregate of US\$275 million in liquidity facilities: US\$150 million from Commerzbank AG, rated 'A-1+' and US\$125 million from Lloyds Bank PLC, rated 'A-1+'. These facilities are designed to make cash available to Ascot on an immediate basis to pay maturing liabilities. The facilities cover 364 days and will be reaffirmed every six months to always extend beyond the longest-dated tranche of commercial paper outstanding. Ascot has been designed such that its cumulative net cash outflows on a rolling daily basis are calculated daily for any one-week and two-week period throughout the life of the portfolio. Ascot's available liquidity to cover the largest one-week requirement over the entire horizon must be covered by liquidity facilities from 'A-1+' banks. The largest two-week requirement over this horizon may be covered by bank lines and asset-based liquidity. Standard & Poor's takes comfort in the completeness of Ascot's analysis of so many possible cash outflow combinations.

OTC Hedges

Because of the manner in which Ascot is structured, the use of OTC derivative contracts may prove to be a significant factor in the maintenance of Ascot's market risk-neutral profile. Ascot's swap and option activity is likely to be spread over a wide range of currencies and indexes. This activity will be effective in managing market risk, but it is likely to incur, at times, substantial credit risk and, potentially, event risk because of the possibility of an enforcement event.

These risks caused Ascot to analyze the amount of capital that should be reserved for hedge contracts in terms of potential credit losses and recontracting or decontracting costs. Ascot calculates the capital charge for its hedges based on the net/gross position, as applicable, using discounts relating to the creditworthiness of the counterparty obligor. Ascot also reserves a bid/ask spread amount per hedge contract designed to cover the liquidation cost of each contract. The amount is adjusted for contract type, maturity, and index. Ascot's risk with hedges is similar to that of securities: defaults will cause significant losses, and should an enforcement event occur, the company must have sufficient reserves to liquidate its holdings. This method of capital reserve for OTC hedge instruments is necessary for the structure's financial support.

Enforcement

The final critical aspect of Ascot's structure is its treatment of the potential for enforcement. The notion of enforcement in this structure is best described as the activity involving the trustee, the liquidity facility provider, and the debt holders, vis-à-vis the portfolio subsequent to the occurrence and continuation of an enforcement event. Should an enforcement event occur and not be cured within five business days, the trustee would enforce his or her charge over the portfolio as collateral for all secured creditors; namely, debt holders, liquidity providers, and hedge counterparties. The trustee would draw down the necessary liquidity from the liquidity banks to pay the immediately maturing commercial paper.

The remaining tasks for the trustee would be to create defeasance pools in which liabilities, assets, and hedges would be grouped by maturity. A pool would be constructed for each of the following years in which Ascot's remaining liabilities mature. The credit support for each of these pools is contained in an equity, or residual, pool. The capital reserved for each asset will be sufficient to support these pools through to final maturity, in Standard & Poor's view. The enforcement events are:

- Failure without cure of the leverage test,
- Failure of the capital adequacy test,
- Failure without cure of the interest rate sensitivity test,

- Failure without cure of the foreign-exchange sensitivity test, and
- Failure without cure of the liquidity test.

Surveillance

Ascot's investment in securities will be within the investment parameters described earlier and monitored closely by IBJ's internal control function. Ascot's board reviews all aspects of its portfolio and receives all risk reports on a daily basis. Moreover, Standard & Poor's receives details of the Ascot portfolio on a regular basis. The structure of Ascot, its managers, and its required capitalization give Standard & Poor's comfort that Ascot will be capable of performing on its obligations in full, on a timely basis.

Asset Backed Capital Ltd.

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Credit Rating AAA/A-1+	Credit Rating History May 31, 1996	AAA/A-1+	
Outstanding Rating(s)	Subsidiaries		
Counterparty credit	AAA/A-1+	Asset Backed Capital Finance Inc.	
Commercial paper	A-1+	Senior secured	AAA
Senior secured	AAA	Commercial paper	A-1+
Subordinated	A		

Rationale

The ratings for Asset Backed Capital Ltd.'s (ABC Ltd.) senior U.S. and European commercial paper and medium-term note programs and its senior subordinated notes are based on ABC Ltd.'s method of structuring its investment portfolio within strict leverage, credit quality, and diversification limits, with sufficient capital support to provide it with the capability to perform on its obligations in full and on a timely basis. The ratings are secured because they rely on the portfolio of assets to secure the claims of noteholders and derivative counterparties. Should an enforcement event occur (*see Defeasance section*), the security trustee will enforce its security interest in the asset portfolio, and manage and liquidate the assets as required, to repay all obligations as they become due.

Profile

As a structured investment vehicle, ABC Ltd. was created to take advantage of credit spread differentials. It manages a portfolio of high credit quality assets and liabilities, while maintaining a market risk-neutral position, which allows it to pick up those credit spreads over the life of its portfolio. ABC Ltd. has been constructed to be rated 'AAA/A-1+' for senior secured obligations and 'A' for senior subordinated

secured obligations by Standard & Poor's. As a result, portfolio limitations on various categories including rating concentrations, asset compositions, and remaining maturity must be observed. Coupled with these limitations, ABC Ltd. must also analyze the portfolio on a daily basis to ensure that it is satisfying minimum tests on liquidity, leverage, capital adequacy, interest rate risk, and foreign exchange risk.

Asset Backed Capital Ltd. is a Cayman Islands limited liability company that issues euro commercial paper and medium-term notes. Asset Backed Capital Finance Inc. (ABCF Inc.) is a Delaware subsidiary of ABC Ltd. and was formed for the purpose of issuing commercial paper and medium-term notes in the U.S. domestic market on ABC Ltd.'s behalf. ABC Ltd. unconditionally and irrevocably guarantees the obligations of ABCF Inc. Asset Backed Capital Management Ltd. (ABCM Ltd.), a Cayman Islands limited liability company, has been contracted as investment manager to ABC Ltd. Quadrant Capital Ltd. has been contracted as advisor to ABC Ltd. and ABCM Ltd. Credit Suisse First Boston and Bankgesellschaft Berlin AG are attorneys-in-fact and have a supervisory role in the management of ABC Ltd. and ABCF Inc.

Standard & Poor's concentrated its analysis of ABC Ltd. in five principal areas:

- Portfolio composition on both the asset and liability side,
- Market risk sensitivity,
- Leverage and capital adequacy,
- Liquidity, and
- Defeasance.

Portfolio Composition

ABC Ltd. uses the funds raised by the debt programs to purchase a portfolio of securities in various currencies, which, if necessary, are then hedged with derivative transactions to bring all obligations back to floating-rate exposures. All securities and derivative counterparties must be rated at least 'BBB-' at the initiation of the transaction. Portfolio diversification rules must also be strictly observed. The securities that ABC Ltd. may purchase are subject to category limits, and each of these categories is further divided into subgroups. Each subgroup is subject to individual and geographic concentration limits and maturity constraints. Derivative counterparties are also subject to these limits. Any breach of any exposure limit requires the value of such excess to be treated as an ineligible asset for capital purposes. All transactions in the portfolio are marked to market on a daily basis, and all exposures (whether gross or net, depending on the jurisdiction) are then calculated.

Market Risk Sensitivity

ABC Ltd. uses the funds raised by the debt programs to purchase a portfolio of securities in various currencies, which, if necessary, are then hedged with derivative transactions to bring all obligations back to floating-rate exposures. All securities and derivative counterparties must be rated at least 'BBB-' at the initiation of the transaction. Portfolio diversification rules must also be strictly observed. The securities that ABC Ltd. may purchase are subject to category limits, and each of these categories is further divided into subgroups. Each subgroup is subject to individual and geographic concentration limits and maturity constraints. Derivative counterparties are also subject to these limits. Any breach of any exposure limit requires the value of such excess to be treated as an ineligible asset for capital purposes. All transactions in the portfolio are marked to market on a daily basis, and all exposures (whether gross or net, depending on the jurisdiction) are then calculated.

Leverage and Capital Adequacy

ABC Ltd. must reserve capital against potential losses in connection with the investments and derivative transactions in the portfolio. ABC Ltd. uses a matrix to determine the amount of capital it must reserve for each security it purchases. This matrix incorporates credit rating and remaining maturity of the security purchased. A different table is used, however, when calculating the amount of capital to be reserved for each derivative transaction. The table incorporates capital charges based on a variety of criteria, including counterparty rating, transaction type, and currency. These capital charges are charged on the mark to market value of the derivative or security and are calculated daily. In addition, ABC Ltd. performs capital adequacy tests for both senior and senior subordinated capital requirements. Any breach of these tests has a five business day cure period.

To monitor its leverage ratios, ABC Ltd. is subject to specific capital gearing ratios for both senior and senior subordinated obligations, which must also be tested on a daily basis. Any breach of these ratios, uncured within a five-business-day period, results in ABC Ltd. not being permitted to issue additional senior notes (in the case of a senior breach) or additional senior and subordinated notes (in the case of a subordinated breach), until the breach has been rectified.

Liquidity

ABC Ltd. funds itself in the short- and medium-term markets, purchasing securities of varying maturities based on their value to the structure. To the extent that the assets and liabilities are not maturity matched, ABC Ltd. is exposed to refinancing

risk. It is vitally important that ABC Ltd. has the ability to repay all of its creditors, to the extent that it is obligated, in full and in a timely manner.

Thus arises the need for a limit on the amount of debt that can mature in specific units of time. These limits require the effective management of liquidity requirements and coverage in the event of liquidity failure. The limits specifically address the maximum net cumulative cash outflows that may be permitted in any one, five, 10, and 15 day period. The cash outflows are calculated on a daily, forward rolling, cumulative basis, and the peak is chosen in each of the four test periods. This peak must then be within the net cumulative outflow limits.

The liquidity resources available to ABC Ltd. to cover these limits take on three forms: committed bank lines from 'A-1+' rated financial institutions, 'A-1+' breakable cash deposits and specific liquidity eligible assets. The specific assets may be highly-rated government securities, supranational, financial institution, corporate, and asset-backed securities specifically earmarked and prudently haircut so that the remaining value reflects the potential liquidated value should they have to be sold on short notice to meet a liquidity requirement.

Each day, ABC Ltd. must test its liquidity resources against its net cumulative outflow limits. Any breach must be cured within five business days, and any breach that occurs in the next 30 business days has a three-business-day cure period. Currently, ABC Ltd. has committed liquidity facilities of US\$200 million available to it from a small group of 'A-1+' rated banks.

Defeasance

ABC Ltd. has contracted with Chase Manhattan Trustees Ltd. to serve as the security trustee. Should an enforcement event occur, the security trustee shall enforce the terms of the security agreement and realize its charge over the collateral for the benefit of all the secured creditors (including senior and senior subordinated noteholders and derivative counterparties). Enforcement events include:

- Failure without cure of the capital adequacy tests,
- Failure without cure of the liquidity tests,
- Failure without cure of the interest rate sensitivity tests,
- Failure without cure of the exchange rate sensitivity tests,
- Failure to repay any liquidity provider when due within the applicable grace period,
- Failure to repay any of the noteholders when due within the applicable grace period, and
- Failure to repay any derivative counterparty when due within the applicable grace period.

Should any of the above events occur, an enforcement event will ensue, and the security trustee is then required, acting in the interests of all secured creditors, to

realize its lien over the security and, over the next 60-day period, to organize the portfolio into a series of asset pools based on credit quality and remaining maturity. Liquidity lines are fully drawn down if necessary to meet any immediate liquidity requirements.

Medium-term noteholders have 10 days to advise as to whether they wish to exercise their option to redeem their notes on the next interest payment date. However, if they choose not to exercise their option within this time frame, the note remains outstanding until its scheduled maturity date, and the liability is allocated to its respective pool.

The pools are set up in tranches of one year, extending out to the final maturity of the latest maturing obligation. Each pool is matched with assets, hedges, and liabilities all maturing within the applicable year. There are senior obligation pools, senior subordinated obligation pools, and a residual pool that will be allocated pro rata first to the senior pools and second to the senior subordinated pools. Any residual amounts that remain after all creditors, both senior and subordinated, are repaid in full, will be paid to the junior noteholders.

It is entirely at the security trustee's discretion, acting in the best interests of the secured noteholders, as to what assets and derivatives to dispose of and which transactions to allocate to which pools (once they meet the individual pool requirements). However, each pool formed must be within certain minimum criteria and at the appropriate level of credit quality. As each pool matures, the security trustee repays the liabilities as they come due with the proceeds of the assets allocated to that pool. If there are any asset defaults over the life of a particular pool, the pro rata share of resources of the residual pool will be called upon to meet any shortfall in the obligation.

Surveillance

To ensure that ABC Ltd. adheres strictly to its operating procedures and limit structure, it has applied two layers of controls for ongoing surveillance. The first is a weekly compliance report generated internally by Quadrant Capitals' internal control. This report is inspected by ABC Ltd.'s board of directors, and by Credit Suisse First Boston and Bankgesellschaft Berlin as attorneys-in-fact. The second is a monthly compliance report, prepared by the external auditors of ABC Ltd., which reviews each week's portfolio activity for compliance with the limit structure then in place for ABC Ltd. The auditor verifies that all weekly reports are accurate representations of ABC Ltd.'s activity.

Banc of America Financial Products Inc.

Analysts:

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Cristina Polizu, New York (1) 212-438-2576

Credit Rating

AAA

Credit Rating History

Sept. 26, 1996

AAA

Outstanding Rating(s)

Counterparty credit

AAA

Sovereign Rating

United States of America

AAA/Stable/A-1+

Rationale

The counterparty rating assigned to Banc of America Financial Products Inc. (BAFP) (formerly NationsBanc Financial Products Inc.) is based on bankruptcy remoteness from its parent, the adequacy of its capital and available liquidity, prudent risk management, and stringent operating policies. NationsBank N.A. (NationsBank), the original parent of BAFP, received approval from the Office of the Comptroller of the Currency in May 1996 to set up BAFP as a wholly owned nonbank subsidiary. The operating companies NationsBank and Bank of America NT&SA were both owned by Bank of America Holdings Inc. Nationsbank merged with Bank of America NT&SA in July 1999 and the resulting entity was renamed Bank of America N.A. (Bank of America).

BAFP is incorporated in Delaware, and is the first derivative products subsidiary established by a U.S. commercial bank. BAFP is capitalized with US\$300 million, which breaks down as US\$100 million in common equity and US\$200 million in subordinated debt. The company can also access a committed liquidity line of US\$150 million, to be initially provided by its parent.

BAFP is a continuation structure. The occurrence of certain events, however, will result in the management of BAFP's portfolio being taken over by a contingent manager. The rating reflects Standard & Poor's opinion of BAFP's extremely strong financial capacity to meet its obligations according to their contracted terms, based on the assessment of BAFP's legal, financial, and operating structures.

Legal Risks

BAFP is a Delaware corporation and its parent, Bank of America, is a national bank whose deposits are insured by the FDIC. The primary regulator of Bank of America and BAFP is the Office of the Comptroller of the Currency (OCC). A Bank of America insolvency would be governed by the Federal Deposit Insurance Act and the National Bank Act, or the Bank Conservation Act. Bank of America has received from the OCC a no-objection letter regarding the establishment of BAFP as a wholly owned nonbank subsidiary of Bank of America. BAFP has its own board of directors consisting of at least five members, two of whom are independent directors.

BAFP intermediates between Bank of America and certain counterparties in derivative transactions. Individual transactions with counterparties are insulated against potential market moves through offsetting mirror transactions with Bank of America. BAFP's net exposure to Bank of America arising from these market hedges is fully collateralized by Bank of America posting collateral to an unaffiliated custodian, initially Bank of New York.

BAFP's derivative transactions with its counterparties and the mirror transactions with Bank of America are generally entered into under the International Swaps & Derivatives Association Inc. (ISDA) Master Agreement. Bank of America will provide marketing, accounting, legal, documentation, processing, and certain other operational services to BAFP under arm's-length agreements.

To establish BAFP's corporate separateness, Standard & Poor's legal analysis of BAFP's structure relates to an insolvency of Bank of America and circumstances under which a court may "pierce the corporate veil" and cause substantive consolidation of the assets and liabilities of BAFP with those of its parent, Bank of America. To that effect, Standard & Poor's has reviewed the nonconsolidation opinion provided by BAFP's legal counsel that if Bank of America becomes insolvent, the appointment of a receiver or a conservator would not result in the consolidation of BAFP's assets and liabilities with those of Bank of America.

Furthermore, Standard & Poor's has received an opinion from BAFP's counsel that if Bank of America becomes insolvent, (1) the master agreement between BAFP and Bank of America covering the mirror transactions is enforceable as a qualified financial contract, and (2) the master agreement, and the collateral pledged by Bank of America for its net obligations to BAFP under that master agreement, are exempt

from risk of delay. BAFP has established a procedure that will ensure the perfection of its security interest in the collateral. Standard & Poor's has received BAFP counsel's opinion that BAFP will have a first-priority perfected security interest in the collateral posted under the master agreement following this procedure, and the collateral will be available within a timely manner. All legal opinions are based on certain assumptions and are subject to qualification.

Financial Risks

Designed as a continuation structure, BAFP is capitalized adequately to cover operating costs and, with a high degree of certainty, market risk and credit risk associated with its derivatives contracts to their full maturity. To hedge its market risk, BAFP enters into mirror transactions with Bank of America, matching the terms of its individual transactions with third-party counterparties. Following certain events such as the insolvency of Bank of America, however, all mirror trades with the bank will be terminated and BAFP's portfolio will be rehedged by its contingent manager in a short period of time.

BAFP measures its financial risk by means of a simulation model. To determine required capital, the model simulates changes in market indices and estimates potential credit losses from counterparty defaults over the maturity of the longest transaction in the portfolio. The model will generate a sufficient number of market index paths to construct a distribution of potential credit losses, against which coverage must be established at a high level of confidence. The model assumes no recovery upon default and incorporates stressed default probabilities provided by Standard & Poor's.

The capital model also determines an additional buffer amount by simulating the changes in the mark-to-market value of BAFP's transactions with its third-party counterparties over the period during which BAFP's portfolio is being rehedged by its contingent manager, after the mirror transactions with Bank of America are terminated. The rehedging buffer also includes adjustments to mid-market valuation to provide coverage for adverse close-out at the opposite side of the market. The required capital will be calculated weekly. Failure to meet the capital requirement will result in restriction of business activities.

Credit risk in excess of preestablished limits for counterparty exposure, as well as exposure to noninvestment grade and unrated counterparties and exposures resulting from tenor and product overlimits, are fully capitalized. The capital model also takes into consideration netting provisions, if enforceable. To secure BAFP's net exposure to Bank of America resulting from the mirror transactions, Bank of America is required to post collateral to BAFP on a daily basis, having a market value after applicable haircuts at least equal to the net mark-to-market value of the matching transactions with Bank of America.

BAFP tests its liquidity requirement, on a daily basis, by simulating cash flows and default of its counterparties over a specified horizon. The simulation exercise establishes the maximum liquidity requirements over the horizon, at a high level of confidence. Failure to satisfy a liquidity need will result in the cessation of certain activities.

Operating Risks

BAFP began operating in January 1997. The company has a number of dedicated employees to manage its day-to-day operations according to BAFP's established operating guidelines. Certain services, including marketing, accounting, documentation, and processing, are provided to BAFP by Bank of America under an arm's-length services agreement.

BAFP intermediates a broad array of over-the-counter interest rate and currency swaps and options for certain Bank of America counterparties. It has the option to enter into unilateral or bilateral security agreements with its counterparties based on ISDA documentation. Collateral received under agreements with its counterparty and the Bank of America must be in the form of cash or highest quality liquid securities consistent with Standard & Poor's investment criteria for 'AAA' structures. The market value of these securities will be determined on a daily basis using recognized pricing services and adjusted according to Standard & Poor's discount factors.

BAFP invests its capital in cash and highest-quality liquid securities consistent with Standard & Poor's investment criteria for 'AAA' structures. The market value of capital investments is calculated daily using pricing services recognized by Standard & Poor's. The company has appointed Bank of America as its initial capital and collateral manager. Bank of America also acts as BAFP's liquidity bank by providing a committed line of credit. The capital and collateral manager and the liquidity bank are required to have a short-term rating of 'A-1' or higher.

BAFP will initiate transactions only with investment-grade counterparties, and will maintain the contractual right to assign to Bank of America a counterparty's transactions whose ratings are downgraded to below investment grade after a transaction execution. Transactions with unrated counterparties are limited according to BAFP's operating guidelines. Adjustments are made to the capital requirement for unsigned master agreements and confirmations based on a prespecified schedule. Payments of dividends by BAFP to Bank of America will be made only in accordance with certain requirements set out in BAFP's operating guidelines.

BAFP has contracted with a contingent manager that is an experienced derivatives portfolio manager. The contingent manager is required to be rated 'A-1' or higher. The contingent manager will begin familiarizing itself with the day-to-day operational and procedural aspects of BAFP's activities once the Bank of America rating is lowered

to under 'A-' or 'A-1'. It will, however, assume the management of BAFP's portfolio after the occurrence of certain wind-down events: failure to satisfy the minimum capital requirement, BAFP's downgrade below 'AA-', or Bank of America's downgrade below 'BBB+' or 'A-2'. During a wind-down phase, the contingent manager will cease new business activities, and dividend payments will be further restricted.

Certain other circumstances will constitute a rehedging event and result in the termination of the master agreement between BAFP and Bank of America. The contingent manager will then rehedge the portfolio and also assume the role of BAFP's capital and collateral manager. Rehedging events include failure by Bank of America to satisfy a collateral call made by BAFP, and insolvency events related to Bank of America or BAFP. The contingent manager will continue to manage BAFP's portfolio during a rehedging phase to its final maturity in accordance with BAFP's operating guidelines, or until BAFP resumes the management of its portfolio subject to the satisfaction of certain conditions, including Bank of America's upgrade to 'A-' and 'A-1'.

Dividend payments will continue to be restricted during a rehedging phase. An independent auditor, Ernst & Young LLP, will verify weekly BAFP's compliance with the limits and requirements established in the company's operating guidelines.

Bavaria Delaware Finance I LLC

Analysts:

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Credit Rating

AAA

Credit Rating History

Dec. 16, 1999

AAA

Outstanding Rating(s)

Counterparty credit

AAA

Sovereign Rating

United States of America

AAA/Stable/A-1+

Rationale

The ‘AAA’ counterparty rating assigned to Bavaria Delaware Finance I LLC (Bavaria Delaware) is based on Standard & Poor’s assessment of Bavaria Delaware’s legal, financial, and operating structure. Bavaria Delaware is a newly established special-purpose entity (SPE), and part of a new operating vehicle referred to as the Bavaria Finance Group, which comprises a holding company and three subsidiaries.

Bavaria Finance Group is administered by Bayerische Hypo- und Vereinsbank AG, New York Branch (HVB). Bavaria Finance Group enables HVB to direct credit exposures as sourced from its clients to Bavaria Finance Group’s medium-term notes investors. While Standard & Poor’s has received an opinion from counsel affirming that Bavaria Finance Group would not be consolidated with HVB in the event of a bankruptcy of the bank, it should be noted that HVB will actively refer qualified derivatives clients to this new vehicle.

HVB’s rating at the time of Bavaria Finance Group’s initial issuance was ‘A+/A-1’. It is clear that Bavaria Finance Group also enhances HVB’s participation in the derivatives marketplace in the aftermath of its downgrade on Oct. 29, 1999. Any services to be provided by HVB or any affiliates will be provided according to “arm’s length” agreements and fees will be paid for same services.

It should also be noted that Bavaria Delaware is fundamentally different from the other derivative product companies that Standard & Poor's has previously rated. Bavaria Delaware's primary areas of activity are to enter into credit default (CD) swaps and total rate of return (TRR) swaps, and to provide short-term financing by offering reverse repurchase agreements (reverses). Bavaria Delaware is the first credit enhanced operating company rated by Standard & Poor's that is authorized to provide credit default swaps. Bavaria Delaware is referred to as a credit derivative product company (CDPC) in an attempt to underscore this difference.

Program Description

Bavaria Finance Group comprises four SPEs, which are described as follows (*see table 1*). All hedge counterparties are rated either 'A-1+' or 'A-1' if additional collateral has been provided by the 'A-1' counterparty and an accompanying opinion asserting BAV Jersey's first perfected secured interest in the collateral has been received by Standard & Poor's. All reverse repurchase agreements, credit-default swaps, and total rate of return swaps are initiated with counterparties rated no lower than 'BBB-'.

BAV Jersey Finance Ltd. (BAV Jersey)

BAV Jersey, a Jersey limited liability company, has issued US\$282.5 million in medium-term notes. Holders of these medium-term notes assume the following risks:

- Credit exposure of authorized investments acquired by BAV Jersey, primarily asset-backed bonds or securities;
- Credit exposure of liquid assets acquired by BAV Jersey such as commercial paper or certificates of deposit rated no lower than 'A-1+'; and
- Credit exposure to hedge counterparties of BAV Jersey. Such hedge agreements may include interest rate swaps, basis swaps, options on either of the foregoing, interest rate caps, floor contracts, and balance guaranteed swaps.

In addition, as the direct result of an asset purchase agreement (APA) offered by BAV Jersey to Bavaria Delaware, BAV Jersey noteholders also assume the following credit risks:

- Credit exposure of assets acquired by Bavaria Delaware, primarily asset-backed bonds or securities;
- Credit exposure of liquid assets acquired by Bavaria Delaware such as commercial paper or certificates of deposit rated no lower than 'A-1+'; and
- Credit exposure resulting from BAV Jersey's purchases of defaulted assets from Bavaria Delaware, in accordance with the terms of the APA.

Note that assets purchased by BAV Jersey from Bavaria Delaware under the APA would not be subject to the investment-grade limitation on authorized investments at the time of acquisition under the APA. The defaulted asset would however have been subject to the authorized investment criteria on its initial inclusion in the Bavaria Delaware portfolio by way of outright acquisition or risk of acquisition by way of a credit default swap agreement.

Bavaria Delaware Finance I LLC (Bavaria Delaware)

Bavaria Delaware, a Delaware limited liability company, is authorized to do the following:

- Entering into CD swaps, TRR swaps, and reverses;
- Acquire authorized investments, primarily asset-backed bonds or securities rated, none rated lower than ‘BBB-’ at time of acquisition;
- Acquire liquid assets such as commercial paper or certificates of deposit rated no lower than ‘A-1+’; and
- Enter into hedge agreements which may include interest rate swaps, basis swaps, options on either of the foregoing, interest rate caps, floor contracts, and balance guaranteed swaps.

Special-purpose entity	Issuance	Rating type	Rating
Bavaria Finance Holdings LLC	None	N.R.	N.R.
Bavaria Delaware Finance I LLC	None	Long-term counterparty credit rating	AAA
BAV Jersey Finance Ltd.	US\$100 million class senior secured notes A-1	Secured	AAA
	US\$32 million class A-2 senior secured notes	Secured	AA
	US\$80 million class B-1 senior secured notes	Secured	BBB-
	US\$33 million class B-2 senior secured notes	N.R.	N.R.
	US\$37.5 million preferred shares	N.R.	N.R.
Bavaria Finance Funding I LLC	US\$4 billion 4(2) commercial paper program	Commercial paper	A-1

Bavaria Finance Funding I LLC (Bavaria Funding)

Bavaria Funding, a Delaware limited liability company, is authorized to issue up to US\$4 billion face amount of commercial paper notes. Under a loan agreement, Bavaria Funding loans proceeds of issuance to Bavaria Delaware. Bavaria Delaware may deploy these loan proceeds or loan these borrowed proceeds to BAV Jersey under a loan agreement entered into between Bavaria Delaware and BAV Jersey.

Bavaria Finance Holdings LLC (Bavaria Holdings)

Bavaria Holdings, a Delaware limited liability company, is the sole member of Bavaria Delaware and Bavaria Funding. Bavaria Holdings is the sole holder of the preferred shares offered by BAV Jersey. Bavaria Holdings has been formed in compliance with Standard & Poor's SPE criteria. Bavaria Holdings is 49% owned by HVB and 51% owned by a rated SPE. The SPE has swapped its ownership interests to outside investors.

Program Summary

Credit support for Bavaria Delaware, a credit derivative products company or credit management vehicle, comes from an asset purchase agreement with BAV Jersey. The medium-term noteholders and preferred shareholders of BAV Jersey provide the equity that functions as credit support for Bavaria Delaware. Bavaria Funding provides the financing for Bavaria Finance Group.

HVB provides liquidity support to Bavaria Delaware in the form of two liquidity facilities. One liquidity facility is rated 'A-1', while the second liquidity facility is credit enhanced and is rated 'A-1+'.

The 'A-1' liquidity facility is sized to cover timing mismatches related to supporting obligations that are incurred through the loan agreement Bavaria Delaware enters into with Bavaria Funding. Bavaria Funding relies on Bavaria Delaware for such liquidity as may be required to pay back maturing commercial paper notes.

A portion of commercial paper is issued and used to fund the short-term portfolio of Bavaria Delaware. This portfolio of TRR swaps and reverses is funded by commercial paper with matched maturities. A liquidity facility is not required for this commercial paper, since TRR swaps and reverses mature before the commercial paper maturity date. When one of these counterparties defaults, the asset (in the case of the reverses) and the hedge (in almost all cases, the asset in the TRR swaps) will be liquidated to meet commercial paper obligations. Standard & Poor's has gained comfort with regard to any risk of stay of the reverse repurchase assets due to program counterparty restrictions and certain opinions submitted for review.

The structured 'A-1+' liquidity facility is sized to support any needs that may be incurred in support of the 'AAA' counterparty obligations assumed by Bavaria

Delaware with various market participants that meet eligibility criteria. This credit enhanced liquidity facility may be called on to fund credit default swap counterparty obligations on the occurrence of a credit event, and to fund a loan to BAV Jersey, the proceeds of which may be utilized to acquire a defaulted asset as proscribed under the APA.

In summary, the ‘A-1+’ liquidity facility is sized to meet potential cash flow needs generated by timing differences that may arise between commercial paper maturity dates and the need for cash with regard to the short-term portfolio and the credit default swaps. The liquidity facility rated ‘A-1’ is sized to cover timing differences regarding the balance of commercial paper that is issued to fund bond and structured finance assets.

Legal Risks

Separateness

A primary concern in rating traditional derivative product companies (DPC) is separateness. Usually, the DPC, as an intermediary for a parent or sponsor, must be insulated from the risk of consolidation with the lower-rated parent or sponsor in the event of the parent or sponsor’s bankruptcy. While Standard & Poor’s has received nonconsolidation opinions with regard to the Bavaria Finance Group, it must be noted that the primary areas of focus were the following:

- The insulation of risk to Bavaria Delaware, BAV Jersey, ‘AAA’ and ‘AA’ noteholders due to the claim ‘A-1’ rated commercial paper noteholders could have in the event of a commercial paper market disruption event, and
- The corporate documents of Bavaria Holdings.

Bavaria Funding is precluded from filing Bavaria Delaware into bankruptcy if Bavaria Delaware fails to honor its commitment under the loan agreement. This failure would occur as the direct result of the failure if the ‘A-1’ liquidity support sized to meet ‘A-1’ rated commercial paper note needs. A claim and successful filing of Bavaria Delaware would have the consequence of initiating an early liquidation of investments and subjecting the entire structure to market value risk. Thus, nonpetition and nonconsolidation were carefully considered. Of most significance in the Bavaria Holdings corporate documents is the requirement of unanimous vote of the directors including the two independent directors to take any material action. This protects the structure from the same above-mentioned potential market value risk. The commercial paper is rated ‘A-1’ due to the weak link to the liquidity provider’s ‘A-1’ rating.

Collateral

In this CDPC, the parent providing capital in the form of preferred shares is an SPE and thus is deemed to have bankruptcy-remote exposure to an operating company parent and the attendant bankruptcy risks. There is credit exposure risk to HVB due to the fact that HVB is the primary hedge agreement provider. As such, we have the similar offsetting transaction issues as with a traditional DPC. Indeed, the 'A-1' rated counterparty, HVB is required to post collateral in support of its counterparty credit risk. Standard & Poor's has required a first perfected security interest opinion in support of the CDPC's ability to claim this collateral on a timely basis in the event of HVB bankruptcy (an enforceability opinion). Collateral will be priced using an accepted pricing service and value will be adjusted according to Standard & Poor's market value discount factors.

Netting

Since HVB is not considered Bavaria Delaware's parent, concerns with regard to the uncertain nature of netting as a result of the legal status of the parties or the law governing the hedge transactions with HVB in the event of an HVB insolvency are de-emphasized. All derivatives transactions are written under ISDA documentation. Under certain circumstances there is netting under signed masters. Netting is not permitted across affiliates. Reverse repurchase agreements are written under PSA documentation.

Security Interest

For the interest and principal waterfalls, the following obligations rank pari passu with each other:

- The loan agreement between Bavaria Funding and Bavaria Delaware,
- The loan agreement between Bavaria Delaware and BAV Jersey,
- The APA between Bavaria Delaware and BAV Jersey,
- The rights of the liquidity providers under the liquidity facility,
- The rights of hedge providers under the hedge agreements, and
- The rights of the AAA noteholders of BAV Jersey.

These obligations, referred to as senior obligations, are subordinate only to taxes, custodian advances, portfolio settlement obligations, and certain administrative fees that have been capped. First perfected security interest has been granted to the trustee in the BAV Jersey asset portfolio, the APA, the Bavaria Delaware loan agreement with BAV Jersey, an additional loan agreement from HVB sized to meet expenses during the first year of Bavaria Finance Group operations, the administration

agreement, the custodian agreement, a limited expense guarantee offered by BAV Jersey in favor of Bavaria Delaware, all hedge agreements, and the operating account and proceeds thereof.

It is important to note that obligations under the loan agreements and the liquidity facilities are due only on legal final maturity of the BAV Jersey issued notes. Thus, assets ultimately purchased with the proceeds of these agreements will have matured and be available to meet obligations. The credit risk of these assets is imputed in the credit model and an incurrence test is run before each asset's possible inclusion and before entrance into each new swap or repurchase transaction.

Financial Risks

HVB Risk Management developed a model that takes into consideration the cash flows of the various investments and program obligations, the types of transactions entered into by Bavaria Delaware and the tenor limitations pertaining to all offered products and authorized investments, the credit quality of counterparties and acquired assets, exposure limits, and methods for curing any breaches of preestablished limits. A traditional DPC analysis would consider potential credit loss and severity, portfolio value erosion due to adverse market conditions, and inadequate liquidity of DPC assets.

Credit Loss and Severity

Bavaria Delaware's credit support is derived from the APA and an expense guarantee provided by BAV Jersey. Thus, the issued classes and preferred shareholders of BAV Jersey provide all the credit support to Bavaria Delaware. In a traditional DPC, this 'capital' would be provided by the parent or sponsor. In this structure, the investors in BAV Jersey notes and shareholders provide this support. BAV Jersey employs criteria largely consistent with Standard & Poor's CBO/CLO criteria.

Operating guidelines for the Bavaria Finance Group take into consideration credit exposure variables such as exposure to industry, obligor, counterparty, dollar amount, tenor, underlying asset type, and rating. Historical rates were stressed. However, valuation of individual positions, and thus exposure to a counterparty at any given time are of lesser concern with regard to this CDPC. Bavaria Delaware retains the rights to terminate transactions early subject to passing the model runs and rating agency approval.

Bavaria Delaware will enter into several types of transactions. Total rate of return (TRR) swaps and reverse repurchase agreements have a maximum maturity of 183 days in the case of reverses and 183 days renewable to 364 days in the case of TRR. Thus, these counterparty credit exposures are limited to one-half of one year and to credit ratings of 'A-1+' or 'A-1' with supporting collateral.

Another type of transaction, credit default swaps, are subject to credit exposure limitations as well. In addition to the usual industry and obligor concentration concerns, there are two other areas of particular concern. Tenor is of concern due to the fact that eligible reference obligations include corporate bonds and loans as well as asset-backed bonds and loans. The credit risk modeling required the establishment of new asset-backed industry categories as well as recovery rate assumptions based on senior class ABS of various rating levels. All credit default swaps must mature before December 2006, the scheduled maturity date of the medium-term notes. In addition, all ABS must mature before December 2006. Notes may have an extended maturity date due to extension risk of the underlying assets in the credit default swaps and of the authorized investments. However, legal final maturity of these obligations must be before December 2009, the legal final maturity of the issued medium-term notes.

Portfolio Value Erosion

The above mentioned maturity date requirements serve to mitigate the impact of adverse market movements. The model run that is performed daily monitors credit variation and cash flow projections. Bavaria Delaware is not a terminating or continuation structure. Bavaria Finance Group functions under a set of Operating Guidelines that enable it to issue commercial paper, enter into derivative contracts and acquire authorized investments until one of the stressed portfolio scenarios causes a model run breach. Such a breach leads to a cure period of 15 business days.

During this cure period, Bavaria Delaware is restricted from entering into new transactions unless they are risk reducing and the structure is precluded from acquiring new assets or selling new commercial paper. In the event a cure is not achieved, Bavaria Delaware is in effect suspended and as trades mature, proceeds are held to meet future maturing obligations. Medium-term notes are not subject to early termination but are simply paid at applicable maturity out of portfolio assets, which in all cases will have matured as opposed to liquidated subject to market value risk. Events of default that lead to immediate liquidation of the medium-term notes are limited to 'AAA' remote items such as issuer failure to pay, tax consequences for which Standard & Poor's has received tax opinions, voluntary or involuntary bankruptcy, and Securities Act of 1940 (a '40' Act) determination.

Asset Liquidity

A simulation is modeled of portfolio positions that includes counterparty payables and obligations to meet margin calls on hedge agreements with a defaulting counterparty. The liquidity needs for Bavaria Delaware's 'A-1+' requirements is

determined daily and reported weekly. Bavaria Delaware is committed to maintaining a sufficient minimum amount of liquidity resources available at all times to meet potential liquidity requirements.

The minimum required liquidity amount is the difference between the following:

- The sum of the principal amount owed to Bavaria Delaware by BAV Jersey under the applicable loan agreement, the principal amount of all authorized investments owned by Bavaria Delaware, the principal amount of the outstanding class A-2, B-1, B-2 notes and preferred shares issued by BAV Jersey, and the maximum expected exposure amount; and
- The principal balance of all outstanding amounts drawn by Bavaria Delaware under the liquidity facility. The maximum expected exposure amount is determined to cover liquidity needs that arise from defaults of credit default swap reference assets or TRR and reverse repo counterparties.

All authorized investments must be rated or deemed rated at the time of acquisition, and those without a Standard & Poor's rating are notched down one rating category for the purposes of inclusion in the approved credit model.

It is important to note that all ABS and liquid assets must be rated by Standard & Poor's. With the exception of TRR swaps and reverses, ABS are limited to the senior most class at issuance for inclusion in the BAV Jersey portfolio or as the underlying in a swap or repurchase agreement entered into by the derivative counterparty, Bavaria Delaware.

Interest Deferral

The 'BBB-' rated class B-1 and class B-2 notes not rated by Standard & Poor's are subject to interest deferral in certain situations. These interest payments are capitalized and due no later than applicable maturity of the issued notes.

Operating Risks

Bavaria Delaware functions under an extensive set of operating guidelines. The directors of each of the SPEs, as well as HVB in its role as administrator, have explicitly defined responsibilities. In addition, the operating guidelines address Standard & Poor's traditional concerns of initiation and ramp-up period, ongoing operations, and potential wind-down or liquidation events.

Management, Board of Directors, Dividend Policy, and Voluntary Bankruptcy

Bavaria Delaware, as well as Bavaria Holdings, BAV Jersey, and Bavaria Funding have two independent directors whose affirmative vote is required to take material

action. Nonpetition language has been cited in each of the governing documents. Distributions on the preferred shares issued by BAV Jersey are made subject to the limitations imposed by the capital and liquidity models.

Market Risk Mitigation Method

Hedge agreements and TRR swaps that are hedged with HVB are subject to additional collateral requirements as long as HVB is rated 'A-1'. This applies to any other 'A-1' rated counterparties as well. Of note, however, is an additional requirement regarding the 'A-1+' structured liquidity facility provided by HVB. This facility is enhanced with collateral subject to the market value discount tables and is sized dollar for dollar with the liquidity facility sizing requirements as determined by the liquidity model.

Bavaria Delaware employs a limit structure with regard to eligible counterparties. This creates a minimum credit quality of counterparties at origination. Eligible counterparties have a minimum rating of 'A-' if a hedge provider, and 'BBB-' if a swap or reverse repo provider. Bavaria Delaware does not have the ability to enter into transactions with unrated and noninvestment-grade counterparties at the time of transaction initiation.

Subsequent downgrades of existing counterparties do not lead to transaction termination, but may lead to a requirement for collateralizations or reassignment at cost to the downgraded counterparty. Counterparties who are rated downward are reflected in the credit model and subject to collateral enhancement requirements. A hedging counterparty whose credit rating transitions downward through the 'A-1' threshold is no longer eligible for new transactions. However, existing transactions may remain on the book to maturity.

If the rating level 'A-2' is breached, there is no forced liquidation; however, there is full collateralization or re-assignment at cost of counterparty. The capital requirement, as calculated for BAV Jersey and reflected in the capital model run, reflects counterparty risks, concentrations as well as the credit exposures to the invested portfolio, and the underlying assets of swap transactions.

All authorized investments must be U.S. dollar denominated. Authorized investments must be either U.S. obligor obligations or an obligation of an entity whose long-term foreign currency issuer credit rating is no lower than 'AA'. Assets must provide for periodic payment no less frequently than annually. With the exception of TRR hedges, all assets must have a legal final maturity date before scheduled maturity of the BAV Jersey notes. Counterparties with 'A-1' ratings are required to collateralize their obligations according to a formula that provides for a volatility buffer and weekly mark to marks on the posted collateral.

In addition, ABS acquired as authorized investments are subject to a senior class, 'AA-' ratings floor at origination limitation. Corporate bonds are subject to a 'BBB-' ratings floor at time of acquisition.

Eligible transactions include interest rate swaps, basis swaps, options on either of the foregoing, interest rate caps, floor contracts, and balance guaranteed swaps, and Bavaria Delaware's primary activities, which include entering into CD swaps, TRR swaps, and reverses. The maximum maturity of any transaction is the applicable of swap maturity, reverse maturity, scheduled maturity of the notes issued by BAV Jersey, or legal final maturity of the notes issued by BAV Jersey. Events of default that lead to a liquidation event include 'AAA' remote items such as issuer failure to pay, tax consequences for which Standard & Poor's has received tax opinions, voluntary or involuntary bankruptcy, and a '40' Act determination.

Certain operational failures result in a wind-down event. Triggers of a wind-down event include the following:

- Failure of Bavaria Delaware to secure renewed liquidity facilities,
- Breaches of certain covenants and warranties or failed representations or warranties that remain unremedied after 30 days,
- Failure of a capital model run or liquidity model run that remains unremedied for a period of 15 business days, and
- Failure of various parties to maintain first perfected security interests in collateral.

As indicated previously, this structure avoids market value risk by not initiating a liquidation on the occurrence of a wind-down event, but rather pays out obligations as transactions and assets mature according to a priority of distributions reviewed by Standard & Poor's.

Bavaria Finance Group represents one possible evolution of an enhanced credit derivative operating vehicle. Bavaria Finance Group was subjected to initial operating review, and will be subject to periodic operational review, by Standard & Poor's. Transactions are audited by an independent team within HVB as well as an outside accounting firm. Weekly surveillance, quarterly audited surveillance, and annual audited financial reports are required.

Bear Stearns Financial Products Inc.

Analysts:

Nik Khakee, New York(1) 212-438-2473
Cristina Polizu, New York (1) 212-438-2576

Credit Rating

AAA

Outstanding Rating(s)

Counterparty credit AAA

Credit Rating History

Jan. 11, 1996 AAA

Sovereign Rating

United States of America AAA/Stable/A-1+

Subsidiaries

Bear Stearns Trading Risk Management Inc.

Counterparty credit AAAt

Rationale

The 'AAA' rating assigned to Bear Stearns Financial Products Inc. (BSFP) and Bear Stearns Trading Risk Management Inc. (BSTRM) is based on Standard & Poor's assessment of their legal, financial, and operating structures, as well as their combined capitalization.

BSFP and BSTRM are incorporated in Delaware as wholly owned subsidiaries of the Bear Stearns Cos. Inc. (BSC) to engage in a wide array of over-the-counter interest rate, currency, and equity swaps and options, and to purchase or sell U.S. government securities, exchange-traded futures, and options. The market risk of BSFP's and BSTRM's portfolios is essentially removed through offsetting transactions with Bear Stearns Capital Markets Inc. (BSCM), a wholly owned subsidiary of BSC. To further insulate against potential market moves in the absence of BSCM, the portfolios may be hedged using certain futures contracts.

The obligations of BSCM are fully and irrevocably guaranteed by BSC. BSFP is designed as a continuation structure to honor its obligations to full maturity. BSTRM, its wholly owned subsidiary, is designed as a termination structure, the obligations of which will accelerate upon the occurrence of certain events. The ratings reflect Standard & Poor's opinion of the companies' extremely strong financial

capacity to meet their obligations according to their contracted terms. The ratings do not address the likelihood of the occurrence of a termination event.

Legal Risks

BSFP and BSTRM intermediate transactions with certain counterparties of BSCM. Counterparties transact with either BSFP or BSTRM under separate master agreements. Each BSTRM transaction with a termination counterparty, and each BSFP transaction with a continuation counterparty, is offset by a mirror swap with BSCM. BSCM pays an intermediation fee to BSFP or BSTRM for each third-party transaction. BSCM secures BSFP's and BSTRM's exposure to its risk resulting from the change in the market value of these swaps by posting collateral to BSFP according to a specified formula. Furthermore, BSFP may hedge its portfolio's market risk using certain exchange-traded contracts through transactions with Bear Stearns Securities Corp. (BSSC), its futures commission merchant.

Each hedge is also offset with a mirror hedge swap with BSCM. BSCM secures BSFP's exposure to it, resulting from changes in the value of these hedges by posting collateral based on the closing prices of the hedge instruments. The mirror swaps with BSCM, which offset the third-party transactions, and the mirror hedge swaps are entered under two separate master agreements. The two master agreements may be set off against one another following certain prespecified trigger events, including the insolvency of BSC or BSCM.

In addition, BSFP may, on a selective basis and for a fee, guarantee certain of its affiliates' transactions with third-party counterparties. For each guaranteed transaction, BSFP enters into an offsetting mirror transaction with the guaranteed affiliate. The mirror transaction is then offset through a mirror swap with BSCM. The affiliate posts collateral to BSFP to secure BSFP's exposure that results from the guarantee. BSFP only guarantees an affiliate if a satisfactory legal opinion with respect to the enforceability and timely availability of the affiliate's collateral is provided to Standard & Poor's.

BSTRM is a wholly owned and guaranteed subsidiary of BSFP, and BSFP and BSTRM are bankruptcy remote from BSFP's parent, BSC. BSFP and BSTRM have boards of directors consisting of nine members each, three of whom are independent directors.

The legal analysis of these two structures concerns the following fundamental issues:

- Separateness of BSFP and BSTRM from BSC and its other affiliates. Standard & Poor's has reviewed the nonconsolidation opinion provided by BSFP's counsel that the arrangements among BSFP, BSCM, and BSC concerning marketing and operational support and processing will not cause the consolidation of its assets

with those of BSC or BSCM in the event of the bankruptcy of BSC or BSCM. However, the assets of BSFP and its subsidiary BSTRM may be consolidated;

- Qualification of the two master swap agreements covering the mirror swaps and the mirror hedge swaps as swap agreements under the Bankruptcy Code, 11, U.S.C. and their exemption from automatic stay in the event of the bankruptcy of BSC or its affiliates. This issue is particularly important, since BSFP engages in over-the-counter contracts, as well as certain exchange-traded contracts, and both types of contracts are mirrored by transactions with BSCM under the International Swaps & Derivatives Association's (ISDA) standardized master agreement. The contracts are thus settled on a net basis in the event of the insolvency of BSC or BSCM. Standard & Poor's has received the opinion of BSFP's counsel that the master swap agreements would qualify as swap agreements as defined under the Bankruptcy Code and, therefore, their termination would not be subject to automatic stay.

Enforceability of the two master swap agreements and the timely availability of the collateral posted by BSCM. BSFP has established a procedure that will ensure the perfection of its security interest in the collateral. Standard & Poor's has received counsel's opinion that BSFP will have a first priority perfected security interest in the collateral posted under the master swap agreements following this procedure and that the collateral will not be subject to automatic stay under the Bankruptcy Code. All legal opinions are based on these assumptions and are subject to the qualifications stated therein.

Financial Risks

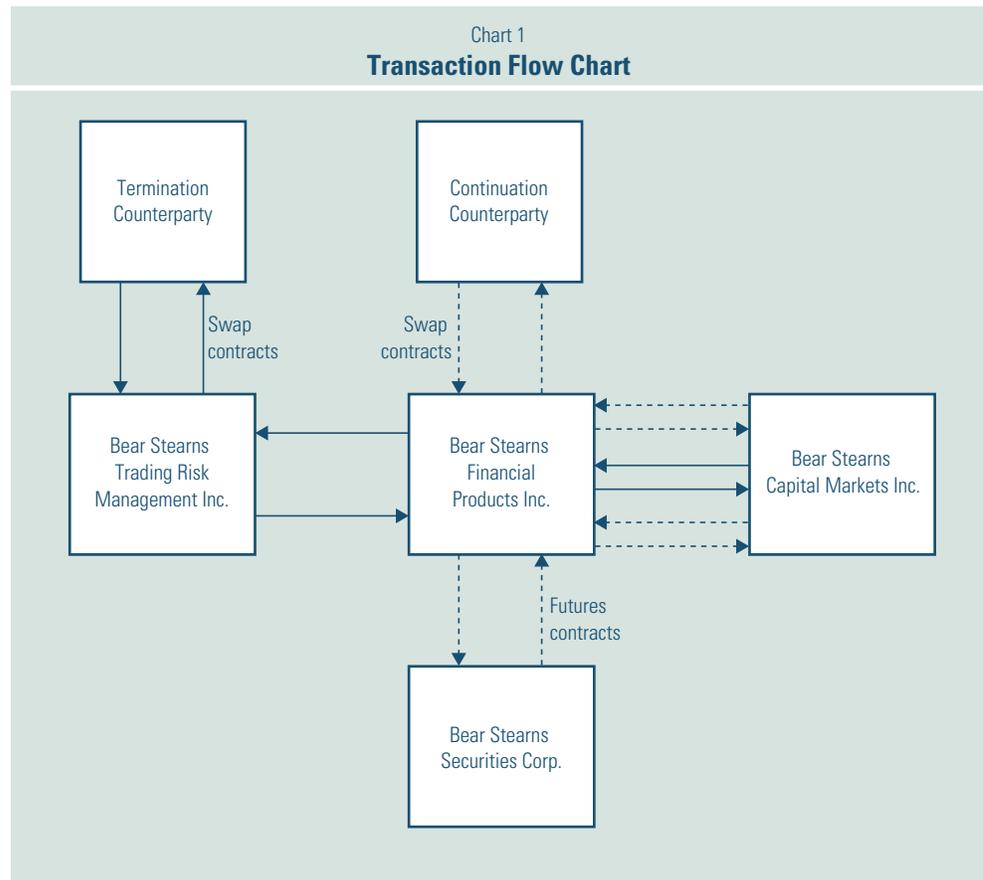
The initial capital adequacy is established using a simulation model based on projected portfolios of BSFP and BSTRM. The model reflects BSFP's obligation to perform under its derivatives contracts to their full maturity and BSTRM's obligation to terminate its derivatives contracts and settle within a very short period upon occurrence of certain trigger events. BSFP is capitalized sufficiently to cover operating costs and, with a high degree of certainty, the market risk and credit risk associated with its continuation transactions and BSTRM's termination transactions on a consolidated basis.

The risk modeling exercise begins with the determination of a target portfolio composition consistent with BSFP's and BSTRM's business development plan. Using probabilistic growth assumptions, the risk model then simulates the portfolio projections incorporating a diversified mix of products, counterparty net or gross exposure treatment, market parameters, transaction maturities, and counterparty quality. Default losses are determined using a long simulation horizon.

To calculate the required capital on an ongoing basis, the credit model simulates market evolution and counterparty defaults over the maturity of the longest transaction in the actual portfolio. The required capital is calculated weekly, based on BSFP's and BSTRM's combined actual portfolios. Failure to meet the actual capital requirement will result in a trigger event.

A potential capital requirement is also calculated on an ongoing basis using updated projected portfolios. The composition of these portfolios is informed by actual experience. The potential capital requirement is monitored weekly. Failure to meet preestablished targets will result in the restriction of certain business activities.

BSFP also may use exchange-traded futures and options as a dynamic market risk hedging mechanism, in addition to the mirror trades with BSCM. BSFP has contracted BSSC, a registered securities dealer ('A+/A-1'), as its futures commission merchant in executing these futures contracts with a selected number of exchanges. The use of futures contracts as hedges will result in BSFP's exposure to the default of its futures commission merchant. This exposure is recognized in the risk modeling exercise.



To secure BSFP's and BSTRM's exposure to it, resulting from the mirror hedge swaps and the mirror swaps, BSCM posts collateral to BSFP daily in an amount at least equal to the change in the market value of those swaps. Tenor, product, and counterparty exposure over limits, as well as exposures to noninvestment and unrated counterparties, are fully capitalized. In addition, the liquidity requirement is tested weekly using simulations of market indices over two different horizons.

Operating Risks

At the outset, a counterparty is given the choice to transact with BSFP, a continuation vehicle, or BSTRM, a termination vehicle. BSFP provides a guarantee of BSTRM's obligation to each termination counterparty in return for BSTRM's assignment of its rights under the termination master agreement. Transactions with BSFP and BSTRM are entered into under separate master agreements, based on the ISDA documentation. The counterparties may be given the option to enter into mark-to-market agreements to cover an exposure above a certain mutually agreed limit. Credit risk in excess of preestablished limits caused by downgraded counterparties, as well as exposure to noninvestment-grade and unrated counterparties, are fully capitalized (*see chart*).

BSFP's and BSTRM's capital and collateral are invested in cash or the highest quality liquid securities consistent with Standard & Poor's investment criteria for 'AAA' structured financing. The market value of these investments is determined daily using pricing services acceptable to, and adjusted according to, Standard & Poor's market value discount factors.

BSFP has contracted with a contingent manager which is an experienced derivatives portfolio manager rated 'AA-' and 'A-1+'. Certain events, such as BSFP's downgrade to below 'A' or BSC's to below 'A-2', bankruptcy events related to BSC or BSCM, BSFP's failure to maintain its minimum capital requirement, and BSCM's failure to satisfy a collateral call or a swap payment to BSFP, will constitute a trigger event. Occurrence of a trigger event will result in the termination of BSTRM's contracts with its counterparties, all guaranteed affiliates' contracts, all offsetting mirror contracts with BSCM, and the simultaneous wind-down of BSFP's portfolio. The contingent manager consequently will become responsible for rehedging and managing BSFP's portfolio to its final maturity in accordance with BSFP's operating guidelines.

BSTRM's counterparties will be notified of the valuation date within two universal business days after a trigger event has occurred. Counterparty transactions will be valued on the designated valuation date: three universal business days, or in the event of a market disruption, within six universal business days of the trigger date. The settlement amounts for the BSTRM's termination trades will be calculated by BSTRM using midmarket inputs verified by its independent auditor.

A counterparty has the right to request revaluation based on quotes polled from reference market-makers. Full two-way payments will be made in U.S. dollars. Payments from termination counterparties to BSTRM are required by the fifth universal business day after the valuation date. Payments by BSTRM to its counterparties will be made by the 10th universal business day following the valuation date. Payments from BSTRM and BSCM to BSFP will be required on the fifth universal business day, and payments from BSFP to BSTRM are required on the 10th universal business day, following the valuation date. Payments from BSFP to BSCM may be paid within two years of the valuation date.

BSFP's and BSTRM's day-to-day operations are managed by their own staff hired specifically for the marketing, management, and operations of their activities according to their established operating guidelines. Certain other services are provided by BSCM or its other affiliates under arm's-length servicing agreements. In addition, its independent auditor, Deloitte & Touche LLP, verifies on a regular basis BSFP's and BSTRM's compliance with counterparty, product, tenor restrictions, along with collateral, liquidity, and capital requirements, as established in their operating guidelines. The independent auditor also provides reports to the contingent manager periodically and, following a trigger event, will monitor certain aspects of BSTRM's termination process and the rebalancing of BSFP's portfolio by the contingent manager.

Beta Finance Corp.

Analysts:

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Credit Rating

AAA/A-1+

Outstanding Rating(s)

Counterparty credit	AAA/A-1+
Senior secured	AAA
Commercial paper	A-1+

Credit Rating History

Nov. 26, 1991	AAA/A-1+
Sept. 8, 1989	A-1+

Subsidiaries**Beta Finance Inc.**

Senior secured	AAA
Commercial paper	A-1+

Rationale

The ratings for Beta Finance Corp. Ltd.'s senior U.S. and European commercial paper and medium-term note programs are based on Standard & Poor's assessment of Beta's structure and capital adequacy. The ratings are also supported by the quality of the portfolio management by the investment manager, Citibank International PLC, which must manage the portfolio within strict leverage, credit quality, and diversification limits. Beta's structure is designed to provide sufficient capital support to meet all obligations in full and on a timely basis.

Profile

Beta was rated in 1989, and was the second structured investment vehicle to be rated. Alpha Finance Corp. was the first, in 1988. Citibank International PLC is investment manager for both companies. Beta was established as a credit arbitrage vehicle, issuing debt at the 'AAA/A-1+' level and managing a portfolio of diversified highly rated securities while remaining market-risk neutral. In doing this, Beta can pick up the credit spread or pricing differential between its funding costs and asset portfolio over the life of the assets.

A number of changes have been made to Beta's structure since it was first rated. In 1995, Citibank International PLC replaced the original investment manager, Citibank (Bahamas) Ltd. In 1996, the capital charges themselves, the process for calculation, and the gearing levels were also changed.

Each security in the portfolio is capital charged on an asset-by-asset basis. Beta's original structure for capital charges and gearing levels was calculated only on the basis of the rating of an asset. Beta now calculates capital charges based on a formula that incorporates the credit rating, the asset tenor, a concentration factor, and an asset-liquidity factor. An asset with a higher rating and a shorter tenor will have a lower capital charge than a lower-rated or longer-term asset. This has freed up capital, allowing Beta to increase leverage, but only within an agreed limit.

Portfolio Composition

The portfolio's current value is US\$13 billion. Adhering to its Discretionary Investment Management Agreement, Beta has approximately 73% of its portfolio in 'AAA' and 'AA' rated securities and counterparties, 26% in 'A' rated securities, and approx. 1% in 'BBB' rated securities. Beta does not have any exposure to noninvestment-grade securities or counterparties. It may hold 'BB' rated securities, but only as the result of a downgrade. Portfolio diversification, also critical to Beta's structure, is strictly observed; the largest single exposure of the structure currently does not exceed approximately 4% of the portfolio value. If there is a breach of any concentration limit, a value of zero is assigned to that excess in the capital adequacy calculation.

The asset portfolio is predominantly concentrated in U.S. exposure, with an even distribution of concentration to the various sectors. These sectors include financial institutions, sovereigns, corporates, and structured securitizations. Each sector is further divided into subgroups, where Beta is also well-diversified.

Market Risk

Beta uses the proceeds of debt issuances of commercial paper and medium-term notes to finance the purchase of the securities portfolio. Derivative contracts in the form of swaps, options, forwards, and forward-rate agreements are used to convert all assets and liabilities into the appropriate floating-rate instruments. As a result of this active management, Beta remains market-risk neutral.

Beta's tolerance for currency or interest rate mismatches is conservative. The tolerance limit allows for no more than an 0.05 basis point change in portfolio value corresponding to a one basis point change, either parallel or incremental, in interest

rates, and an 0.5 basis point change in portfolio value corresponding to a 1% change in foreign-exchange rates. Any breach of these limits that remains uncured for five business days is an automatic enforcement event.

The use of derivatives introduces the potential for additional credit risk. Moreover, in the event of enforcement, many of these transactions may have to be unwound, with suitable replacements found. Beta's structure requires that its counterparties be rated at least to investment grade by Standard & Poor's and that exposures under hedge contracts be held to their own concentration levels. Capital must be allocated against the exposures. Currently, exposures under Beta's hedge contracts are relatively small and well within concentration limits.

Liquidity

When Beta purchases an asset, it may finance the purchase with the proceeds of a commercial paper issuance. To the extent that assets and liabilities are not maturity matched, Beta may be exposed to refinancing or liquidity risk. Because of the potential for a liquidity shortage, Beta is structured to limit the amount of liabilities that may mature in any one-week, two-week, or one-month period throughout the life of the portfolio. The limit structure is based on the amount of liquidity available to Beta via liquidity facilities provided by 'A-1+' rated financial institutions and asset-based liquidity eligible assets.

The amount currently available to Beta in the form of liquidity facilities is US\$900 million. This limits the amount of liabilities that can mature in any one week to US\$575 million, in any two-week period to US\$1.15 billion, and in any one-month period to US\$2.47 billion. These facilities have not been required to date.

Enforcement

Another feature of Beta's structure is minimum tolerance for losses. This limit is the amount that Beta could lose for any reason and still remain in operation. If the limit is exceeded, the structure would go into enforcement.

In enforcement, the security trustee (the Law Debenture Trust Corp.) would realize its charge over the collateral for the benefit of all secured obligors. The liquidity facilities would be drawn down, and the portfolio would be organized to create pools of assets and liabilities. These pools will be formed on the basis of maturity of the liabilities.

Medium-term note holders can exercise their option to redeem at this time if they wish to exercise the right of early redemption. Once all the pools have been created and all liabilities are assigned assets, all excess assets will be allocated to a residual pool. This residual pool in turn will be allocated on a pro rata basis to all other

pools to cover defaults. The security trustee administers the pools and repays all senior obligations as they come due; capital note or equity holders do not receive any dividends until all other obligors have been paid in full.

- Automatic enforcement events include:
- Failure to maintain the ‘AAA/A-1+’ rating from Standard & Poor’s;
- Failure without cure of capital adequacy,
- Failure without cure of liquidity tests and limits,
- Failure without cure of interest rate sensitivity tests,
- Failure without cure of exchange rate sensitivity tests,
- Failure to repay noteholders when due within the grace period; and
- Failure to repay a derivative counterparty when due within the grace period.

Surveillance

Beta has applied two layers of controls for ongoing surveillance to ensure it adheres strictly to its operating procedures and limit structure. First, Citibank Credit Structures’ internal control department monitors limit compliance daily, and provides portfolio composition and status reports to Standard & Poor’s on a weekly basis. Second, Beta is subject to a full audit by KPMG Peat Marwick on a regular basis, the results of which are provided to Standard & Poor’s.

Centauri Corp.

Analysts:

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Reza Bahar, New York (1) 212-438-2390

Credit Rating

AAA/A-1+

Credit Rating History

Sept. 9, 1996

AAA/A-1+

Outstanding Rating(s)

Counterparty credit	AAA/A-1+
Senior secured	AAA
Commercial paper	A-1+

Subsidiaries

CC (USA) Inc.	
Senior secured	AAA
Commercial paper	A-1+

Rationale

The ratings for senior U.S. and European commercial paper and medium-term note programs for Centauri Corp. are based on Standard & Poor's assessment of Centauri's structure and capital adequacy. The company must manage its investment portfolio within strict leverage, credit quality, and diversification limits and maintain sufficient capital support to allow it to perform on its obligations in full and on a timely basis. Should an enforcement event occur (*see Enforcement section*), the security trustee will realize its charge on the asset portfolio, and manage and liquidate the assets to repay all senior obligations as they come due in accordance with predetermined guidelines.

Profile

Centauri is a structured investment company incorporated in the Cayman Islands. It issues commercial paper and medium-term notes directly in the euro markets. CC (USA) Inc., its Delaware subsidiary, was formed for the purpose of issuing commercial paper and medium-term notes in the U.S. domestic market. CC (USA) lends the proceeds from an issuance to Centauri through an intercompany loan agreement.

Citibank International PLC has been contracted to serve as investment manager, group funding manager, defeasance manager, and custodian to Centauri.

Standard & Poor's concentrated its analysis of Centauri in six principal areas:

- Asset and liability portfolio composition,
- Market risk sensitivity,
- Leverage and capital adequacy,
- Liquidity,
- Defeasance, and
- Enforcement.

Portfolio Composition

Centauri uses the proceeds of the debt programs to purchase securities of various currencies, ratings, and tenors. It acquires these assets with a view to holding them until maturity. Interest rate and foreign exchange exposure is managed through the use of derivative transactions that swap all obligations back to floating-rate exposure. All securities and derivative counterparties must be rated at least 'BBB-' at the initiation of the transaction.

Portfolio diversification requirements must also be strictly observed. The security portfolio is subject to sector limits and each sector is further divided into subgroups. The portfolio is also subject to individual obligor and geographic concentration limits and maturity constraints. Furthermore, derivative counterparties are subject to these limits. Any breach of exposure limit requires the value of such excess to be treated as an ineligible asset for capital calculations.

Market Risk

To manage market risk, Centauri transacts in derivatives. The company's risk management policy is adhered to by way of swaps, options, and forwards across various interest rate and currency bases to convert all assets and liabilities to floating interest rates. The resultant market risk neutrality is tested for both interest rate and currency exposures. The impact of a single basis point parallel shift in the yield curve may not cause more than an 0.2 basis point change in portfolio value.

Moreover, the impact of shifts to the individual points on the yield curve of portfolio value are also tested. Similarly, a 1% change in the value of all currencies to the U.S. dollar, aggregated without regard to whether they are positive or negative, may not cause the change in portfolio value to exceed two basis points. These tests are conducted on a daily basis, and any breach carries a cure period of five business days.

Leverage and Capital Adequacy

To establish the adequacy of capital, Centauri has developed a proprietary risk model. Centauri's risk management policies require a portfolio that remains insensitive to movements in interest rates and exchange rates. The portfolio, however, remains exposed to credit risk and the widening of credit spreads. The risk model takes account of the credit, market and liquidity risk arising from the company's assets, liabilities, and hedge agreements to determine the resources needed to prudently cover potential losses under stressed conditions.

The model is run weekly and the minimum required capital for normal operation and for defeasance is determined. Centauri also calculates a capital loss test daily, whereby shareholder equity must not be less than 50% of the actual capital. Should the shareholder equity fall below this level, an enforcement event is triggered. In addition to satisfying the capital requirement driven by the model, the structure must also maintain a leverage ratio below pre-established levels.

Liquidity

Centauri purchases securities of varying maturities based on their value to the structure. To the extent that assets and liabilities are not maturity-matched, Centauri is exposed to refinancing risk. This risk is managed by limiting the peak amount of funding required in any five rolling business-day period over the next year. Liquidity support equal to, or greater than, three times the maximum five-day outflow must be maintained at all times. The cash outflows are calculated on a daily, forward rolling, cumulative basis in each five-day test period.

Centauri has liquidity resources available in two forms: committed bank lines from 'A-1+' rated financial institutions and specific liquidity eligible assets. The specific assets may be highly-rated government, supranational, financial institution, corporate, and asset-backed securities. Assets are discounted so that their liquidity contribution conservatively reflects their potential value in the event they have to be sold on short notice to meet a cash requirement. Each day, Centauri must test its liquidity resources against its net cumulative outflow limits. Any breach must be cured within five business days. Currently, Centauri has committed liquidity facilities of US\$725 million available to it from a small group of 'A-1+' rated banks.

Defeasance

Defeasance occurs if Centauri's rating is downgraded below 'AA-'. This requires Citibank International PLC, as defeasance manager, to wind down the portfolio. No additional debt may be issued, and existing debt will be repaid as it falls due

from the proceeds of asset maturities or sales. All portfolio limits and restrictions must still be observed. The defeasance manager must still perform all daily and weekly tests, and uncured breaches within cure periods are still enforcement events.

Surveillance

To ensure that Centauri adheres strictly to its operating procedures and limit structure, it has applied two layers of controls for ongoing surveillance. First, Citibank Credit Structures' internal control department monitors limit compliance daily and provides portfolio composition and status reports to Standard & Poor's every week. Second, Centauri is subject to a full audit by KPMG Peat Marwick on a regular basis, the results of which are also provided to Standard & Poor's.

Credit Lyonnais Derivative Program

Analysts:

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Krishan Nagpal, New York (1) 212-438-2552

Credit Rating		Credit Rating History	
Financial program	AAAt	Oct. 26, 1994	AAAt
Outstanding Rating(s)		Sovereign Rating	
Financial program	AAAt	United States of America	AAA/Stable/A-1+

Rationale

The rating assigned to the Credit Lyonnais Derivatives Program (the program) is based on Standard & Poor's assessment of the program's legal, financial, and operating structure. This program was offered initially through Credit Lyonnais' New York branch (CLNY), which enters directly into a variety of interest rate and foreign-exchange derivatives products with counterparties. Credit Lyonnais' Paris branch joined the program during the second quarter of 1996. CLNY's obligations under the program are guaranteed by CLFG, a bankruptcy-remote, special-purpose corporation wholly owned by Financial Security Assurance Holdings Ltd. CLFG's sole purpose is to guarantee CLNY's net payment obligations to counterparties under the program. CLFG benefits from a 35-year, irrevocable and unconditional policy in an initial amount of US\$200 million provided to it by its affiliate, Financial Security Assurance Inc. Financial Security Assurance Inc. will provide, at CLNY's option, an additional policy, subject to a limit and certain conditions. Financial Security Assurance Inc. is an 'AAA' rated insurer. CLFG's guarantees are further enhanced by CLNY's pledge of collateral in the form of high-quality liquid assets and CLNY's net receivables under the guaranteed derivatives

contracts. If CLNY, backed by the global resources of Credit Lyonnais, fails to meet its obligations to counterparties under the program, CLFG will fulfill the guaranteed net payment obligations of CLNY.

Since it began operating in May 1995, the program has far exceeded its growth projections. The program's notional principal is concentrated in credits rated 'A' or better.

This program is a termination structure under which the obligations arising from the guaranteed derivatives contracts will accelerate upon the occurrence of certain events. The program is the first to provide to counterparties beneficial supplements to midmarket valuation of transactions accelerated in a termination event. The 'AAAt' rating reflects Standard & Poor's opinion of the program's extremely strong financial capacity to meet the guaranteed net payment obligations of CLNY according to their contracted terms, whether on scheduled maturity or upon a termination event. The rating does not address the likelihood of the occurrence of a termination event.

Legal Risks

Under the program, CLNY enters directly into derivatives transactions with counterparties. CLFG guarantees CLNY's net payment obligations arising under each guaranteed master agreement. CLNY secures its program reimbursement obligation to CLFG through the pledge of collateral to an independent collateral trustee—namely, Chase Manhattan Bank. This collateral consists of CLNY's net receivables under the program, any collateral posted by counterparties, and high-quality liquid assets posted by CLNY based on weekly valuations of the program's portfolio.

CLNY is a New York branch of Credit Lyonnais, a state-owned French bank. Consequently, CLNY is subject to regulatory oversight by the Superintendent of Banks of the State of New York, and its insolvency is governed by the New York Banking Law.

The legal issues concerning this structure relate to: enforceability of the program's documentation and, in the event of CLNY's insolvency, the enforceability of the set-off and netting provisions in the guaranteed master agreements; and timely availability of the collateral pledged under the program. Standard & Poor's has received legal opinions from CLNY's counsel that, under the New York Banking Law: the guaranteed transactions would be viewed as qualified financial contracts enabling the collateral trustee (primarily on behalf of CLFG) to liquidate and apply the proceeds of collateral to satisfy CLFG's guarantees of the net payment obligations of CLNY arising from transactions under the program without being subject to a stay; and the counterparties' waiver of their rights to set off amounts pledged by CLNY as receivables under the

program against other amounts owed to them by CLNY would be enforceable. All legal opinions are based on the assumptions and are subject to the qualifications stated therein.

CLNY and program counterparties mutually may agree to enter into collateral agreements. Collateral posted by a guaranteed counterparty under the program will be considered available as credit support to the program upon pledge by CLNY to the collateral trustee, only to the extent necessary to cover that specific counterparty's payment obligation to the program.

CLFG has a board of three directors, one of whom is affiliated neither with Financial Security Assurance Inc. nor with Credit Lyonnais. CLFG's sole purpose is to unconditionally and irrevocably guarantee, without limit, the net payment obligations of CLNY under the guaranteed contracts. Since CLFG guarantees cover CLNY's net payment obligations to counterparties under the program, the need to determine whether netting is enforceable in related jurisdictions is therefore eliminated.

Financial Risks

The program's financial structure is designed to provide coverage with a very high degree of certainty for market and credit risks during a termination period, in addition to the exposure associated with its day-to-day activities. The program does not use mirror contracts as a method of market-risk mitigation.

CLNY is obligated to make scheduled settlement payments under the guaranteed transactions prior to a termination event. Consequently, exposure resulting from the program's activities is covered by Credit Lyonnais' global resources. Should a termination event occur, however, the net payment obligations of CLNY will have to be covered by the financial resources of the program. These financial resources are the collateral in the form of high-quality liquid assets posted by CLNY, as well as its net receivables under the program and the Financial Security Assurance Inc. policy.

To ensure that a sufficient level of coverage is available to the program, CLNY uses a risk model through which, by means of "Monte Carlo" simulation, assessments are made concerning the adequacy of financial resources relative to the program's net liabilities, as well as potential losses during a termination window. The risk model takes the program's actual portfolio as an input. It then simulates a range of index paths and default events to determine a distribution of potential loss against which coverage is established at a high level of confidence. The incorporated default rates are stressed long-term cumulative historical default probabilities, as provided by Standard & Poor's. Sufficient runs of the simulation model are conducted to establish the stability of loss distributions. The model is run at least weekly. The risk model's methodology addresses the risks of counterparty default and counterparty credit concentration, as well as potential market risks.

On the basis of the risk model's results, CLNY posts collateral against the net payable position of the program's portfolio (should such a condition exist at the time a collateral determination is made), as well as a buffer to cover potential credit losses from counterparty defaults and market losses due to index moves that may occur in the interval from the last successfully satisfied collateral determination through a termination window. The buffer is determined as the maximum of one of two calculations. The first is generated by a joint simulation modeling of credit and market loss. The second is determined by the sum of certain exposures (to establish provision for the program against potential defaults by investment-grade counterparties to which it has the largest exposures) and a simulation modeling of potential market loss. In the modeling of credit loss, long-term cumulative default probability inputs are stressed substantially relative to the historical experience of corporate bond default rates. No recovery is assumed for simulated defaults.

Under the program, only the net payment obligations of guaranteed transactions are covered for each counterparty. Thus, the calculation of risk uses the benefit of netting regardless of counterparty domicile.

Collateral calculations include adjustments to midmarket valuations to provide coverage for termination and assignment valuations at the counterparty's side of the market. The program has structural incentives to maintain a diversified portfolio of high quality counterparties. Additional collateral is posted to cover over-limit counterparty exposures, exposure to noninvestment-grade and unrated counterparties, and product tenor overlimits. To further strengthen the resources available to the program, the collateral requirement algorithm reflects less than full benefit from the Financial Security Assurance Inc. policy.

Operating Risks

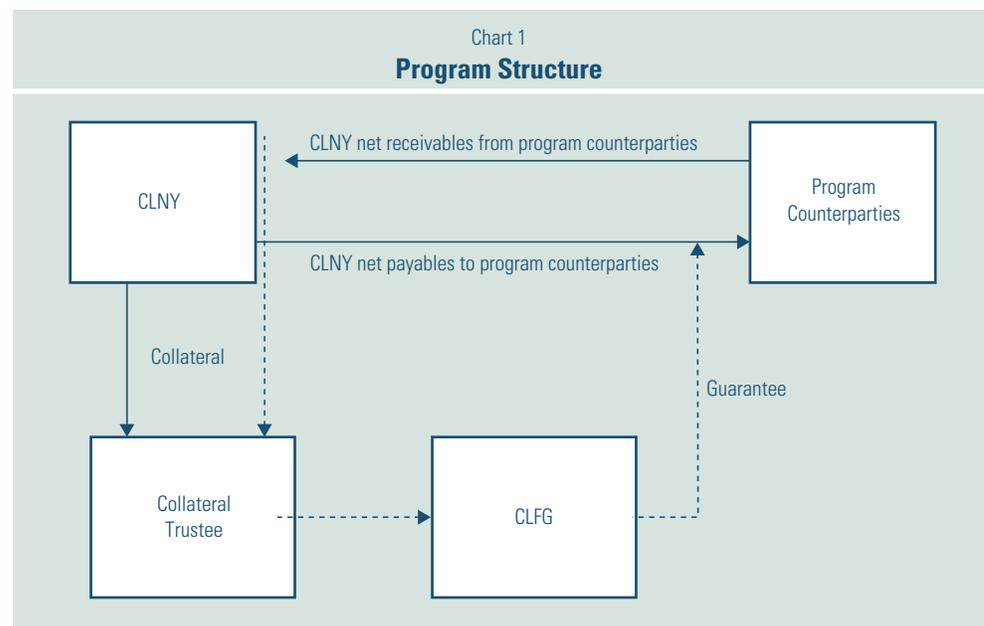
Under the program's operating guidelines, CLNY enters into a new guaranteed master agreement, based on the International Swaps & Derivatives Association or the Association Francaise Des Banques documentation with each of its counterparties. Each guaranteed master agreement includes a CLFG guarantee as a credit support agreement, specifies the program's coverage under the guarantee, and informs the counterparty that full, two-way payments will be required upon an early termination. Furthermore, it specifies that there will not be any set-off of the guaranteed transactions against other transactions with CLNY or any other Credit Lyonnais branch or affiliate. The termination trigger events and the termination procedure also are described in the guaranteed master agreement. The program's documentation for counterparties' guaranteed transactions is clearly marked and segregated from CLNY's other derivative transactions with the same counterparties. CLNY is permitted to offer its program counterparties the option to enter into two-way, mark-to-market

agreements, under which the party that is out-of-the-money will post collateral to the party that is in-the-money to cover an exposure above a certain, mutually agreed upon limit not exceeding the program's preestablished limits.

Under the program, CLNY transacts with investment-grade counterparties up to limits established proportionally to the amount of the Financial Security Assurance Inc. policy (initially US\$200 million). The program's credit risk in excess of the preestablished limits caused by counterparties' downgrade, as well as exposures to noninvestment-grade and unrated counterparties, is fully collateralized by CLNY (*see chart*).

If the claims-paying ability of Financial Security Assurance Inc. is placed on Standard & Poor's CreditWatch or downgraded below 'AAA', CLNY will be required to post collateral with an adjusted market value equal to the policy amount, until another 'AAA' rated financial insurer replaces Financial Security Assurance Inc. and issues a substitute policy.

The program's collateral is invested in 'AAA/A-1+' securities consistent with Standard & Poor's permitted investments for 'AAA' structured financings. Additionally, the market value of the collateral is determined by the collateral trustee on a weekly basis using pricing services acceptable to Standard & Poor's and adjusted according to Standard & Poor's market value discount factors. CLNY's failure to satisfy a shortfall in required collateral within a three-business-day cure period will result in the termination of the program. In addition, a guaranteed counterparty will have the option to make an individual claim under the CLFG guarantee to recover any



net scheduled settlement payment that CLNY may fail to pay under the guaranteed master agreement, subject to a two-business-day cure period following notice of such claim to the collateral trustee.

A program downgrade does not constitute a termination trigger event. However, in case of a program downgrade, each counterparty will have the option to terminate all of its transactions guaranteed under the program. A counterparty may exercise this option within a seven-day period. Counterparties will be offered midmarket values calculated by CLNY using its own valuation model.

The following events constitute termination trigger events, upon which the program will be terminated and full two-way payments will be required:

- Failure by CLNY to satisfy a shortfall in required collateral, subject to a three-business-day cure period;
- Failure by CLNY to make a cash transfer payment to cover an individual payment claim made by a guaranteed counterparty under a CLFG guarantee, subject to a two-business-day cure period;
- Failure by CLNY to post collateral with an adjusted market value equal to the amount of the policy within a three-business-day period upon the insurer's downgrade, insolvency, or placement on CreditWatch; and
- Insolvency events relating to CLNY or Credit Lyonnais.

During a collateral cure period, CLNY will be precluded from entering into transactions under the program, unless they are risk-reducing transactions.

Counterparties will be notified of the valuation date within two global business days after a termination trigger event has occurred. Valuation of counterparties' transactions will take effect on the designated valuation date five global business days from the termination trigger date. The valuation date may be postponed by up to five additional global business days in case of distressed market conditions.

If a termination trigger event occurs, the investment-grade counterparties will have the option to terminate all their guaranteed transactions; or to have all their guaranteed transactions assigned to a dealer. In either case, an investment-grade counterparty will seek quotes from three dealers chosen from a list of designated dealers, of which the middle quote will be used for pricing its transactions or taking assignment. Transactions with noninvestment-grade or unrated counterparties will be valued by the collateral trustee using the proprietary valuation model for the program, market inputs for which will be obtained from designated market dealers. The program provides counterparties with beneficial supplements to midmarket valuation of transactions accelerated in a termination event. All termination payments will be made in U.S. dollars. Payments to the program will be required on the third global business day after the valuation date. Payments from the program will be paid on the seventh global business day after the valuation date.

The program's day-to-day operation is managed by designated officers and is overseen by CLNY senior management, according to the program's established operating guidelines. In addition, the program's independent auditors, Ernst & Young, verify weekly the program's compliance with its collateral and policy requirements, as well as counterparty and product restrictions. The independent auditor also will oversee certain aspects of the program's termination process in the event of an early termination.

Dorada Corp.

Analysts:

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Credit Rating

AAA/A-1+

Credit Rating History

Sept. 17, 1998 AAA/A-1+

Outstanding Rating(s)

Counterparty credit	AAA/A-1+
Commercial paper	A-1+
Senior secured	AAA

Subsidiaries

Dorada Finance Inc.	
Commercial paper	A-1+
Senior secured	AAA

Rationale

The ratings for Dorada Corp.'s senior U.S. and European commercial paper and medium-term note programs are based on Standard & Poor's assessment of Dorada's structure and capital adequacy. The company must manage its investment portfolio within strict leverage, credit quality, and diversification limits, and maintain sufficient capital support to provide it with the capability to perform on its obligations in full on a timely basis. Should an enforcement event occur (*see Enforcement section*), the security trustee will realize its charge on the asset portfolio, and manage and liquidate the assets to repay all senior obligations as they come due, in accordance with predetermined guidelines.

Profile

Dorada Corp. is a structured investment company incorporated in the Cayman Islands. It issues commercial paper and medium-term notes directly in the European markets. Dorada Finance Inc., its wholly owned Delaware subsidiary, was formed for the purpose of co-issuing commercial paper and medium term notes in the U.S. domestic market with Dorada, both being jointly and severally liable under those obligations. Citibank International PLC has been contracted to serve as investment manager, group funding manager, defeasance manager, and custodian to Dorada.

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- Standard & Poor's concentrated its analysis of Dorada in six principal areas:
- Asset and liability portfolio composition;
 - Market risk sensitivity;
 - Leverage and capital adequacy;
 - Liquidity;
 - Defeasance; and
 - Enforcement.

Portfolio Composition

Dorada uses the proceeds of the debt programs to purchase securities of various currencies, ratings, and tenors. It acquires these assets with a view to holding them until maturity. Interest rate and foreign exchange exposure is managed through the use of derivative transactions that swap all obligations back to floating-rate exposure. All securities and derivative counterparties must be rated at least 'BBB-' at the initiation of the transaction. Portfolio diversification requirements must also be strictly observed. The security portfolio is subject to sector limits and each of these sectors is further divided into subgroups. The portfolio is also subject to individual obligor and geographic concentration limits and maturity constraints. Derivative counterparties are also subject to these limits. Any breach of any exposure limit requires the value of such excess to be treated as an ineligible asset for capital calculations.

Market Risk

To manage market risk, Dorada transacts in derivatives. The company's risk management policy is adhered to by using swaps, options, and forwards across various interest rate and currency bases to convert all assets and liabilities to floating interest rates. The resultant market risk neutrality is tested for both interest rate and currency exposures. The impact of a single basis point parallel shift in the yield curve may not cause more than a 0.2 basis point change in portfolio value. Moreover, the impact of shifts to the individual points on the yield curve of portfolio value are also tested. Similarly, a 1% change in the value of all currencies to the U.S. dollar aggregated, without regard to whether they are positive or negative, may not cause the change in portfolio value to exceed 20 basis points. These tests are conducted on a daily basis and any breach thereof has a five-business-day cure period.

Leverage and Capital Adequacy

To establish the adequacy of capital, Citibank has developed a proprietary risk model for Dorada. The risk management policies of Dorada require the maintenance of a portfolio which remains insensitive to movements in interest rates and exchange rates. The portfolio, however, remains exposed to credit risk and widening credit spreads. The risk model takes account of the credit, market, and liquidity risk arising from the company's assets, liabilities, and hedge agreements to determine the resources needed to prudently cover potential losses under stressed conditions.

The model is run on a weekly basis and the minimum required capital for normal operation and defeasance is determined. Dorada also calculates a capital loss test on a daily basis, whereby shareholder equity (including capital notes) must not be less than 50% of the actual capital. Should the shareholder equity fall below the latter, an enforcement event is triggered. In addition to satisfying the capital requirement driven by the model, the structure must also maintain a leverage ratio below preestablished levels.

Liquidity

Dorada purchases securities of varying maturities based on their value to the structure. To the extent that the assets and liabilities are not maturity-matched, Dorada is exposed to refinancing risk. This risk is managed by limiting the peak amount of funding required in any five rolling day period over the next year. Liquidity support equal to or greater than three times the maximum five-day outflow must be maintained at all times. The cash outflows are calculated on a daily, forward rolling, cumulative basis in each five-day test period.

Dorada has liquidity resources available to it in two forms: committed bank lines from 'A-1+' rated financial institutions, and specific liquidity-eligible assets. The specific assets may be highly rated government securities, or supranational, financial institution, corporate, and asset-backed securities. These assets are discounted such that their liquidity contribution conservatively reflects their potential value, should they have to be sold on short notice to meet a cash requirement. Each day, Dorada must test its liquidity resources against its net cumulative outflow limits. Any breach must be cured within five business days. Currently, Dorada has committed liquidity facilities of US\$400 million available to it from a small group of 'A-1+' rated banks.

Defeasance

Defeasance occurs if the rating of Dorada is downgraded below 'AA-'. This requires Citibank, as defeasance manager, to wind down the portfolio. No additional debt may be issued, and existing debt will be repaid as it falls due from the proceeds of

asset maturities or sales. All portfolio limits and restrictions must still be observed. The defeasance manager must still perform all daily and weekly tests, and uncured breaches thereof within the applicable cure periods are still enforcement events.

Enforcement

Dorada has contracted with the Law Debenture Trust Corp. to serve as the security trustee. Should an enforcement event occur, the security trustee realizes its charge over the collateral for the benefit of all the secured obligors. Enforcement events include:

- Failure to maintain a rating of at least 'BBB-';
- The insolvency or winding up of Dorada;
- Failure without cure of the capital loss limit;
- Failure without cure of the liquidity tests;
- Failure without cure of the interest rate sensitivity tests;
- Failure without cure of the exchange rate sensitivity tests;
- Failure to repay any liquidity provider when due within the applicable grace period;
- Failure to repay any of the noteholders when due within the applicable grace period; and
- Failure to repay any derivative counterparty when due within the applicable grace period.

Should any of the above events occur, an enforcement event will ensue, and the security trustee is then required, acting in the interests of all secured obligors, to realize its lien over the security. The security trustee will then manage the portfolio within predetermined guidelines to repay all senior obligations as they come due.

Surveillance

To ensure that Dorada adheres strictly to its operating procedures and limit structure, it has applied two layers of controls for ongoing surveillance. Firstly, Citibank AIS Credit Structures's internal control department monitors limit compliance on a daily basis and provides portfolio composition and status reports to Standard & Poor's each week. Secondly, Dorada is subject to a full audit by financial services concern KPMG on a regular basis, the results of which are also provided to Standard & Poor's.

Five Finance Corp.

Analysts:

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Krishan Nagpal, New York (1) 212-438-2552
Reza Bahar, New York (1) 212-438-2390

Credit Rating

AAA/A-1+

Credit Rating History

Nov. 15, 1999

AAA/A-1+

Outstanding Rating(s)

Counterparty credit	AAA/A-1+
Commercial paper	A-1+
Senior secured	AAA

Subsidiaries

Five Finance Inc.	
Senior secured	AAA
Commercial paper	A-1+

Rationale

The ratings for Five Finance Corp.'s (Five) senior US and European commercial paper and medium-term note programs are based on Standard & Poor's assessment of Five's structure and capital adequacy. The company must manage its investment portfolio within strict leverage, credit quality, and diversification limits. It must also maintain sufficient capital support to provide it with the capability to perform on its obligations in full, on a timely basis. Should an enforcement event occur (*see Enforcement section*), the security trustee will realize its charge on the asset portfolio, and manage and liquidate the assets to repay all senior obligations as they come due in accordance with predetermined guidelines.

Profile

Five is a structured investment company incorporated in the Cayman Islands. It issues commercial paper and medium term notes directly in the European markets. Five Finance Inc. (FFI), its single wholly owned Delaware subsidiary, was formed for the purpose of co-issuing commercial paper and medium-term notes in the U.S. domestic market along with Five. Both are jointly and severally liable under those obligations. All CP holders (Five and FFI), all MTN holders (Five and FFI), the derivative

counterparties, and the liquidity providers are senior secured and pari passu. Citibank International PLC (Citibank) has been contracted to serve as investment manager, group funding manager, defeasance manager, global custodian, and to provide operational support to Five.

Although Five is the fifth structured investment company created and managed by Citibank, it does have a number of features that are departures from the previous four. Five may purchase loans as eligible portfolio assets; it may purchase noninvestment-grade assets (both loans and securities) as eligible assets; and its capital adequacy model has been enhanced to capture the additional risks associated with this greater flexibility. Standard & Poor's concentrated its analysis of these new features, as well as the conventional features of Five, in six principal areas:

- Asset and liability portfolio composition,
- Market risk sensitivity,
- Leverage and capital adequacy,
- Liquidity,
- Defeasance, and
- Enforcement.

Portfolio Composition

Five uses the proceeds of its debt programs to purchase loans and securities of various currencies, ratings, and tenors. It acquires these assets with a view to holding them until maturity, but is not required to do so. Interest rate and foreign exchange exposure is managed through the use of derivative transactions that swap all obligations back to floating rate exposure, or they are match-funded. All derivative counterparties must be rated at least 'BBB-' and all loans and securities at least 'B-' at the initiation of the transaction. Portfolio diversification requirements must be strictly observed.

The portfolio is subject to sector limits and each of these sectors is further divided into subgroups. The portfolio is also subject to individual obligor and geographic concentration limits, as well as minimum rating requirements for the entire portfolio taken as a whole. Maturity constraints are imposed on all assets and derivatives, as well as on the maximum weighted average life of the asset portfolio and minimum weighted average life of the liabilities. Derivative counterparties are also subject to these limits. Any breach of any exposure limit requires the value of such excess to be treated as an ineligible asset for capital calculations.

As the loans are a new eligible asset class, Citibank has proposed limits to ensure proper management, pricing, and capital allocation. All loans are subject to the following criteria:

- Purchases are made only by assignment;
- Assignments are made under New York or other U.S. state law as long as the structured investment vehicle receives a rating confirmation from Standard & Poor's;
- Loans will be denominated in USD;
- The amount of loans that can be included in the portfolio will be limited;
- External legal counsel will provide opinions on the perfection of the assignments of the loans or security interest therein, in compliance with Standard & Poor's criteria;
- Security interest in the loans will be registered in Grand Cayman, England, and Wales, and for NY law loans through UCC filing in the state of New York;
- Assignment documents relating to loans will be kept in safe keeping (fire proof storage) with the custodian, with direct security taken over all certificated loan assets;
- Specified pricing services will be used to value the loans at least weekly; and
- Stressed historical volatilities will be used in the calculation of capital adequacy.

Market Risk

To manage market risk, Five transacts in derivatives. The company's risk management policy is implemented by using swaps, options, and forwards across various interest rate and currency bases to convert all assets and liabilities to floating interest rates. The resultant market-risk neutrality is tested for both interest rate and currency exposures. The impact of a single basis point parallel shift in the yield curve may not cause more than a 0.4 basis point change in net portfolio value.

Moreover, the impact of shifts to the individual points on the yield curve on net portfolio value is also tested. Similarly, a 1% change in the value of all currencies to the U.S. dollar, aggregated without regard to whether they are positive or negative, may not cause the change in net portfolio value to exceed 4.0 basis points. These tests are conducted on a daily basis and any breach thereof has a five business day cure period.

Leverage and Capital Adequacy

To establish the adequacy of capital, Citibank has developed a proprietary risk model for Five. The risk management policies of Five require maintaining a portfolio which remains insensitive to movements in interest and exchange rates. The portfolio, however, is exposed to credit risk and the widening of credit spreads. The risk model

takes account of the credit, market, and liquidity risk arising from the company's assets, liabilities, and hedge agreements to determine that Five has sufficient resources to prudently cover potential losses under stressed conditions. It analyzes an extremely broad range of scenarios and has benefited from extensive development effort over the past few years to take into account both individual risks and the correlation between them.

The model is run on a weekly basis to demonstrate that the company has sufficient capital to maintain its top ratings. Five also calculates a capital loss test on a daily basis whereby income noteholder interest, which measures the remaining capital after taking account of any losses suffered by the issuer, must not be less than 50% of the income note amount (the approximate book value of capital). Should this not be the case, an enforcement event is triggered. In addition to satisfying the capital requirement driven by the model, the structure must also maintain a leverage ratio below pre-established levels.

Liquidity

Five purchases securities of varying maturities based on their value to the structure. To the extent that the assets and liabilities are not maturity matched, Five is exposed to refinancing risk. This risk is managed by limiting the peak amount of funding required in any rolling five day period over the next year. Liquidity support equal to or greater than three times the maximum five-day outflow must be maintained at all times. The cash outflows are calculated on a daily, forward-rolling, cumulative basis in each five-day test period.

Five has liquidity resources available to it in two forms: committed bank lines from 'A-1+' rated financial institutions, and specific liquidity eligible assets. The specific assets may be highly rated government securities, supranational, financial institution, corporate, and asset backed securities. These assets are discounted such that their liquidity contribution conservatively reflects their potential value should they have to be sold on short notice to meet a cash requirement. Each day, Five must test its liquidity resources against its maximum cumulative outflow limits. Any breach must be cured within five business days.

Defeasance

Defeasance occurs if the rating of Five is downgraded below 'AA-'. This requires Citibank International PLC, as defeasance manager, to wind down the portfolio. No additional debt may be issued, existing debt will be repaid as it falls due from the proceeds of asset maturities or sales, and there will be no distributions to income

note holders. All portfolio limits and restrictions must still be observed. Further, the defeasance manager must still perform all daily and weekly tests, and uncured breaches within the applicable cure periods are still enforcement events.

Enforcement

Five has contracted with the Law Debenture Trust Corp. to serve as the security trustee. Should an enforcement event occur, the security trustee realizes its charge over the collateral for the benefit of all the secured obligors. Enforcement events include:

- Failure to maintain a rating of at least 'BBB-';
- Insolvency or winding up of Five;
- Failure without cure of the capital loss limit;
- Failure without cure of the liquidity tests;
- Failure without cure of the interest rate sensitivity tests;
- Failure without cure of the exchange rate sensitivity tests;
- Failure to repay any liquidity provider when due within the applicable grace period;
- Failure to repay any of the noteholders when due within the applicable grace period, subject to the terms of each individual programme, and
- Failure to repay any derivative counterparty when due within the applicable grace period.

Should any of the above events occur, an enforcement event will ensue and the security trustee is then required, acting in the interests of all secured creditors, to realize its lien over the security. The security trustee will then manage the portfolio within predetermined guidelines to repay all senior obligations as they come due.

Surveillance

To ensure that Five adheres strictly to its operating procedures and limit structure, it has applied two layers of controls for ongoing surveillance. Firstly, Citibank Credit Structures' internal control department monitors limit compliance on a daily basis and provides portfolio composition and status reports to Standard & Poor's each week. Secondly, Five is subject to both internal Citibank audits, and external financial audits by KPMG, the results of which are also provided to Standard & Poor's.

GS Financial Products International L.P.

Analysts:

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Credit Rating

AAA

Outstanding Rating(s)

Counterparty credit	AAA
Senior unsecured	AAA

Credit Rating History

March 18, 1992	AAA
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Subsidiaries

GS Financial Products U.S., L.P.

Counterparty credit	AAA
Senior unsecured	AAA

Rationale

The counterparty rating on the Goldman Sachs Group's two special purpose derivative product companies, GS Financial Products International L.P. (GSFPI) and GS Financial Products U.S. (GSFPUS), and the debt rating on the note issues of each are based on:

- The bankruptcy-remoteness of the vehicles from The Goldman Sachs Group and its various other affiliates;
- The adequacy of partners' capital and available liquidity, tested regularly through the use of a risk model; and
- Operating policies that limit market risk, overall credit risk, and the concentration of exposures to counterparties and sovereigns.

Since inception, the two companies have expanded the list of products in which they may contract to include a limited amount of derivatives indexed to certain commodity indices. They have also established a sequence of triggers under which a contingent manager for the structures would be engaged and familiarized should the Goldman Sachs Group (Group) deteriorate financially. The contingent manager would take over the responsibility of operating the respective companies should Group fail.

Overview

In February 1992, Goldman Sachs established a legal and organizational framework to support two interrelated bankruptcy remote special purpose derivative product companies. The first of these, GSFPI, was capitalized and began operations the same month.

The sister company, GSFPOS, was capitalized in November 1992. An 'AAA' rating for the company was finalized in September 1993. Both GSFPI and GSFPOS are organized as Cayman Islands exempted limited partnerships within the Exempted Limited Partnership Law, 1991, of the Cayman Islands. The two companies share common management and operating policies. These have been updated since their formulation in 1992.

When it was capitalized, GSFPOS established a general partnership interest in GSFPI. As a general partner, GSFPOS is liable for the obligations of GSFPI. GSFPOS is managed through a corporate general partner, GS Financial Products U.S. Co., a Cayman Islands limited liability company. Because of its holdings, the assets of GS Financial Products U.S. Co., though relatively small, stand as further support for GSFPI and GSFPOS. The three entities' assets are consolidated within the balance sheet of GS Financial Products L.P. which exists, essentially, as a shell.

On a consolidated basis, GSFPI and GSFPOS were reported in audited accounts to have combined assets in excess of US\$306 million and partners' capital of approximately US\$180 million as of Oct. 29, 1999. Both GSFPI and GSFPOS were organized to operate as credit intermediaries, engaging in the transaction of financial instruments, primarily derivative products. The operations of GSFPOS are more restricted than those of GSFPI, in that GSFPOS is committed to limiting its activity in instruments which could be considered securities under U.S. federal securities law so that it would not be subject to regulation.

While individual derivative instruments may fluctuate substantially in value over time due to a variety of factors, derivative products may be combined to establish a portfolio, the value of which is largely, or completely, insulated from market moves. While their operating procedures do not explicitly require GSFPI and GSFPOS to maintain a balanced book, the companies have committed themselves, in public information memoranda and in offering circulars associated with debt offerings and in U.S. government filings, to endeavor to insulate their respective positions from market risk by means of hedges and matching transactions.

To this end, GSFPI and GSFPOS, respectively, have established agreements with Goldman Sachs Group affiliates through which matching transactions may be facilitated. The obligations of the respective affiliates to GSFPI and GSFPOS under those agreements are unconditionally and irrevocably guaranteed by the Goldman Sachs Group.

Both GSFPI and GSFPIUS have issued debt. Payment obligations of each subsidiary under notes and financial contracts constitute pari passu senior obligations of the entity. The notes are not the liabilities of, nor are they guaranteed by, the Group.

Operations

GSFPI

GSFPI began active operation on March 17, 1992 with an initial transaction involving the purchase of a substantially hedged book of put and call options and warrants on the Nikkei 225 index of Japanese stocks. The purchase and associated transactions were financed, in part, by a series of note issues amounting to ¥30 billion.

Since the initial transaction, GSFPI has engaged in new originations involving a variety of derivative products. GSFPI's Euroyen offering was supplemented by a euro-medium-term note program in early 1993. As of Oct. 29, 1999, debt outstanding from this program amounted to ¥3 billion. In October 1999 statements, the total assets of GSFPI were valued at \$70 million.

GSFPIUS

GSFPIUS began active operations on Nov. 27, 1992, with an initial investment of approximately US\$102 million in capital. The infusion was used to purchase a book of in-the-money swaps with investment grade counterparties from a Group affiliate. Assets in excess of liabilities represent common equity. The initial portfolio has been augmented with new originations beginning in mid-1993. As of Oct. 29, 1999, the total assets of GSFPIUS were approximately US\$237 million.

GSFPIUS established a medium-term note program, which was rated 'AAA' in October of 1994, with an initial drawdown of US\$5 million. In filings made in conjunction with the medium-term note program, GSFPIUS expressed its commitment to mitigate market risk by means of matched transactions. The next program drawdown was made in October 1995 in the form of a US\$45 million American Stock Exchange listed issue rated 'AAAr'. The "r" subscript applied to the rating reflects the nongeneric character of the payout features of the issuance. As of Oct. 29, 1999, debt outstanding from the medium-term note program amounted to US\$44 million.

Legal Risks

GSFPI and GSFPIUS are Cayman Islands exempt limited partnerships indirectly wholly owned by the Group. GSFPI and GSFPIUS are each managed through corporate general partners that are Cayman Islands limited liability companies under indirect control of the Group. GSFPI and GSFPIUS will be entering into transactions with

counterparties and offsetting transactions with Goldman Sachs affiliates. Both the GSFPI Global Derivatives Agreement and the GSFPI ISDA Master Agreement with Goldman provide for respective termination and net settlement of obligations in the event of a Goldman default.

Both GSFPI and GSFPI meet Standard and Poor's bankruptcy remote criteria. Standard & Poor's has received opinions of counsel to the effect that the respective initial purchases of assets by GSFPI and GSFPI were each a "true sale." Standard & Poor's has also received the opinion of counsel to the effect that the assets of GSFPI and GSFPI will not be available to satisfy obligations and liabilities to creditors of the Group or other Group affiliates, or of respective GSFPI and GSFPI general partners in the event of insolvency among the entities. Furthermore, opinion was given to the effect that GSFPI and GSFPI will not be consolidated with the Group or a Group affiliate or general partner.

Because nonconsolidation opinions are necessarily fact-intensive, Standard & Poor's reviews the indicia of separateness as reflected in program documents. GSFPI and GSFPI have arranged for various managerial and administrative functions to be performed by Goldman Sachs entities. These services are contracted in the form of a custodian and space-sharing agreement with Goldman Sachs (Cayman) Trust Ltd., and origination, calculation, and software agreements with Goldman Sachs International and Goldman Sachs & Co., for fees set on an arms-length basis.

GSFPI and GSFPI maintain dedicated offices and separate accounts. They conduct business through duly organized boards. The business correspondence of each of the vehicles is conducted under its respective name on its own stationery. Transactions with Group affiliates are performed on an arms-length basis. GSFPI and GSFPI do not act as agents for other Group affiliates, and each conducts their derivative products business independently.

Standard & Poor's has received legal counsel opinion that the Cayman Islands currently levies no income, corporate, or capital gains taxes. GSFPI and GSFPI each have obtained a tax-exemption certificate providing that no Cayman Islands law imposing any tax upon profits, income, or capital gain enacted over the subsequent 50 years will apply to the holders. The certificates require the annual payment of a registration fee. Standard & Poor's has received legal opinion to the effect that the Cayman Islands currently imposes no taxes upon the payment of interest or principal made by GSFPI with respect to its notes.

Currently, holders of the notes will not be subject to Cayman Islands taxes or duties on capital gains realized on the sale or redemption of the notes. GSFPI has undertaken a commitment to gross up payments to noteholders (subject to specific reservations) in the event that payments under its notes are subject to withholding or other tax by a Cayman Islands authority. Such an event is considered unlikely. If

payments on the notes become subject to tax, GSFPI has reserved the right of early call redemption at par. The legal opinions received by Standard & Poor's are based on certain assumptions and are subject to the qualification.

Financial Risks

As operating companies engaged in transactions of financial instruments, principally derivative products, GSFPI and GSFPIUS confront two general types of financial risk: market risk and credit risk. Both companies are committed to maintaining portfolios of matched obligations fully hedged against market moves. To the extent the vehicles fulfill this commitment, they will confront market risk only under special circumstances, which are discussed below. At all times, the vehicles will be confronting credit risk; that is, the risk of loss due to counterparty default.

Operations of GSFPI and GSFPIUS are governed by common operating policies that, among other things, establish permitted indices in which companies may transact, a set of exposure and liquidity tests, and a risk model to address financial risk. The vehicles employ the risk model to determine, by means of a specifically designed test, the sufficiency of vehicles' assets to meet payment obligations across contracts to the most distant tenor.

Although current strengths of the vehicles' balance sheets are considerable, GSFPI and GSFPIUS are operating companies actively engaged in originations of derivative products across a spectrum of counterparties that require matching transactions. Product and counterparty credit quality may all vary over time, as may the indices upon which contract values and hence exposures are based. This makes it important for companies to establish the ability to assess, on a quantified basis, the dynamic contours of risk, as these may evolve due to portfolio and index change through time.

For this purpose, each entity measures its financial risk by means of a simulation model (risk model). The risk model quantifies the risks confronting GSFPI and GSFPIUS and limits business activity to ensure potential losses will be covered at a high degree of confidence.

The model takes as inputs assumptions regarding obligor default rates as well as historical behavior of the indices to which the vehicles' derivatives are linked. It applies stressed default frequencies based on historical data on senior unsecured corporate bond defaults. The model assumes no recovery and no rehedging upon a default. Index simulation behavior is guided by restrictions based upon historical volatilities and correlations of the relevant indices. The historical input feeds to the model are reviewed periodically.

On this foundation, the risk model generates index paths and then methodically projects payments and receipts on each vehicle's portfolio, constructing, by means of simulation, a distribution of default loss. Given the simulations and associated cash

flow analysis, a calculation is performed to determine the probability that capital plus cash inflows will be insufficient to meet payment obligations on payment dates. The operating policies impose a test that this probability will be no higher than a strict threshold standard. The test is applied to consider the respective obligations of each of the vehicles.

The vehicles must also pass counterparty and sovereign exposure tests with limits based upon gross or net exposures, as appropriate, to counterparties at different credit rating levels. In addition to the tests above, a short-term liquidity test also has been devised.

A default by a counterparty is not only a realization of credit risk. It also exposes the vehicles to market risk since default upsets the balanced structure of the portfolio's matched contracts, creating an unmatched condition for the portfolio as a whole. Upon a default, the vehicles would be expected to re hedge, an activity involving certain skills and equipment. To enhance the capacity of GSFPI and GSFPIUS to manage its portfolio and re hedge if necessary in the absence of the Group, operating guidelines that govern the subsidiaries have been amended to establish a sequence of triggers under which a contingent manager will be engaged, familiarized and, ultimately, given operational control in the event of the failure of the Group. The vehicles, however, assess exposure to financial risk in the risk model under the conservative assumption that a default induced exposure to market risk will not be rehedged.

The operating guidelines establish a limit restricting the exposure of GSFPI and GSFPIUS to Goldman affiliates at no greater than 15% of total portfolio market value. As of October 1999, GSFPI and GSFPIUS had approximately US\$4.7 million net exposure to Goldman Sachs affiliates.

Operating Risks

Capital adequacy, liquidity, and exposure tests determine dividend policy and are incurrence tests for new portfolio transactions. New transactions cannot be completed if their introduction into the portfolio will raise risk measures above threshold levels. Tests must also be performed and passed at appropriate levels prior to dividend distributions, and are part of regular surveillance reports.

Risk model inputs are reviewed regularly and are subject to review at Standard & Poor's request. Periodic examinations of the model have been and will be conducted to attest to continuing accuracy and effectiveness. Sensitivity tests on model output are conducted quarterly to assess its robustness across a range of input feed assumptions, including significantly higher and lower than historical volatilities.

In the event of an insolvency of the Group, GSFPI and GSFPIUS will come under the operational control of a contingent manager. This manager will have the authority

to operate the vehicles in accordance with the provisions of the operating guidelines. Backup arrangements have also been put in place to perform accounting and calculation services should the Group be unable to carry out these activities as it currently does under contract.

GSFPI and GSFPIUS may conduct transactions across a range of foreign exchange, interest rate, equity, and commodity indices in financial instruments and derivative products. Excess funds are invested in 'A-1+' liquid assets.

K2 Corp.

Analysts:

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Credit Rating

AAA/A-1+

Outstanding Rating(s)

Counterparty credit	AAA/A-1+
Senior secured	AAA
Commercial paper	A-1+

Credit Rating History

Feb. 1, 1999	AAA/A-1+
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Subsidiaries

K2 (USA) LLC	
Counterparty credit	AAA/A-1+
Senior secured	AAA
Commercial paper	A-1+

Rationale

The ratings of the senior European and U.S. commercial paper and medium-term note programs of K2 Corp. (K2) and its wholly owned subsidiary K2 (USA) LLC are based on an assessment of K2's structure and capital adequacy. The company is expected to manage its investment portfolio within strict leverage, credit quality, and diversification limits, and to maintain sufficient capital support to allow it to perform its obligations in full, on a timely basis. Should an enforcement event occur (*see Enforcement section*), the security trustee will realize its charge on the asset portfolio and manage and liquidate the assets to repay all senior obligations as and when they fall due.

Profile

K2 is a structured investment company incorporated in the Cayman Islands. It issues commercial paper and medium-term notes directly in the European markets. K2 (USA), its Delaware subsidiary, has been established for the purpose of issuing commercial paper and medium-term notes in the U.S. domestic market. K2 (USA) lends the proceeds from such issuance to K2 through an intercompany loan agreement. The obligations of K2 (USA) are unconditionally and irrevocably guaranteed by K2.

Dresdner Bank AG London branch (Dresdner) has been contracted to serve as manager to K2, providing it with investment and treasury management and operational support services.

The analysis of K2 is concentrated in three broad categories:

- Portfolio management;
- Legal structure; and
- Operational structure.

The assessment of K2's portfolio was further broken down into:

- Asset and liability portfolio composition;
- Market risk sensitivity;
- Leverage and capital adequacy; and
- Liquidity.

Portfolio Composition

K2 uses the proceeds of its commercial paper (CP) and medium-term notes (MTN) debt programs to purchase securities of various currencies, ratings, and tenors. It acquires these assets with a view to holding them until maturity but is not obligated to do so. K2 also enters into derivative transactions to neutralize its exposure to market risk.

All derivative counterparties must be rated at least 'BBB-' at the initiation of the transaction. K2 must strictly observe certain asset and derivative counterparty quality and diversification requirements. These include rating composition, individual obligor, country, maturity, and industry limits, with industry limits being further divided into sector sublimits. Any breach of these limits requires the amount of such excess to be treated as ineligible for the purposes of the capital adequacy calculations.

Market Risk

K2 minimizes its exposure to market risk by using derivative hedges to convert all assets and liabilities to a floating interest rate basis and by match funding. The portfolio is tested for interest rate neutrality by confirming that the impact of a single basis point shift at individual points along the yield curve and across the curve in aggregate does not cause more than a 0.2 basis point change in the capital value.

Similarly, currency neutrality is tested by confirming that a 1% change in the value of all currencies relative to the U.S. dollar (USD) does not cause the change in capital value to exceed 2.0 basis points. These tests are conducted on a daily basis and any breach thereof has a five-business-day cure period prior to enforcement.

Leverage and Capital Adequacy

While the risk management policies of K2 require the portfolio to be insensitive to changes in interest and currency exchange rates, the portfolio remains exposed to credit risk and the widening of credit spreads. Each week, the adequacy of K2's capital to meet all of its senior obligations in full on a timely basis is calculated by running a proprietary risk model. The model, which takes account of the credit, market, and liquidity risks arising in connection with the company's portfolio, assesses the capital resources needed to prudently cover expected losses under stressed conditions.

On a daily basis, K2 also performs a capital loss test to confirm that the shareholder equity is not less than 50% of the paid-in capital. Should this occur, an enforcement event is automatically triggered. In addition to satisfying these capital adequacy requirements, K2's leverage must also be maintained within previously agreed upon levels.

Liquidity

K2 purchases securities of varying maturities based on their value to the company. To the extent that the assets and liabilities are not maturity matched, K2 is exposed to refinancing risk. This risk is managed by limiting the peak amount of funding permitted in any rolling five-day period over the next year. Liquidity support equal to or greater than three times the maximum five-day outflow must be maintained at all times. The cash outflows are calculated on a daily, forward-rolling, cumulative basis in each five-day test period.

K2 also has liquidity resources available to it in two forms: committed bank lines from 'A-1+' rated financial institutions and specific liquidity eligible assets. The liquidity assets may be certain highly rated government, supranational, financial institution, corporate, and asset-backed securities. These assets are discounted such that their liquidity contribution conservatively reflects their potential value should they have to be sold on short notice to meet a cash requirement. Each day, K2 must test its liquidity resources against its maximum cumulative outflow limits. Any breach must be cured within five business days.

Legal Structure

K2 Corporation is a bankruptcy-remote company with a board of directors independent of the manager. It issues shares and capital notes and the note program is listed on the London Stock Exchange. It has been established with an initial life of eleven years, but this will automatically extend for a further year each year unless more than 50% of K2's shareholders resolve to revoke the annual extension.

K2's board of directors currently has four members and there is an ongoing requirement for at least two of the directors to be independent of the manager or interested parties at all times. Dresdner, in the capacity of manager, provides investment and treasury management and support services, but it is not the owner of the vehicle. Dresdner reports to the board of directors of K2.

K2 has contracted with the Law Debenture Trust Corp. (Channel Islands) Ltd. to act as security trustee. To secure the payment of all secured obligations, K2 has pledged all assets and assigned all rights (excepting a Cayman-related service fee of US\$1,000) to the security trustee under U.K. and U.S. law. It has entered into custodian agreements with a U.S. and Euro custodian.

K2 has also entered into a guarantee to meet unconditionally and irrevocably all obligations owed by K2 (USA) LLC to its noteholders. As a result, all CP and MTN noteholders (both Euro and U.S.), derivative counterparties, and the liquidity facility providers, amongst others, are secured, rank pari passu, and are senior to all other obligations.

Enforcement

The security constituted by K2's security trust deed becomes immediately enforceable upon the occurrence of an enforcement event. The floating charge automatically converts into a fixed charge, and the security trustee will be entitled to exercise all of K2's rights under the assigned contracts. The security trustee, acting on behalf of the secured creditors, will wind down the portfolio, taking on the responsibility of disbursement of all monies received upon the maturity and sale of assets. Until an enforcement event occurs, K2 retains control of all its assets. Enforcement events include:

- Failure to maintain a rating of at least 'A-/A-1',
- Insolvency or winding up of K2,
- Breach of the capital loss limit,
- Failure without cure of the liquidity tests,
- Failure without cure of the interest rate sensitivity tests,
- Failure without cure of the exchange rate sensitivity tests,
- Failure to repay any liquidity provider when due within the applicable grace period,
- Failure to repay any of the noteholders when due within the applicable grace period, and
- Failure to repay any derivative counterparty when due within the applicable grace period.

Enforcement does not automatically accelerate the payment obligations of K2 or K2 (USA). However, K2 and K2 (USA) may call all, but not some, of the debt outstanding under the programs on each anniversary of entering into enforcement.

Operational Structure

When analyzing the operational risk of K2, Dresdner's controls and procedures for providing the investment and treasury management were closely examined. Dresdner has an independent unit that is dedicated to providing all these management services. Dresdner's internal audit and contingency procedures are also used. Standard & Poor's derives comfort from the presence of Dresdner.

To ensure that K2 adheres strictly to its operating procedures and limit structure, K2 has applied two layers of controls for ongoing surveillance. First, Dresdner's internal control department monitors limit compliance on a daily basis, and provides portfolio composition and status reports to Standard & Poor's each week. Second, K2 is subject to a full audit by PricewaterhouseCoopers on a regular basis, the results of which are also provided to Standard & Poor's.

Lehman Brothers Derivatives Products Inc.

Analysts:

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Krishan Nagpal, New York (1) 212-438-2552

Credit Rating

AAAt

Credit Rating History

July 16, 1998

AAAt

Outstanding Rating(s)

Counterparty Credit

AAAt

Sovereign Rating

United States of America

AAA/Stable/A-1+

Rationale

The ‘AAAt’ counterparty rating assigned to Lehman Brothers Derivative Products Inc. (LBDP) is based on Standard & Poor’s assessment of LBDP’s legal, financial, and operating structure. LBDP, a wholly owned subsidiary of Lehman Brothers Inc. (LBI), is a Delaware-incorporated entity. It enters directly into a wide array of derivative transactions in several different currencies and eliminates market risk by entering into mirror transactions with Lehman Brothers Special Financing (LBSF), which is guaranteed by Lehman Brothers Holding Inc. (LBH). Business is transacted in the U.S., Europe, and Asia. LBH also has sponsored another derivative products company, Lehman Brothers Financial Products Inc. (LBFP). LBDP and LBFP are sister companies. Counterparties of LBDP will benefit from dedicated credit support in the form of an irrevocable and unconditional surety bond provided by a ‘AAA’ rated insurer, Ambac Assurance Corp.

LBDP is a termination structure providing for the acceleration and cash settlement of all contracts upon certain events. The ‘AAAt’ rating reflects Standard & Poor’s opinion of the LBDP’s extremely strong financial capacity to meet all derivative obligations according to their contracted terms, whether at scheduled maturity or upon a termination. The rating does not address the likelihood of a termination.

Legal Risks

An important part of Standard & Poor's analysis relates to the examination of the legal implications of LBDP's structure. Of major concern is the establishment of LBDP as a separate legal entity that will not be subject to consolidation with any other entity in the event of bankruptcy of LBH, LBI or any other Lehman affiliate. To achieve this, LBDP has incorporated several structural and operational provisions to provide a basis for legal treatment as a separate entity. Standard & Poor's also has received legal opinion that, subject to certain assumptions and based on certain justifications, LBDP should not be consolidated with LBH or any of its affiliates upon their insolvency or bankruptcy. Services to be provided by the parent or any affiliates subject to "arm's-length" agreements, and fees are to be paid for them.

Another area of importance from the legal perspective relates to the enforceability of the netting provisions in swap documentation. LBDP uses the standard International Swaps and Derivatives Association master agreement for all transactions and counterparties. In the event a master agreement is not signed prior to entering into a derivative transaction, a second transaction will not be entered into with the counterparty unless the exposure to that counterparty is calculated on a gross basis, rather than on a net basis, when calculating the capital requirement.

Similarly, if a counterparty is incorporated in a jurisdiction Standard & Poor's believes is not an enforceable netting jurisdiction, LBDP will also calculate its exposure to these counterparties on a gross basis. In this case, LBDP will calculate the exposure to a counterparty by adding together all the amounts owed to LBDP, without offsetting the amounts owed by LBDP to the counterparty.

To neutralize the market risk in any transaction, LBDP enters into an identical and offsetting transaction with LBSF. However, this leaves LBDP with the potential for large credit exposure to LBSF at any one point in time. Consequently, to cover this exposure, LBSF will post collateral to LBDP equal to the net mark-to-market value plus a buffer of all transactions the two entered into (*see Financial Risks*). LBDP will have a perfected, first-priority security interest in the collateral, which is held by an independent custodian. Standard & Poor's has received opinion of legal counsel that the security interest is enforceable in the event of the insolvency of LBSF, without being subject to a stay.

LBDP will have a 12-member board of directors, including three members who are independent; that is, who have not been employed by or affiliated with any Lehman entity for at least the past calendar year. Similarly, they will own no more than 10% of any stock outstanding on any Lehman entities at any time.

Financial Risks

LBDP's structure is designed to meet all obligations either at the maturity of the transaction or upon termination. The period from the termination trigger day until LBDP is fully unwound is 16 days (assuming no market-disruption event occurs). LBDP is subject to market risk for the first six days and to counterparty credit risk for the first 11 days of this period. As such, it has to provide coverage for market risk, credit risk, and liquidity over the termination window. These risks are incorporated into two separate calculations:

- The collateral formula amount; and
- The capital requirement.

Collateral Formula

The collateral formula amount calculates an amount of collateral due on the mirror transaction portfolio between LBDP and LBSF. It includes the net mark-to-market value of the entire mirror portfolio, plus two additional calculations:

- An amount calculated to capture the potential change in value of this portfolio over the termination window; and
- An amount that captures the value of any cash flows not currently received from the counterparty that might be passed on to LBSF through settlement of current or new transactions.

The collateral formula amount is calculated daily. Collateral must be posted within one business day, with a two-day cure period. Failure to do so within the cure period will trigger termination. Collateral must be in the form of U.S. dollars, U.S. Treasuries, or 'A-1+' short-term investments approved by Standard & Poor's, and consistent with Standard & Poor's market value overcollateralization table. It must be posted to an independent custodian. LBDP will not enter into any new transactions or make any payments to LBSF during a collateral cure period.

Capital Required

The amount of capital required is a calculation that captures the credit risk of all LBDP counterparties and must be covered with capital resources. The capital required is the greater of three separate calculations:

- A fixed U.S. dollar amount,
- A formulaic capital charge due to counterparty risk on the basis of exposure to counterparties, or
- A formulaic capital charge that incorporates concentrations of exposures to counterparties.

The largest of these three figures is compared with the capital resources. These capital resources are:

- LBDP's equity,
- LBDP's subordinated loan,
- Deferred intermediation fees, and
- The surety bond.

The capital requirement is calculated at least once a week, and if there is a capital deficiency, capital must be posted within a two-day cure period. Any breach of this requirement that is not rectified within the cure period will trigger termination. While a capital deficiency exists, LBDP may not enter into any new transactions, except credit risk-reducing transactions. Eligible capital investments must be consistent with Standard & Poor's investment criteria and overcollateralization tables for 'AAA' structures.

LBDP is also committed to maintaining a minimum amount of liquidity resources in the vehicle at all times to meet potential liquidity requirements.

Surety Bond

The surety bond is provided by Ambac Assurance Corp. It is unconditional, irrevocable, and payable upon demand. It will be in an initial amount of US\$100 million. However, LBDP has the option to increase the coverage at any time by a multiple of US\$25 million, up to a maximum of US\$300 million. LBDP will not rely on any undrawn portion of the surety bond as a capital resource. In the event of termination, once LBDP has established the resources available to repay all obligations, any shortfall will be met by drawing under the policy.

Operating Risks

Eligible transactions include interest rate swaps, FRAs, forwards, caps, floors, collars, options, options on swaps, cross-currency swaps, or any combination thereof. The maximum maturity of any transaction is 40 years; however, there is a graduated limit structure on the notional amount of any particular tenor that may extend beyond 10 years. Eligible counterparties have a minimum rating of 'BBB-'; however, LBDP has the capacity to enter into transactions with unrated and noninvestment-grade counterparties. The exposure to these counterparties will be capitalized at a minimum of 100% in the capital requirement calculation and will be subject to particular concentration limits, beyond which the capital charge will increase further. LBDP has the option to assign counterparties to LBSF in the event of a downgrade of the counterparty to below investment grade.

All transactions will be governed by the ISDA master agreement, with full two-way payment. Transactions will terminate at midmarket value, and LBDP has committed

to use a designated dealer group for all termination values, always maintaining a minimum number of financial institutions within this group. LBDP will inform all counterparties of the midmarket value of all transactions they currently have outstanding with LBDP on a quarterly basis.

Termination

Upon the occurrence of certain termination events, all LBDP transactions will accelerate and cash-settle. Termination events occur if:

- LBDP ceases to maintain an 'A' rating,
- LBSF fails to deliver the required collateral under the back-to-back transactions within a two-day cure period,
- LBDP fails to maintain the capital required, or
- LBH or LBSF are forced into bankruptcy.

If any of the above events occur, then LBDP must begin termination procedures immediately and all entities involved must be informed. These are the custodian, the swap counterparties, the independent verifier, the agents, the LBDP board of directors, LBSF, Ambac, and the rating agencies. LBDP also will place an announcement in large daily newspapers in Tokyo, London, and New York, as well as on Reuters and Telerate.

In addition, all eligible investments and collateral must be liquidated by the custodian, and all transactions must be valued by LBDP and go through the independent verifier. If an amount is payable to LBDP by the counterparty, this amount is due five business days after the early termination date (ETD). If an amount is payable by LBDP, it is due within 10 business days of the ETD. If there are insufficient funds to repay all counterparties, LBDP will draw under the surety bond.

LBDP's operating guidelines require independent auditors to verify LBDP's regular compliance with capital and collateral requirements, as well as all counterparty, product, and tenor restrictions. Copies of the reports and the independent verification will be forwarded to Standard & Poor's.

Lehman Brothers Financial Products Inc.

Analysts:

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Credit Rating		Credit Rating History	
AAA		Jan. 31, 1994	AAA
Outstanding Rating(s)		Sovereign Rating	
Counterparty credit	AAA	United States of America	AAA/Stable/A-1+

Rationale

Lehman Brothers Financial Products Inc.'s (LBFP) 'AAA' rating is based on Standard & Poor's opinion of LBFP's extremely strong capacity to honor its obligations to full maturity, given its quantification of credit risk and market risk, modeling of liquidity needs, and operating guidelines. LBFP has been incorporated in Delaware as a wholly owned subsidiary of Lehman Brothers Inc. (LBI) for the purpose of engaging in over-the-counter interest rate and currency swaps and options, purchasing or selling exchange-traded futures and options, or government bonds and options. LBFP offsets all market risk to its portfolio by engaging in offsetting swap transactions with Lehman Brothers Special Financing (LBSF), which in turn is unconditionally guaranteed by Lehman Brothers Holdings Inc. (Lehman). Since its initial rating on Jan. 31, 1994, LBFP's outstanding portfolio notional has grown to over US\$104 billion; capitalization stands at US\$282 million.

Standard & Poor's analysis of the counterparty rating of enhanced derivative products companies is concentrated in three areas: legal risk, financial risk, and operating risk.

Legal Risks

LBFP intermediates swap transactions with third parties for LBSF and enters into hedge transactions with futures commission merchants (FCM). Each of these trades, swaps, or hedges is immediately offset with a swap transaction with LBSF. In exchange for the intermediation of swaps, LBSF pays LBFP an intermediation fee. Additionally, LBSF posts collateral to secure LBFP's exposure to it under these contracts. Because the two types of transactions have different settlement characteristics, they are documented under two separate master agreements. The collateral agreement securing the third-party swap transaction's offsetting swap agreement requires LBSF to post an amount equal to its current negative mark-to-market exposure to LBFP, plus an amount to cover the potential change in the portfolio's value. The collateral agreement securing the hedge transaction's offsetting swap agreement requires LBSF to post an amount equal to its current negative mark-to-market exposure to LBFP, plus an amount to secure LBFP against intraday market fluctuations. The two master agreements are designed to be set off against one another in the case of Lehman's bankruptcy or insolvency.

Two core issues in Standard & Poor's rating analysis are:

- That the relationship between LBFP and LBSF, and between LBFP and LBI, will not jeopardize the separateness of LBFP or cause a consolidation in the event of a bankruptcy of Lehman, or affiliates.
- That the two master swap agreements between LBFP and LBSF qualify as swap agreements under the Bankruptcy Code, 11 U.S.C., and that collateral posted under these agreements will not be subject to a stay in the event of the bankruptcy of Lehman or its affiliates.

With regard to the first, Standard & Poor's has received legal opinion to the effect that, in the event of the insolvency of LBSF or Lehman, LBFP's assets will not be consolidated with those of Lehman or LBSF. Because nonconsolidation opinions are necessarily fact-intensive, analysts also review the so-called indicia of separateness reflected in LBFP's documents. Standard & Poor's verifies that arrangements between the parties regarding marketing, servicing, operations support, and payment processing do not jeopardize the separateness of LBFP from Lehman or any of its affiliates. LBFP has contracted LBSF as hedging swap provider and LBI for services required above LBFP's capacity. It pays an appropriate arm's-length fee for services to LBI. However, if Lehman or any of its affiliates files bankruptcy, LBFP will be able to manage its portfolio to full maturity in conjunction with Dresdner Bank, its contingent manager, without the LBI's services.

Regarding the second issue, the status of the swap contracts in the LBFP structure is important since LBFP will be offsetting all of its third-party swap and hedge transactions with LBSF swaps. LBFP's transactions include instruments transacted

over exchanges. The hedge contracts have been mirrored under an International Swaps and Derivative Association (ISDA) master agreement with LBSF that, in the event of an insolvency of Lehman, would be settled on a net basis with swaps under the ISDA master agreement that offset the third-party swap position. Standard & Poor's has received legal opinion to the effect that the two master swap agreements will be considered swaps under the Bankruptcy Code and not subject to automatic stay. Additionally, in counsel's opinion, LBFP will have a first-priority perfected security interest in collateral posted under the swap agreements, and collateral will not be subject to automatic stay under the Bankruptcy Code. LBFP has instituted collateral posting and perfection procedures that will ensure security interests remain perfected and before other liens. Legal opinions received by Standard & Poor's are based on certain assumptions, and are subject to qualification.

Financial Risks

LBFP is designed to perform on all of its obligations to full maturity. Given the scope of LBFP's structure, an analysis of its capital adequacy and credit quality must include:

- LBFP's approach to potential credit losses over a sufficient horizon;
- Its definition of market-risk neutralization techniques; and
- Liquidity needs for its portfolio of swaps and hedges under stressful conditions.

LBFP has constructed a probabilistic risk model to calculate its capital requirement. The model incorporates assumptions of portfolio growth, counterparty credit quality, Standard & Poor's stressed default rates, counterparty net or gross treatment, contract type and tenor, and statistics on market variable distributions. Simulated losses are carried to a very high degree of confidence. The risk model is also used in the liquidity quantification exercise for its ability to stress the individual indices of the portfolio and its flexibility regarding its potential growth over a given period of time.

LBFP was the first derivative products company to incorporate the dynamic use of hedging products in its structure. To facilitate the inclusion of exchange traded products, LBFP first identified its credit risk in terms of the period of exposure and the credit of the entity to which it will be exposed. The credit risk incurred by transacting the hedge instruments depends on the exchanges' clearing houses and their rules. The exchanges used by LBFP present a variety of different supports for a failing clearing member. The credit risk in many cases is divided between the clearing member and the exchange. The positions in question, however, settle daily and may be the subject of intraday margin calls. The risk, therefore, is considered an overnight risk for the purpose of determining the period of exposure. LBFP has contracted the services of a futures commission merchant rated at least 'A-1' by Standard & Poor's.

LBFP uses hedging instruments to offset the degree of mismatch in its counterparty swap portfolio. The degree of market risk neutralization that is accomplished in the portfolio by incorporating the hedges is revealed in a series of liquidity simulations and portfolio performance reviews. By using the risk model to simulate underlying indices, the degree of hedge accuracy for large market shifts is revealed. LBFP also uses the results of this simulation as a liquidity test to determine the amount of liquidity it is likely to need over a six-month horizon under stressful circumstances. The simulation uses portfolio growth assumptions and, for a large number of market paths, establishes a distribution of maximum liquidity needs for all of LBFP's swap and hedge positions. Given this distribution, the liquidity provision can be established at an appropriately high level of confidence. The risk model will be run at least quarterly for liquidity purposes and its output will be used in conjunction with the risk model output for credit risk to determine the current capital consumption of LBFP. LBFP also quantifies the degree of portfolio mismatch by reviewing its entire portfolio's performance over three historical horizons. By reviewing the distribution of the changes in the value of the total portfolio, LBFP quantifies the amount of additional collateral LBSF must post to secure LBFP should LBSF or Lehman be declared insolvent.

Operating Risks

LBFP began operations with US\$200 million in capital in the form of common equity. LBFP's capital consumption is recalculated each week using the most recent run of the risk model for credit risk and liquidity risk. The current mark-to-market value of each counterparty portfolio that is over-limit is then added to the model outputs so that large counterparty exposure concentrations and counterparty overlimits are isolated and capitalized. Current capitalization is US\$282 million.

LBFP provides for its own marketing, trading, settlement, and operations needs, some of which are provided for via an administration agreement between LBFP and LBI. LBFP intermediates third-party transactions with counterparties rated 'A-' or higher and simultaneously enters into offsetting swaps with LBSF. If a counterparty's credit rating falls below the 'BBB-' level, LBFP would assign that counterparty's portfolio to LBSF. Should a counterparty's exposure exceed a preset threshold amount, LBFP increases the amount of capital allocated to support the exposure.

Under collateral agreements between LBSF and LBFP, LBSF will at all times post collateral under each of its two LBFP master agreements to secure LBFP's exposure. Under the intermediation agreement between the two parties, LBFP intermediates swap contracts on behalf of LBSF until LBSF no longer has suitable credit quality (below 'A-2') to continue. The trigger for the engagement of the contingent manager is the downgrade of Lehman's short-term rating to below 'A-2'. The contingent

manager, already familiar with LBFP's systems infrastructure and exchange relationships, will work in conjunction with LBFP staff to manage the portfolio to full maturity. LBFP's swaps and collateral agreements with LBSF, however, will stay in force until LBSF fails to perform under the terms and conditions of its swap and collateral agreements with LBFP.

Some of LBFP's counterparties are subject to mark-to-market agreements. In these cases, varying thresholds are imposed based on counterparties' credit quality. The mark-to-market agreements are intended to mitigate credit risk to the counterparties of swap contracts on a regular basis. This method of risk reduction is recognized by Standard & Poor's only in jurisdictions in which a first-priority perfected security interest, or the equivalent, in collateral can be obtained and collateral will be available to LBFP in a timely manner. LBFP also makes use of a rating-based termination clause (another risk-reducing tool) in documentation involving counterparties.

LBFP operating guidelines cover day-to-day operations, as well as policies relating to capital adequacy, any collateral support from LBSF, dividend policies, investment guidelines, and product restrictions. The policies and procedures also include steps LBFP will take if it goes into contingent management. LBFP has restricted itself from paying dividends to its shareholders unless the dividends in question will not diminish its capital base; dividends must come from the current earnings of the entity. LBFP holds all of its capital and collateral in investments that are consistent with criteria for investments of an 'AAA' structured financing. The value of these investments, for the purpose of supporting LBFP's 'AAA' rating, will be determined by LBFP pricing securities in the relevant market. Capital investments will also be limited by maturity. The vast majority of capital investments will mature within 12 months. Collateral investments will incorporate Standard & Poor's overcollateralization levels. LBFP has limited its product mix to interest rate and currency swaps and options in liquid currencies.

Links Finance Corp.

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Credit Rating

AAA/A-1+

Credit Rating History

June 18, 1999

AAA/A-1+

Outstanding Rating(s)

Counterparty credit	AAA/A-1+
Senior secured	AAA
Commercial paper	A-1+

Subsidiaries

Links Finance LLC	
Senior secured	AAA
Commercial paper	A-1+

Rationale

The ratings for senior U.S. and European commercial paper and medium-term note programs for Links Finance Corp. (Links) are based on Standard & Poor's assessment of Links' structure and capital adequacy. The company must manage its investment portfolio within strict leverage, credit quality, and diversification limits and maintain sufficient capital support to allow it to perform on its obligations in full and on a timely basis. Should an enforcement event occur (*see Enforcement section*), the security trustee will realize its charge on the asset portfolio, and manage and liquidate the assets to repay all senior obligations as they come due.

Profile

Links is a structured investment company incorporated in the Cayman Islands. It issues commercial paper and medium-term notes directly in the European markets. Links Finance LLC, its Delaware subsidiary, was formed for the purpose of issuing commercial paper and medium-term notes in the U.S. domestic market. Links Finance LLC lends the proceeds from such issuance to Links through an intercompany loan agreement. Bank of Montreal has been contracted to serve as investment manager

and funding manager to Links. Standard & Poor's concentrated its analysis of Links in six principal areas:

- Asset and liability portfolio composition,
- Market risk sensitivity,
- Leverage and capital adequacy,
- Liquidity,
- Defeasance, and
- Enforcement.

Portfolio Composition

Links uses the proceeds of the debt programs to purchase securities of various currencies, ratings, and tenors. It acquires these assets with a view to holding them until maturity. Interest rate and foreign exchange exposure is managed through the use of derivative transactions that swap all obligations back to floating rate exposure. All securities and derivative counterparties must be rated at least 'BBB-' at the initiation of the transaction. Portfolio diversification requirements must also be strictly observed.

The security portfolio is subject to sector limits, and each sector is further divided into subgroups. The portfolio is also subject to individual obligor and geographic concentration limits and maturity constraints. Further, derivative counterparties are subject to these limits. Any breach of any exposure limit requires the value of such excess to be treated as an ineligible asset for capital calculations.

Market Risk

To manage market risk, Links transacts in derivatives such as options, swaps, and forwards to hedge currency, interest, or basis risk on an asset by asset basis. The resultant market risk neutrality is tested for both interest rate and currency exposures. The impact of a single basis point parallel shift in the yield curve may not cause more than a 0.2 basis point change in net portfolio value.

Moreover, the impact of shifts to the individual points on the yield curve are also tested. Similarly, a 1% change in the value of all currencies to the U.S. dollar, aggregated without regard to whether they are positive or negative, may not cause the change in net portfolio value to exceed 2 basis points. These tests are conducted on a daily basis, and any breach thereof has a five-business-day cure period.

Leverage and Capital Adequacy

Links must reserve capital against potential losses in connection with the investments and derivative transactions in the portfolio. Links uses a matrix to determine the

amount of capital it must reserve for each security it purchases. This matrix incorporates credit rating and remaining maturity of the security purchased. Adjustments for liquidity of the assets, diversity of the portfolio and maturity of the funding liabilities are then applied. A different table is used when calculating the amount of capital to be reserved for each derivative transaction. The capital charges are charged on the mark to market value of the derivative or security. Links performs capital compliance tests daily. Any breach of these tests has a five-business-day cure period.

In addition to satisfying the capital requirements, the structure must also maintain a leverage ratio below preestablished levels. Breach of this ratio also has a five-business-day cure period.

Liquidity

Links purchases securities of varying maturities based on their value to the structure. To the extent that the assets and liabilities are not maturity matched, Links is exposed to refinancing risk. This risk is managed by limiting the peak amount of funding required in any five-rolling-business-day period over the next year. These limits require management of liquidity requirements and coverage in the event of liquidity failure. The limits specifically address the maximum net cumulative cash outflows that may be permitted in any one, five, 10, and 15 business day period. The cash outflows are calculated on a daily, forward rolling, cumulative basis, and the peak is chosen in each of the four test periods. This peak must then be within the net cumulative outflow limits.

Links has liquidity resources available in two forms: committed bank lines from 'A-1+' rated financial institutions, and specific liquidity-eligible assets. The specific assets may be highly-rated government, supranational, financial institution, corporate, and asset-backed securities. These assets are discounted such that their liquidity contribution conservatively reflects their potential value in the event that they have to be sold on short notice to meet a cash requirement. Each day, Links must test its liquidity resources against its net cumulative outflow limits. Any breach must be cured within five business days. Currently, Links has committed liquidity facilities of US\$300 million available to it from a small group of 'A-1+' rated banks.

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liquidity resources against its net cumulative outflow limits. Any breach must be cured within five business days. Currently, Links has committed liquidity facilities of US\$300 million available to it from a small group of 'A-1+' rated banks.

Defeasance

Defeasance occurs if Links' long term rating is downgraded below 'AA-', or if its short term rating is downgraded below 'A-1'. This requires the investment manager to wind down the portfolio. No new senior debt may be issued, and existing debt will be repaid as it falls due from the proceeds of asset maturities or sales. All portfolio limits and restrictions must still be observed. All daily and weekly tests will be performed, and uncured breaches thereof within the applicable cure periods are still enforcement events.

Enforcement

Links has contracted with Chase Manhattan Trustees Ltd. to serve as the security trustee. Should an enforcement event occur, the security trustee will realize its charge over the collateral for the benefit of all the secured obligors. Enforcement events include:

- Failure to maintain a rating of at least 'A-';
- Insolvency or the winding up of Links;
- Failure without cure of the capital compliance test;
- Failure without cure of the leverage compliance test;
- Failure without cure of the liquidity compliance test;
- Failure without cure of the interest rate exposure compliance test;
- Failure without cure of the currency exposure compliance test;
- Failure to repay any liquidity provider when due within the applicable grace period;
- Failure to repay any of the noteholders when due within the applicable grace period; and
- Failure to repay any derivative counterparty when due within the applicable grace period.

Should any of the above events occur, an enforcement event will ensue. The security trustee is then required, acting in the interests of all secured obligors, to enforce the security constituted by the deed. The security trustee will then manage the portfolio within predetermined guidelines to repay all secured liabilities as they come due.

Surveillance

To ensure that Links adheres strictly to its operating procedures and limit structure, it has applied two layers of controls for ongoing surveillance. First, the manager monitors limit compliance daily and provides portfolio composition and status reports to Standard & Poor's each week. Secondly, Links is subject to frequent compliance monitoring by PricewaterhouseCoopers, the results of which are also provided to Standard & Poor's.

Merrill Lynch Derivative Products AG

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Credit Rating

AAA

Outstanding Rating(s)

Counterparty credit AAA

Credit Rating History

Feb. 5, 1992 AAA

Sovereign Ratings

Swiss Confederation AAA/Stable/A-1+

Rationale

The 'AAA' counterparty rating of Merrill Lynch Derivative Products AG (MLDP AG) is based on Standard & Poor's assessment of its legal and operating structure and financial resources. MLDP AG is incorporated in Zurich as a subsidiary of MLDP Holdings, a special purpose U.S. holding company. MLDP Holdings, in turn, is indirectly owned by Merrill Lynch & Co. Inc.

MLDP, now known as MLDP AG, intermediates a wide variety of interest rate and currency swaps and options between Merrill Lynch Capital Services (MLCS) and its counterparties. MLDP AG insulates its portfolio against potential market moves by offsetting trades with MLCS. MLDP AG has servicing and intermediation agreements, as well as collateral provisions and arrangements under which MLCS posts collateral to cover MLDP AG's exposure to MLCS resulting from these mirror trades.

MLDP AG was established in November 1991 and was the first enhanced derivative products company. As of Nov. 23, 1999, MLDP AG's US\$170 billion portfolio notional principal has been supported by stockholders' equity in excess of US\$584 million. 'AAA' counterparties represent 37% and 'AA' counterparties make up 40% of MLDP AG's portfolio notional principal.

MLDP AG is a continuation structure. The ‘AAA’ counterparty rating reflects Standard & Poor’s assessment of MLDP AG’s extremely strong capacity to honor its obligations according to their contractual terms, based on its legal and operating structure and financial resources.

Legal Risks

MLDP AG is a Swiss entity and its bankruptcy would be subject to Swiss insolvency law. Merrill Lynch & Co. Inc. and its subsidiary, MLCS, however, are U.S. corporations, and their insolvency would be governed by Bankruptcy Code, 11, U.S.C. Standard & Poor’s has received the opinion of counsel that MLDP AG’s change of domicile to Switzerland will not affect:

- The likelihood of consolidation of MLDP AG’s assets with those of its parent or affiliates in the bankruptcy of Merrill Lynch & Co. Inc. or MLCS under U.S. law;
- MLDP AG’s first priority perfected security interest in the collateral posted by MLCS in New York; or
- The enforceability and timely availability of the collateral pledged by MLCS in the event of the insolvency of Merrill Lynch & Co. Inc., or MLCS.

Standard & Poor’s has also received opinions from MLDP AG’s Swiss counsel regarding both corporate law matters and the enforceability of agreements entered into by MLDP AG under Swiss law. All legal opinions are based upon assumption and subject to qualification.

Financial Risks

MLDP AG initiates transactions with ‘A’ or higher-rated counterparties of MLCS under the International Swaps and Derivatives Association’s standardized master agreements. The market risk of MLDP AG’s portfolio is essentially removed by offsetting trades with MLCS. MLDP AG’s exposure to MLCS resulting from the change in the market value of these trades is collateralized on a weekly basis. Additional collateral is posted by MLCS to further insulate MLDP AG’s portfolio against potential market moves in the absence of MLCS.

Certain other provisions, including counterparty exposure overlimit, exposure to unrated and low-grade counterparties (resulting from transactions not subject to assignment to MLCS upon downgrade), and exposure caused by guaranteed affiliate transactions are also collateralized by MLCS. MLCS’ obligations are fully guaranteed by its ‘AA-/A-1+’ rated parent, Merrill Lynch & Co. Inc.

MLDP AG’s US\$350 million initial capital was subject to rigorous stress scenarios designed to assess capital adequacy and sensitivity, particularly in a newly originated multicurrency portfolio. Numerous tests were run through the risk model that

simulated portfolio composition as well as interest and exchange-rate market behaviors, and modeled counterparty default risk. Capital was adequate even under assumptions that included termination of the intermediation agreement with MLCS, accompanying inability to originate new transactions and to assign swaps prior to default, and gross exposure treatment.

In addition, MLDP AG's daily potential liquidity need over a three-month horizon following the termination of its intermediation agreement with MLCS, assuming MLCS' failure, is tested on a weekly basis. MLCS is required to post collateral to MLDP AG to satisfy a potential liquidity shortfall.

Operating Risks

MLDP AG intermediates transactions with certain eligible counterparties according to its intermediation agreement with MLCS. The offsetting trades between MLDP AG and MLCS are entered into under a master swap agreement. Certain events, such as a downgrade of Merrill Lynch & Co. Inc. to below 'A-2', failure by MLCS to satisfy a collateral call within two business days, and failure by MLCS to meet any provisions under its intermediation or master swap agreement with MLDP AG within seven business days, will result in the termination of the intermediation agreement and all the offsetting trades between MLDP AG and MLCS and the simultaneous wind-down of MLDP AG's portfolio.

Furthermore, MLDP AG has contracted with a contingent manager. In the event of a termination of the intermediation agreement, the contingent manager will assume responsibility for hedging and management of MLDP AG's portfolio to its final maturity while engaging in risk reducing transactions only. The contingent manager must be rated 'A' or better.

MLDP AG's capital and collateral is invested in the highest quality liquid securities consistent with Standard & Poor's investments for 'AAA' structured financings. The market value of the collateral investments is determined daily and adjusted according to Standard & Poor's market value discount factors. In addition, MLDP AG's independent auditor, Deloitte & Touche LLP, verifies MLDP AG's compliance with its counterparty and product restrictions and other provisions of its intermediation and master swap agreements with MLCS.

Morgan Stanley Derivative Products Inc.

Analysts:

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Credit Rating

AAAt

Credit Rating History

Jan. 10, 1994 AAAt

Outstanding Rating(s)

Counterparty credit AAAt

Sovereign Ratings

United States of America AAA/Stable/A-1+

Rationale

The 'AAAt' counterparty rating assigned to Morgan Stanley Derivative Products Inc. (MSDP) is based on Standard & Poor's assessment of its legal and operating structure and financial resources, including its initial capitalization of US\$150 million. MSDP is incorporated as a Delaware corporation wholly owned by Morgan Stanley, Dean Witter, Discover & Co. (MSDWD), from which it is also bankruptcy remote.

MSDP intermediates a wide array of interest rate, currency, and equity swaps and options between affiliate Morgan Stanley Capital Services (MSCS) and counterparties. MSDP uses offsetting transactions with MSCS to remove the market risk associated with derivative transactions involving counterparties. In addition, MSDP may, on a selective basis, guarantee certain affiliates' transactions with third-party counterparties. Guaranteed transactions are also hedged using offsetting swaps with MSCS and are collateralized. MSCS' obligations are fully guaranteed by MSDWD.

MSDP was established in January 1994. It has since added new interest rate and currency products to its list of eligible products. Its portfolio notional principal exceeds US\$184 billion, about 95% of which is concentrated in 'A' or higher-rated credit quality. MSDP's capitalization is currently in excess of US\$584 million.

MSDP is a termination structure, and its contractual obligations will accelerate upon the occurrence of certain events. The rating reflects Standard & Poor's opinion

of MSDP's extremely strong capacity to meet its obligations according to their contracted terms, whether at maturity or upon a termination event. The rating does not address the likelihood of the occurrence of a termination event.

Legal Risks

MSDP enters into derivative transactions with certain counterparties of MSCS under standardized agreements such as the International Swaps & Derivatives Association's master agreement. The market risk associated with these transactions is hedged through offsetting transactions with MSCS. These offsetting transactions are documented under a two-way mark-to-market master agreement according to which both MSDP and MSCS are required to post collateral to cover the other party's exposure resulting from the change in the value of these transactions. The collateral posted by MSDP is based on a threshold higher than the one established for MSCS, reflecting MSDP's superior credit quality.

The legal analysis of MSDP's structure involves the following issues:

- The separateness of MSDP from MSDWD, MSCS, and its other affiliates. Standard & Poor's has reviewed the nonconsolidation opinion provided by MSDP's counsel to the effect that the arrangements between MSDP and MSCS concerning marketing and operational support and payment processing will not cause the consolidation of its assets with those of MSDWD, or MSCS, in the event of the bankruptcy of either MSDWD or MSCS.
- The qualification of master agreements covering MSDP's counterparty transactions and offsetting transactions with MSCS as swap agreements under the Bankruptcy Code, 11, U.S.C., and their exemption from automatic stay in the bankruptcy of MSDWD, or its affiliates. Standard & Poor's has received an opinion of MSDP's counsel that the master swap agreements will qualify as swaps as defined under the Bankruptcy Code and, therefore, their termination will not be subject to automatic stay.
- The enforceability and timely availability of the collateral posted by MSCS under the offsetting transactions' master agreement. Standard & Poor's has received the opinion of legal counsel that MSDP will have a first-priority perfected-security interest in collateral posted under its master agreement with MSCS and that such collateral will not be subject to automatic stay under the Bankruptcy Code. All legal opinions are based on assumption and are subject to qualification.

Financial Risks

MSDP's methodology for evaluating credit risk to counterparties over the termination period incorporates net or gross treatment of exposure to each counterparty, as

applicable, and Standard & Poor's stressed cumulative default probabilities. MSDP's method for assessing concentration risk requires identification of the largest exposures in each rating category. Capital will be held against a varying number of these exposures, which insulates MSDP from defaults by counterparties with whom it has large exposures. The default of a counterparty may result in an increase in the amount of required capita. The probability of default and the concentration limits incorporated in MSDP's risk model are sufficiently conservative and provide for potential credit losses at a high level of confidence.

MSDP's portfolio is insulated from market risk, essentially by offsetting transactions with MSCS. Following a termination event, however, all of MSDP's transactions, including offsetting transactions with MSCS, will be terminated. During the termination period, MSDP will be exposed to changes in the market value of its portfolio.

MSDP's methodology for determining potential market risk during a termination period involves simulation of underlying indices using estimated volatility and correlation measures. The volatility measure is the greater of three different measures of volatility for each index based on the performance of the index over three different historical horizons. Estimates for correlation are based on the observed values of the indices over a period of time.

The results of the simulation exercise are values for the underlying indices from which the value of MSDP's portfolio at the end of the termination period will be calculated. The simulated changes in the value of the portfolio are then used to determine the level of capital required to cover the portfolio's potential market risk during the termination period, at a high level of confidence.

Tenor, product, and counterparty exposure overlimits, as well as exposure to noninvestment grade and unrated counterparties, are fully capitalized. MSDP's portfolio is mark-to-market daily, and its capital requirement is tested on a weekly basis. Failure to meet the minimum capital requirement will result in a termination event.

Operating Risks

MSDP has engaged MSCS as its agent for marketing, trading, settlement and operations under agency and intermediation agreements. MSDP originates transactions with investment grade counterparties. Should a counterparty's credit rating fall below investment grade, or its exposure exceed a certain pre-established threshold, MSDP will have the option to fully capitalize or otherwise collateralize the excess exposure with the counterparty's collateral within five business days.

MSDP has the choice of entering into either one-way or two-way collateral agreements with counterparties. One-way collateral agreements are subject to an

individual counterparty threshold based on the counterparty's credit quality and within prespecified limits as per MSDP's operating guidelines. Two-way collateral agreements, however, are subject to a threshold for each counterparty, which is established on a case-by-case basis.

MSDP's capital and collateral is invested in high quality liquid securities consistent with Standard & Poor's investment criteria for 'AAA' structured financings. The market value of these investments is determined daily and adjusted according to Standard & Poor's market value discount factors.

If trigger events occur, all of MSDP's derivative contracts with counterparties and its intermediation agreement, including offsetting transactions with MSCS, will be terminated. The following events constitute termination trigger events:

- Failure of MSDP to maintain its required capital, subject to a five-business-day cure period;
- Failure of MSCS to meet its obligations under offsetting transactions with MSDP, including the posting of collateral to MSDP, subject to a one business day cure period;
- Insolvency events relating to MSDWD or MSCS; or
- Downgrade of MSDP to a rating of below 'A-'.

During a cure period, MSDP's new transactions will be restricted.

Counterparties will be notified of the valuation date within two global business days following a termination trigger event. Valuation of the counterparties' trades will take effect on the designated valuation date two global business days from termination date. In the event of a market disruption, the valuation date may be postponed up to seven additional days.

Transactions will be valued using midmarket inputs from major pricing services, or by polling at least five dealers chosen from a list of designated market dealers. All termination payments will be made in U.S. dollars. Payments due to MSDP will be required within five global business days after the valuation date. Payments MSDP makes will be paid within 10 global business days after the valuation date.

MSDP's day-to-day operation is managed by its own managers and officers, according to established operating guidelines. MSDP has its own board of directors consisting of five members, two of whom are outside directors. In addition, MSDP's independent auditors, Ernst & Young LLP, periodically verify the company's compliance with its operating guidelines, including its counterparty and product and tenor restrictions as well as its capital and collateral requirements. The independent auditor will also oversee certain aspects of MSDP's valuation process in the event of an early termination.

Paribas Dérivés Garantis

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Credit Rating

Financial program AAAt

Credit Rating History

Aug. 13, 1993

Outstanding Rating(s)

Financial program AAAt

Sovereign Ratings

France (Republic of) AAA/Stable/A-1+

Rationale

The financial program rating assigned to Paribas Dérivés Garantis, a subsidiary of Paribas, is based on the legal separateness and capital adequacy of Paribas Dérivés, a bankruptcy-remote financial institution under French law that is subject to the regulatory authority of the Commission Bancaire.

Paribas Dérivés is established specifically to act as guarantor for a portion of Banque Paribas' derivatives activities. These activities include swaps and options on interest rates, currencies, and equity indices. The company allocates capital toward the satisfaction of its guarantees by evaluating the credit and market risk of its guaranteed portfolio. Paribas Dérivés acts as guarantor for only a portion of Banque Paribas' derivatives portfolio. A counterparty of Banque Paribas either may have all or none of its derivative positions with Banque Paribas guaranteed by the company.

Other significant strengths of Paribas Dérivés are its initial equity capital of FFr800 million, a dynamic capital requirement that changes according to the portfolio's credit quality and market-risk sensitivity, and counterparty credit limits on the amount of loss Paribas Dérivés could experience as a result of counterparty defaults.

Paribas Dérivés was rated in August 1993. As of Dec. 31, 1999 its guaranteed notional principal totaled US\$77.6 billion. The company's portfolio credit quality consists of about 35% 'AAA' and over 43% 'AA' rated counterparties. Paribas Dérivés is a termination structure; all guaranteed contracts will accelerate on termination.

Legal Risks

Standard & Poor's primary concern in rating a subsidiary higher than its parent is legal separateness. In Paribas Dérivés' case, several factors support the argument that the company would be treated as a separate entity in the event of an insolvency of Compagnie Financière de Paribas or Banque Paribas. Paribas Dérivés is incorporated as a financial institution regulated by the French banking commission. It has a separate corporate identity: its own accounts, location, equipment, personnel, and the ability to conduct business according to guidelines set down by its own board of directors.

Paribas Dérivés' board of directors consists of three directors, one of whom is an independent director, unaffiliated with the Paribas group. In addition, for practical and regulatory reporting purposes, any funds transferred to Paribas Dérivés from its parent are considered to be Paribas Dérivés' equity. Standard & Poor's has received legal opinion to the effect that Paribas Dérivés would not be consolidated with Compagnie Financière de Paribas or Banque Paribas in the event of an insolvency of either entity.

As security for Paribas Dérivés' reimbursement obligation, Banque Paribas assigns, by way of security, receivables from its derivative contracts which are guaranteed by Paribas Dérivés. Paribas Dérivés has conveyed legal-counsel opinion to Standard & Poor's that is confirmed by a prominent French scholar to the effect that the assignment will be enforceable in the event of a judicial insolvency of Banque Paribas.

Moreover, Standard & Poor's has relied on the termination events, in particular, termination upon the appointment of a banking commission administrator for Banque Paribas (the insolvency of Banque Paribas) and other operational guidelines, to ensure enforceability of the assignment under French law. All legal opinions are based on assumption and are subject to the qualification.

Financial Risks

Paribas Dérivés' ability to guarantee Banque Paribas' derivatives obligations is based in part on the net asset value of guaranteed derivatives contracts assigned by Banque Paribas to the company. If Banque Paribas fails to perform on its derivatives obligations because of its financial condition, or that of its parent, Paribas Dérivés would perform on Banque Paribas' guaranteed net liabilities. The Paribas Dérivés' guarantees are for the net value of each counterparty's guaranteed contracts, thereby eliminating the need to determine whether netting is enforceable under French law or the laws of the various counterparties. Guarantees by term cover only the net value outstanding under the relevant contracts.

Paribas Dérivés' capital requirement is the greater of FFr800 million or a calculated capital requirement. The guaranteed portfolio is mark-to-market daily, and Paribas Dérivés' capital requirement is calculated each week. Failure of Paribas Dérivés to maintain the required capital will constitute a termination trigger event.

If Banque Paribas' long-term debt rating falls below 'BBB', the capital requirement will be calculated daily. If Banque Paribas' long-term debt rating rises to 'AA', the minimum capital will be the greater of the calculated capital requirement, or FFr600 million. Paribas Dérivés holds the option to guarantee the new contracts of Banque Paribas at its discretion.

The method employed by Paribas Dérivés to determine its capital requirement addresses two major risks of counterparty defaults and potential market risks over the termination window. Paribas Dérivés' method of calculating losses arising from counterparty defaults incorporates Standard & Poor's stressed default probabilities for counterparties according to their ratings. The market risk allocation is calculated by simulating the market indices contained in Paribas Dérivés' guaranteed portfolio. The simulation evaluates the portfolio by imposing weekly and daily percentage changes on all indices according to historical performance of the indices. The most stressful of three volatility measures of the portfolio's value is used to quantify potential market risk.

For the purpose of capital support, assets arising from the assignment by Banque Paribas of each derivative contract that Paribas Dérivés guarantees are aggregated by counterparty and haircut by the counterparties' appropriate limits. The limit structure is designed so that the company never relies on receivables from any counterparty in excess of FFr800 million. Additionally, it relies only on counterparty receivables from counterparties rated 'A-' or above. The limits Paribas Dérivés has established are not designed for the purpose of defining credit guidelines for continued operations, but rather to limit the amount of loss due to defaulting counterparties that Paribas Dérivés could realize during the termination window.

Operating Risks

During its normal course of business, Paribas Dérivés tests its capital requirement resulting from new guarantees before providing such guarantees. Additionally, it monitors this activity daily and, if it deems necessary, Paribas Dérivés will discontinue its guarantee activity partially, or completely. The company's day-to-day activity consists of reviewing all new guaranteed swap contracts and verifying the necessary confirmation documentation.

Paribas Dérivés invests its capital in high-quality liquid securities consistent with Standard & Poor's investment criteria for 'AAA' rated structured financings. The

market value of these investments is determined weekly and adjusted according to Standard & Poor's market value discount factors for capital calculation purposes.

All of the company's guaranteed contracts will terminate if any of the following events occur:

- The insolvency of its parent;
- The insolvency of Banque Paribas;
- The failure of Paribas Dérivés to maintain minimum required capital; or
- The downgrade of Paribas Dérivés below 'A-'.

The above conditions are without prejudice to any standard events of default or early termination provided for in the master agreement between Banque Paribas and its guaranteed counterparty.

Termination, in this case, relates to derivatives obligations of Banque Paribas that Paribas Dérivés has guaranteed. Upon occurrence of a termination, the company will notify its guaranteed counterparties and inform them of a designated valuation date on which all outstanding positions under its guarantees will be calculated. On the designated valuation date, Paribas Dérivés will calculate the midmarket value of each counterparty's portfolio.

All payments to Paribas Dérivés will be due on the eighth calendar day after the valuation date and all payments from Paribas Dérivés will be due on the 13th day after the valuation date. All termination payments will be denominated in U.S. dollars. If, according to Paribas Dérivés, market conditions on the designated termination date make it impractical or impossible to effect valuation of the portfolio, the valuation will be postponed until the cause of this condition subsides, but not later than eight calendar days after the termination event. To evaluate market conditions, Paribas Dérivés will select six counterparties at random from its guaranteed portfolio and inquire whether the valuation should proceed. Paribas Dérivés' compliance with its established operating guidelines is verified weekly by its independent auditors, HSD Castel Jacquet, the French subsidiary of Ernst & Young LLP.

Sakura PrimeSM

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Credit Rating

Financial program AAAt

Outstanding Rating(s)

Financial program AAAt

Credit Rating History

Aug. 5, 1996 AAAt

Sovereign Rating

United States of America AAA/Stable/A-1+

Rationale

The rating assigned to Sakura PrimeSM, a financial program of Sakura Global Capital Inc. (SGC), is based on Standard & Poor's assessment of the program's legal, financial, and operating structure. Sakura Global Capital Inc. is a wholly owned and fully guaranteed subsidiary of Sakura Bank Ltd. Under this program, SGC will enter directly into a wide array of derivative transactions in a number of different currencies. Counterparties to these transactions will benefit from an unconditional and irrevocable surety bond provided by an 'AAA' insurer, Capital Markets Assurance Corp. (CapMAC). This surety bond provides for net termination payments under the program. CapMAC may choose, at its option, to reinsure any portion or all of the risk it assumes under the surety bond.

All program transactions between SGC and its counterparties are also unconditionally and irrevocably guaranteed by the Sakura Bank Ltd. All collateral posted by SGC under the program, and all swap receivables within the program, will be pledged for the benefit of program participants. This 'AAAt' program is being executed from four centers: Tokyo, Hong Kong, London, and New York.

The program is a termination structure providing for the acceleration and cash settlement of program contracts upon the occurrence of certain events. The 'AAAt' rating reflects Standard & Poor's opinion of the program's extremely strong financial

capacity to meet guaranteed net payment obligations according to contracted terms, whether at scheduled maturity or when a termination event occurs. The rating does not address the likelihood of a termination event.

Legal Risks

Under the program, SGC enters directly into derivative transactions with counterparties. Sakura Bank Ltd. guarantees SGC's payment obligations under each guaranteed master. The surety bond will be called upon to meet the net termination payments if both SGC and Sakura Bank fail to meet their obligations under the program. SGC has secured all program counterparties, giving a perfected first-priority security interest in all collateral posted under the program (calculated by a program risk model), the proceeds of all hedging accounts, and all swap receivables to a collateral agent, Citibank N.A. Collateral may take only the form of U.S. dollar cash and U.S. Government Treasuries.

The legal issues concerning this program relate to:

- The enforceability of the program's documentation,
- The enforceability of the set-off and netting provisions in the guaranteed master agreements, and
- The timely availability of the collateral pledged under the program.

Standard & Poor's has received legal opinions from SGC's counsel that all agreements are legal, valid, and binding agreements; that each program counterparty and SGC would be considered a "swap participant" under the Bankruptcy Code; that the collateral agent does have a perfected first-priority security interest in all collateral, proceeds accounts, and swap receivables, and that this would be enforceable in the event of an insolvency of SGC without being subject to a stay; and that guaranteed counterparties' waiver of their rights to set off amounts pledged by SGC as receivables under the program against other amounts owed by SGC would be enforceable. All legal opinions are based on the assumptions and subject to the qualifications stated therein.

All transactions are documented under an International Swap and Derivatives Association (ISDA) master agreement. Counterparties that have other transactions with the SGC outside the program will complete a separate master agreement for transactions under the program. SGC will not transact with any counterparty under the program until both parties have signed a separate program ISDA master.

The Sakura Bank guarantee will pay all program obligations regardless of whether the counterparty is in a netting or nonnetting jurisdiction. Further, the CapMAC surety bond is obligated to pay the net termination payments of the program. As such, it is not necessary to determine whether a counterparty is in an enforceable netting jurisdiction.

Financial Risks

The program's financial structure is designed to meet all program obligations either at maturity of the transaction or at termination. The termination window is 15 business days. Sakura PrimeSM is required to provide coverage for market risk, credit risk, country risk, and liquidity over this termination window, as well as covering new transactions in day-to-day activity between model runs. Because this is a guarantee structure, there are no mirror transactions with other Sakura entities.

There is no limit on the surety bond; however, SGC will post collateral to the custodian when the program amount exceeds a predetermined threshold. The program amount is the sum of a liquidity adjustment, a cash flow adjustment, and the larger of the potential risk amount or the current risk amount. In addition, SGC is obligated to make all scheduled payments to all program counterparties before a termination event. Consequently, exposure resulting from the program's activities is covered by SGC's and Sakura Bank's resources. Should a termination event occur, however, Sakura PrimeSM must have sufficient independent resources to meet its own obligations.

The potential risk amount is calculated using a scenario simulation model. This model may be run any business day, but is run at least once a week. The potential risk amount is calculated by approximating a multidimensional lognormal distribution of interest rates and exchange rates by a multinomial distribution of key factors. This model generates a large number of interest rate and foreign-exchange rate scenarios for a future date (the maturity of the longest dated transaction in the program), covering various combinations of yield curves and currency exchange rates.

The input data used to generate these scenarios are as follows: current market data including yield curves, yield volatility curves, currency exchange rates, and their volatilities; and a variance-covariance matrix of market variables estimated from historical data. All inputs are updated each week so that the scenarios generated are consistent with current market data and the historical interrelationship among market variables.

The scenario simulation model also incorporates Standard & Poor's stressed long-term cumulative default probabilities. The counterparty default incidents and the country risk events are simulated using Monte Carlo as an integrated part of the scenario simulation model.

The model generates a distribution of potential losses for each counterparty at different intervals over the life of the portfolio. For each time period, the exposures are aggregated and Sakura PrimeSM must cover this at a high level of confidence. No recovery is assumed, and counterparty concentration limits are incorporated. All overlimits are charged at 100% in the program amount calculation. The calculation

takes netting jurisdictions into consideration, incorporating both net and gross limits, even though the surety bond obligation is driven by a pure net methodology.

The liquidity adjustment is calculated by measuring a transaction's price sensitivity, in U.S. dollar terms with respect to a one-basis-point change in interest rates. This sensitivity is multiplied by a predetermined factor, based on currency. These are then summed for all currencies.

The cash-flow adjustment incorporates all new transactions since the last model calculation date. All cash flows, both inflows and outflows, are summed for both new and existing transactions, and beyond a certain predetermined limit must be charged 100% in the program amount.

The current risk amount is the summation of the absolute value of the mark-to-market value of the portfolio, but only if it is a net payable, else zero, and the largest of the following:

- The single largest 'AAA' exposure,
- The sum of the two largest 'AA' or lower rated exposures,
- The sum of the three largest 'A' or lower rated exposures, or
- The sum of the five largest 'BBB' exposures.

Counterparties must be rated 'A-' or higher to be eligible to transact in Sakura PrimeSM. 'BBB' rated counterparties may be included in the portfolio, however, but only as a result of a downgrade. Any counterparty below investment grade will be assigned out of the program or cash settled.

Once all of the above figures have been calculated, they are summed to give the program amount. If the program amount is greater than a predetermined threshold, collateral must be posted to the collateral agent by the next business day. Sakura PrimeSM may not add any new transactions to the program while there is a collateral deficiency. Failure to post collateral within two business days (one day to post collateral, one day to cure) is an automatic termination event.

Operating Risks

The eligible transactions are interest rate swaps, caps, floors, collars, options, options on swaps, and cross currency swaps and options. The eligible currencies are JPY, STG, USD, EURO, CHF, AUD, and CAD. Transactions will have a maximum maturity of 10 years, with a one-year forward start. The policy will cover 12 years. The settlement currency is U.S. dollars. An ISDA master agreement will be used, and full two-way payment is the agreed methodology for defaulting counterparties and termination payments. When the transaction is agreed, each counterparty will receive a copy of the Sakura Bank guarantee and a participation certificate for the surety bond from CapMAC along with the ISDA master. Upon termination, the counterparty

can choose three institutions from an agreed list of financial institutions to act as the calculation agents for the termination valuation, at mid-market.

The program is structured to have three stages: normal operation, wind-down, and termination. CapMAC has the option to declare a wind-down event by written notice to SGC; however, a wind-down may be curable, and SGC may return to normal operation. Should a wind-down event be triggered, SGC must halt the origination of all new transactions under the program.

If SGC terminates or agrees to terminate any of the program transactions, any such termination must be a risk-reducing transaction. CapMAC will suspend its commitment to any new Sakura PrimeSM participants; however, the surety bond from CapMAC will continue to guarantee all transactions entered into before the wind-down until maturity.

A wind-down will be triggered if any one of the following events occur (curable unless otherwise indicated):

- Nonrenewal of the program (not curable);
- Early cancellation of the program by SGC (not curable);
- Reinsurer's downgrade below 'AA-' and a replacement is not found within 30 days;
- Reinsurer declares bankruptcy or insolvency;
- Sakura Bank does not own more than 50% of SGC's capital stock and voting securities;
- Failure by SGC to pay fees to CapMAC within the 10-day cure period;
- Failure by SGC to provide CapMAC with a program compliance certificate within one business day with a one-day cure;
- Failure by SGC to comply with any covenants in the program documents;
- Breach of representations and warranties by SGC;
- CapMAC downgraded below investment grade; and
- Failure by SGC to find a replacement collateral agent or futures broker within 30 days if they are downgraded below 'A-1.'

In the event of a downgrade of CapMAC below 'AA-', SGC will have the option of canceling the program and terminating the surety bond with the consent of each counterparty, or replacing the surety bond with similar coverage acceptable to each counterparty, reinsurer, and rating agency.

Termination

Upon the occurrence of certain events (termination events), all transactions within the program will accelerate and cash settle. The maximum termination window is 15 days, if there is a market disruption event preventing valuation. The minimum is nine days, if there are no disruptions. A termination event is not curable. Program termination events will be:

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- Certain bankruptcy or insolvency events of SGC or Sakura Bank,
 - The program's rating falls below 'A-',
 - Failure by SGC to pay any amounts under the program masters,
 - Sakura Bank is downgraded below 'BBB-',
 - The collateral agent shall cease to have a perfected first-priority security interest in the program security, and
 - Failure by SGC to post collateral within a one-day cure period.

Each program counterparty will be informed of the termination, in writing, within one day of termination. They immediately (by day two) contact three of the referenced market-makers for termination values of their transactions (assuming no market disruption) and return these valuations to the collateral agent. At this point, the collateral agent has already been notified of the termination and is liquidating all collateral.

By day four, the collateral agent delivers written notice to CapMAC, SGC, and Sakura Bank of the value of the now all-cash collateral, the amounts payable, and the amounts receivable for all swap counterparties under the program. On day five, all counterparty receivables must be received. On day six, the collateral agent calculates whether the receipts and cash will be sufficient to cover all payables. If there is a shortfall, SGC, Sakura Bank, and CapMAC are notified.

Sakura Bank must deliver cash in the amount of the shortfall by day seven. If Sakura fails to deliver the full payment, the collateral agent will draw the remaining amount from the surety bond, and will make full payment to all counterparties on day nine.

Surveillance

SGC must send a program compliance certificate to CapMAC every week outlining the program amount, all new transactions entered into since the last certificate and their valuation, all transactions entered into and the mark-to-market value of all master agreements. The certificate includes a summary of all hedge transactions and their mark-to-market value, and a summary of all collateral posted and its mark-to-market value. Standard & Poor's receives a copy of this certificate.

Further, Sakura PrimeSM has an independent accounting firm, Deloitte & Touche LLP, that provides a regular compliance and verification report to Standard & Poor's. Deloitte & Touche additionally provides a quarterly certificate that indicates whether any wind-down or termination event has occurred or is occurring to CapMAC. Standard & Poor's likewise receives a copy of this certificate. A quarterly report will be sent to each program counterparty detailing the mark-to-market value of each transaction under their master agreement.

Salomon Reinvestment Co. Inc.

Analysts:

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Credit Rating

AAA/A-1+

Outstanding Rating(s)

Counterparty credit AAA/A-1+

Credit Rating History

Feb. 29, 1996 AAA/A-1+

Sovereign Ratings

United States of America AAA/Stable/A-1+

Rationale

The ‘AAAt’ rating assigned to Salomon Reinvestment Co. Inc. (Sarco) is based on Standard & Poor’s assessment of Sarco’s legal, financial, and operating structures. Sarco, a wholly owned subsidiary of Salomon Brothers Holding Co. Inc. (SBHC), is incorporated in Delaware. It is an SEC-registered bankruptcy remote broker dealer and is a member of the NASD and Securities Investor Protection Corp. (SIPC). Sarco has been established for the purpose of offering investment agreements (IAs) and flexible repurchase agreements (flex repos) to counterparties and has the option to hedge the market risk associated with such IAs and flex repos with reverse repurchase agreements, Eurodollar futures, and other eligible investments.

Sarco is designed to meet its obligations, including accrued interest, to maturity. However, upon specified termination events, all of Sarco’s obligations will accelerate and cash-settle. The ratings reflect Standard & Poor’s opinion of the structure’s extremely strong capacity to repay principal plus accrued interest, on a timely basis, whether at scheduled maturity or upon termination. The ratings do not address the likelihood of a termination event.

Legal Risks

Standard & Poor's analysis examines the legal implications of Sarco's structure. Sarco has been established as a legally independent entity that is not subject to consolidation with any other entity in the event of the insolvency or bankruptcy of SBHC or any other Salomon Smith Barney affiliate. To achieve this, Sarco has incorporated a number of structural and operational provisions to provide a basis for legal treatment as a separate entity.

Standard & Poor's also reviewed the legal status of the introduction of the capital from SBHC in the form of a subordinated loan. Standard & Poor's has relied on the opinion of Sarco's independent counsel that the assets and liabilities of Sarco would not be consolidated with those of either Salomon Brothers Inc. or SBHC upon the bankruptcy of either entity, and that there was no fraudulent conveyance in connection with the capital contribution.

Sarco's board of directors consists of five directors, two of whom are not, and have not, been affiliated with SBHC or any of its affiliates for at least a year before their appointment. Sarco has one independent officer.

Standard & Poor's also conducted an analysis of the legal implications of Sarco transacting in reverse repurchase agreements under New York law. Standard & Poor's is comfortable with Sarco's ability to enter into the contract, and the treatment of the collateral should the counterparty default. This analysis required review of the following areas:

- Perfection of the security interest in the collateral,
- Status of the counterparty,
- Effect of termination on the repo,
- Enforceability and timely availability of the security upon default of the counterparty, and
- Documentation.

When looking at repurchase and reverse repurchase transactions, Standard & Poor's looks to either the rating of the counterparty or the collateral exchanged in the transaction. To satisfy Standard & Poor's repo criteria using the counterparty rating, a counterparty must be rated at least as high as the vehicle with which it is transacting. In this case, Sarco would need an 'A-1+' rated reverse repurchase agreement counterparty to rely on the counterparty rating and to not have to look to the collateral.

The collateral does not have to meet any minimum requirements in this case; it can be any bond bearing of any rating. This approach, however, is subject to counterparty diversification. If the counterparty rating is not high enough to be reliable, the collateral involved must be of sufficiently high quality to achieve the

desired rating. If this methodology is employed, then only U.S. government bills, notes, bonds, and agency securities rated 'AAA' are acceptable.

Any transaction of this kind must then be overcollateralized to the desired rating level while also taking into account the legal status of the counterparty. This is necessary when considering the time frame within which the collateral might have a legal stay imposed on it. That is, the number of days it will take to obtain the collateral to liquidate in order to meet the obligation of a defaulted counterparty. Currently, Standard & Poor's requires three days for a corporate counterparty, four days for a financial institution, eight days for an SIPC counterparty, and 15 days for an SIPC affiliate counterparty.

Sarco has agreed to meet Standard & Poor's criteria for entering into reverse repurchase transactions. The maximum maturity is 364 days. All counterparties must meet the 'eligible counterparty' criteria established by Sarco and approved by Standard & Poor's. The agreement used is the PSA Standard Master Repurchase Agreement, which must incorporate automatic early termination language of the reverse repo if a termination is triggered.

Financial Risks

Sarco is obliged to be in the position to repay all obligations plus accrued interest when it comes due. The daily capital adequacy test incorporates all IAs and flex repos, all accrued interest due to date, and all interest payable in the eight business day termination window. Reserves must also be capitalized, however, for the liquidation of any hedges and repurchase transactions and eligible investments, and the overcollateralization of reverse repurchase counterparties as needed. There is also a capital reserve for unforeseen events and operational risk.

When calculating a capital-charge reserve for any Eurodollar futures, Sarco reviews the historical performance of a single-day and a two-day movement of futures contracts over a certain time frame. It then calculates the standard deviation and arrives at a capital charge for each contract in which it can transact, in some cases up to an eight standard deviation coverage level. A limit structure has also been imposed on the amount of futures that can be held in any particular contract linked to the portfolio size and number of outstanding contracts in any single futures contract. If Sarco chooses to hedge any of the IAs using government securities or other eligible investments, Sarco is capital-charged according to Standard & Poor's overcollateralization tables.

The capital adequacy test incorporates all of the above components. It is calculated daily by an independent group. If the capital adequacy test is breached at any time, Sarco has one day in which to cure the breach. If the breach remains uncured, a termination event is automatically triggered.

Operating Risks

Sarco has contracted Bank of New York Co. Inc. to act as custodian for all collateral holdings. Chase is responsible for the daily mark-to-market of the collateral, and only Standard & Poor's Recognized Pricing Services or "primary dealer" prices recognized by the Federal Reserve Bank of New York will be used.

Termination

The termination window is eight business days. Within that window, Sarco must terminate all contracts and be able to repay all obligors by the eighth day. Upon becoming aware of a termination event, all repurchase agreements, reverse repurchase agreements, IAs, and flex repos are automatically terminated and interest accrued and due to the last day of the termination window is calculated. Sarco must convert (or instruct the custodian to convert) all eligible investments to cash. Any futures contracts are to be closed out within one business day of the termination notice, and all noncash margin is to be sold and converted to cash. When the above are completed, all counterparties are repaid with the proceeds.

The following constitute termination trigger events:

- Failure to cure a violation of the capital adequacy requirement in one business day;
- Rating downgrade of Sarco below 'A-'; and
- Bankruptcy or insolvency of SBHC, Salomon Brothers Inc., or Salomon Smith Barney Holdings Inc.

In the event of a termination, Sarco will inform all IA counterparties in writing. Some of these counterparties may also be informed of a reinvestment option at the same time. This allows the counterparty to reinvest its funds with Sarco under a new agreement as of the early termination date under the same terms and conditions as the prior IA, except that the new start date will be the early termination date.

Sarco reserves the right to make any other amendments to the terms of the old agreement that requires modification to accommodate a change of circumstance. No cash will change hands; it is a termination of the old agreement and a simultaneous commencement of a new agreement (without the termination language). Reinvestment contracts will not benefit from a rating by Standard & Poor's.

Surveillance

Sarco calculates capital adequacy and performs all tests daily. All limits on repurchases, futures, and eligible investments are used as an incurrence test prior to the actual transaction. Any breach amount above and beyond these limits is charged to capital. To ensure strict adherence to its statement of procedures and limit structure, Salomon Brothers Holding Co.'s Treasury Department and periodic internal audits bear responsibility for ongoing surveillance of all transactions on a daily basis. Arthur Andersen, Sarco's external auditor, conducts reviews for compliance on a weekly basis and provides the results to Standard & Poor's.

Salomon Swapco Inc.

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Credit Rating

AAA_t

Outstanding Rating(s)

Counterparty credit AAA_t

Credit Rating History

Feb. 8, 1993 AAA_t

Sovereign Rating

United States of America AAA/Stable/A-1+

Rationale

The ‘AAA_t’ counterparty rating assigned to Salomon Swapco Inc. is based upon Standard & Poor’s assessment of Swapco’s legal, financial, and operating structure. Swapco, a wholly owned subsidiary of Salomon Brothers Holding Company (SBHC), was incorporated under the laws of Delaware. It was the first ‘AAA_t’ vehicle rated by Standard & Poor’s, and was established to transact in a variety of derivative products, including swaps and options on interest rates, currencies, and equities. The “t” suffix reflects Swapco’s incorporation of a termination feature requiring that all of Swapco’s derivative contracts accelerate and cash-settle upon certain trigger events. The rating reflects Swapco’s extremely strong financial capacity to meet all the obligations of its derivative transactions, in accordance with their terms, whether at maturity or upon termination. The rating does not address the likelihood of a termination event.

Standard & Poor’s decision to rate Swapco’s ability to repay its counterparties with ‘AAA_t’ certainty is also based upon the capitalization and limit structure of the vehicle. Swapco’s capital requirement is the greater of US\$175 million or a dynamic capital amount calculated daily, based on the size, credit quality, and concentration of the exposure in its portfolio, providing Swapco with incentive to maintain a diversified portfolio of high credit quality counterparties.

Swapco acts as an intermediary between SBHC and third-party counterparties. For each transaction with a counterparty, Swapco enters into a exact offsetting mirror

transaction with SBHC, thus eliminating its market exposure. Protection against credit exposure to SBHC is provided primarily by collateral posted by SBHC to Swapco. Protection against credit exposure to Swapco's counterparties is provided by Swapco's capital.

On Nov. 28, 1997, Salomon Inc., Swapco's indirect parent, combined with Travelers Group's Smith Barney Holdings Inc. to form Salomon Smith Barney Holdings Inc. There was no adverse impact on Swapco resulting from this change to Swapco's ultimate ownership, and accordingly, Standard & Poor's reaffirmed Swapco's 'AAAt' rating at that time.

Swapco was rated on Feb. 8, 1993. Since its inception, Swapco has been expanding its portfolio's notional and counterparty base at a very solid rate. As of June 22, 1998, Swapco's outstanding derivative portfolio notional was US\$279 billion. Required capital as of Dec. 31, 1997, was US\$255 million.

Legal Risks

An important part of Standard & Poor's analysis relates to the examination of the legal implications of Swapco's structure. A major area of concern is the establishment of Swapco as a legally independent entity not subject to consolidation with any other in the event of the insolvency or bankruptcy of SBHC or any affiliate. To achieve this, Swapco has incorporated a number of structural and operational provisions to provide a basis for legal treatment as a separate entity. Standard & Poor's has also received the opinion of legal counsel that, subject to certain assumptions and based on certain justifications, Swapco should not be consolidated with SBHC or its affiliates upon their bankruptcy or insolvency.

Another area of particular concern in the analysis of a derivative products company relates to the legal enforceability of the netting provision in standard swap documents. In the United States, the enforceability of netting has been confirmed by the Bankruptcy Code. However, Standard & Poor's believes that in some other countries, there is the risk netting will not be enforceable. In this case, Swapco's potential credit loss to a counterparty would be the sum of all amounts owed to Swapco by a counterparty without offsetting the amounts owed to the counterparty by Swapco (gross exposure). Therefore, Standard & Poor's believes that allowances have to be made for the possibility that the relevant exposure in many jurisdictions is the gross exposure to a counterparty and not the net exposure. To address this concern, Swapco's dynamic capital calculation incorporates certain calculations that provide for the measurement of gross exposures in these jurisdictions. The legal opinions received by Standard & Poor's are based on certain assumptions and are subject to qualification.

Financial Risks

Swapco's portfolio consists primarily of interest rate and currency swaps. However, options, swap options, forwards on interest rates, currencies, and equities are also permitted transactions. Adherence to a statement of procedures requires Swapco not to enter into derivative transactions with counterparties rated below investment grade (rated 'BBB-'). In general, the amount of capital required increases for lower-rated counterparties. The increased cost of higher capitalization provides an incentive for Swapco to maintain a high credit quality portfolio. If a previously eligible counterparty is subsequently downgraded to below investment grade, Swapco is not required to assign or terminate the transaction, but will no longer be able to enter into new transactions with that counterparty, unless they reduce Swapco's potential credit exposure to that counterparty. All exposure to noninvestment-grade counterparties must be fully capitalized. Swapco may transact with unrated counterparties, but similarly, all exposures must be fully capitalized, unless and until Standard & Poor's assesses the credit quality of the counterparty to be at least investment grade. If Standard & Poor's determines the credit quality of the counterparty to be at least investment grade, the counterparty will be treated for capitalization purposes as a 'BBB-' rated entity. Swapco may guarantee transactions entered into by other approved Salomon Smith Barney affiliates. These transactions are treated as direct obligations of Swapco when calculating exposure in the daily dynamic capital calculation.

The nature of Swapco's structure mirroring all transactions with SBHC means that, provided there aren't any counterparties failing to make timely payments, Swapco is effectively a conduit, passing payments from SBHC to customers, and from customers to SBHC. For its credit intermediation, Swapco receives an intermediation fee from SBHC. If, however, a counterparty fails to make a payment, Swapco must be able to make the matching payment on the corresponding back-to-back transaction out of its capital. If a customer defaults and its transactions are terminated and if the customer is out-of-the-money (the customer owes a payment to Swapco), Swapco terminates the matching transaction with SBHC and must make a termination payment to SBHC, regardless of the amount it collects from the customer. This situation could result in a consumption of capital equal to the net market value of transactions with the customer (net exposure) or the gross market value of the transactions (gross exposure). The gross exposure is realized if a foreign jurisdiction enforces only those contracts between the customer and Swapco that are favorable to the customer. In either case, if the capital consumed causes the remaining capital to fall below the dynamic daily capital requirement, Swapco will have a two-day cure period to remedy the shortfall or a termination event will be triggered.

If SBHC defaults or any other termination event is triggered, all counterparty transactions are accelerated. All termination payments owed to Swapco by

counterparties are due five days after the valuation date. All termination payments owed by Swapco to counterparties are due 10 days after valuation. Thus, Swapco relies on capital for all termination payments owed to it but not paid within that five-day period. Termination payments owed to Swapco by SBHC are covered separately by collateral posted by SBHC and held by Swapco's trustee. The collateral may be used solely to meet the SBHC's obligation to Swapco. Swapco's capital may be used for any purpose, including coverage of any amount owed by SBHC in the unlikely event that collateral posted is insufficient.

Swapco's capitalization is based on the greater of US\$175 million or a daily dynamic capital calculation, requiring Swapco to maintain capital based on the size, concentration, and credit quality of the exposure in its portfolio. Swapco's dynamic capital calculation incorporates several subcalculations, each one designed to address specific portfolio risks. As Swapco's portfolio notional grows and exposures increase, the dynamic nature of the capital formula requires additional capital to address the risks of a larger portfolio.

Each day, Swapco performs two computations. The first is the actual capital of Swapco, equal to the difference between Swapco's assets and its liabilities minus the haircuts discussed below. The second is the dynamic calculation of minimum capital requirement. Because Swapco's portfolio is perfectly matched by mirror transactions with SBHC, changes in the level of underlying indices do not affect the value of actual capital. Changes in market levels do, however, affect the amount of required capital due to the resulting change in the value of individual transactions and, consequently, customer exposures. Each day, Swapco's actual capital must exceed that day's minimum capital requirement, or a termination event is triggered if not cured within two days. Therefore, if Swapco suffers a credit loss that causes its actual capital to fall below the required capital, or if changes in market levels cause the required capital to increase above the actual capital, Swapco has two days to receive additional capital or to reduce customer exposures to avoid triggering a termination event.

The existence of the offsetting back-to-back transactions with SBHC results in a potentially large credit exposure to Swapco. Swapco has addressed this risk through a dynamic collateral formula. SBHC posts collateral to Swapco daily in an amount equal to Swapco's exposure to SBHC plus a market-exposure cushion. If SBHC fails to post the required collateral, a termination will occur following a two-day cure period. The collateral cushion is designed to cover the potential increase in exposure between the last good valuation date and the date that all contracts are valued in a termination. In addition, the required collateral cushion increases if Salomon Smith Barney Holdings Inc.'s rating is lowered below certain levels.

In the event that Swapco has a negative exposure to SBHC, Swapco may post collateral to SBHC, if available. Collateral will be posted by Swapco in an amount equal to SBHC's exposure to Swapco less the market risk cushion amount. Offsetting

the exposure amount against the cushion amount protects Swapco if the ultimate payable to SBHC decreases during the termination process. Standard & Poor's has assessed Swapco's capital and collateral formulas under stressful market conditions, and in the case of capital, assumed severe counterparty defaults, and determined them to be consistent with an 'AAAt' counterparty rating.

All of Swapco's capital and collateral is invested in certain permitted securities rated 'AAA' by Standard & Poor's. Additionally, securities are subject to Standard & Poor's overcollateralization and capital haircuts to account for potential decreases in the securities' market value between the last good valuation date and the date securities will be liquidated in a termination scenario.

Operating Risks

The counterparty rating assigned to Swapco blends elements of structured finance and unsecured financial analysis to assess capital adequacy for an operating entity with a dynamic portfolio of derivative products. A key component in determining the adequacy of Swapco's capital is the structural termination feature, which requires that all of Swapco's derivative contracts be cash settled within a predetermined period of time upon certain termination trigger events. The existence of termination events linked to the maintenance of capital, collateral, and liquidity ensures that Swapco will have liquid assets, consistent with a 'AAAt' rating, in the form of portfolio receivables and invested capital to meet the payment obligations of a potential termination process. In the event of a termination, each Swapco counterparty will either pay or receive a net termination amount representing Swapco's determination of the midmarket value of all transactions between Swapco and that counterparty. Swapco disseminates termination values to every counterparty every quarter on every outstanding transaction that it has with Swapco.

Swapco has incorporated five termination trigger events:

- Failure by SBHC to post the required collateral to Swapco within a two-day cure period;
- Failure by Swapco to maintain actual capital equal to the required capital, subject to a two-day cure period;
- Failure by Swapco to maintain the minimum required liquidity amount in the form of cash or cash-equivalent investments, subject to a two-day cure period;
- Downgrade of Swapco's counterparty rating below the 'A' category by any of its rating agencies; and
- Bankruptcy of Salomon Smith Barney Holdings Inc., SBHC, or any another Salomon Smith Barney affiliate that has outstanding guaranteed transactions.

If a termination trigger event occurs, Swapco will notify its counterparties within one business day that a termination event has occurred and will provide the expected date for valuation of each counterparty's transactions. All transactions will then terminate and be valued on that date unless a market disruption event occurs, as defined in Swapco's swap documents, or unusually chaotic market conditions exist, as determined by a random poll of Swapco counterparties. If either of these conditions exists, the valuation process will be delayed until the conditions cease, but no longer than eight business days. If chaotic conditions exist in isolated markets, Swapco will delay valuation of only those contracts related to the disrupted markets (at the option of the counterparty) and proceed with the valuation of all other contracts. On the valuation date, Swapco will poll market participants or otherwise ascertain the midmarket inputs to be used in its valuation model to price the terminated contracts. Swapco's valuation models are reviewed weekly by its independent auditors for consistency with industry standards. Once the valuation has been completed, Swapco will notify each counterparty on the date of its net termination payable or receivable. All counterparties with net termination amounts that are payable to Swapco will be required to make payments within five business days of the valuation date. All counterparties with net termination amounts that are receivable from Swapco will be paid within 10 business days of the valuation date.

Under its statement of procedures, Swapco is permitted to offer customers the option to enter into two-way mark-to-market agreements. These agreements require the counterparty out-of-the-money to post collateral to the counterparty in-the-money. To address the potential liquidity requirements of these agreements, Swapco maintains liquidity lines from SBHC.

General, day-to-day management of Swapco's overall liquidity needs is carried out by Swapco's financial officer. Similar to the capital requirement, Swapco has to maintain a liquidity amount that is the greater of a fixed monetary amount or a formulaic amount based on required capital. However, to ensure liquidity mismanagement does not lead to an actual payment default on derivative products obligations by Swapco, Swapco has incorporated a liquidity termination trigger. If Swapco fails to maintain the minimum liquidity amount, a termination will occur in which all assets are liquidated and liquidity is assured at the value of the investments.

Swapco's statement of procedures requires that independent auditors (Price Waterhouse Coopers) verify each week Swapco's compliance with capital and collateral requirements, as well as counterparty and product restrictions. The independent auditors will also observe all aspects of the termination process in the event of a termination.

Swapco executes master swap agreements based on International Swap and Derivatives Association documentation with each of its counterparties. Each master swap agreement specifies Swapco's termination trigger events and describes the

termination procedure. Swapco's standard master agreement informs customers that full two-way payments will be required upon early termination and that there will not be any cross-default to, or set-off against, SBHC or any other Salomon Smith Barney affiliate for Swapco transactions.

SBCM Derivative Products Ltd.

Analysts:

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Jack Frishberg, New York (1) 212-438-2460
Cristina Polizu, New York (1) 212-438-2576

Credit rating

AAA

Credit Rating History

April 6, 1995

AAA

Outstanding Rating(s)

Counterparty credit AAA

Sovereign Ratings

United Kingdom AAA/Stable/A-1+

Rationale

The 'AAA' counterparty rating assigned to SBCM Derivative Products Ltd. is based on its bankruptcy remoteness, its capital adequacy, and its operating guidelines. SBCM Derivative Products is a wholly owned subsidiary of Sumitomo Bank Capital Markets Ltd. (SBCM Ltd.), which is a wholly owned subsidiary of Sumitomo Bank Ltd. (rated 'BBB+/A-2') and is incorporated under English law. SBCM Derivative Products is designed as a continuation structure such that, if Sumitomo Bank becomes insolvent, SBCM Derivative Products would be managed by a contingent manager to its portfolio's final maturity.

SBCM Derivative Products' capital adequacy has been calculated through the use of a risk model. The model uses its current portfolio and evolves the valuation indexes forward over the life of the portfolio, incorporating Standard & Poor's default and transition probabilities. The initial output of the model has provided Standard & Poor's with comfort that its calculated reserves are sufficiently conservative to support the potential SBCM Derivative Products' portfolio against losses arising from counterparty defaults, with a high degree of statistical confidence.

The company was initially capitalized with US\$300 million contributed by its parent. SBCM Derivative Products engages in a wide array of products, including interest

rate and currency swaps and options, and combinations thereof with its portfolio notional principal exceeding US\$28 billion. To neutralize market risk, the company uses mirror transactions with Sumitomo Bank Capital Markets Inc. (SBCM), a New York affiliate, the exposures under which are secured by the latter.

Currently, the notional principal of SBCM's portfolio consists mostly of swaps and options with counterparties rated 'AA' and 'AAA'. SBCM Derivative Products' 'AAA' rating is based on Standard & Poor's assessment of the company's legal, financial, and operating structure.

Legal Risks

SBCM Derivative Products is an English-law company, wholly owned by SBCM Ltd., which is itself a subsidiary of Sumitomo Bank Ltd., Japan. The company's board of directors consists of 11 directors, two of whom are not and have not been affiliated with Sumitomo Bank Ltd. or any of its affiliates for a period of at least two years before their appointments.

SBCM Derivative Products uses SBCM Ltd. and SBCM as its agents, and enters into ISDA swap agreements with various counterparties. SBCM Derivative Products also enters into mirror swaps with SBCM for each transaction with a counterparty. SBCM is a wholly owned U.S. subsidiary of Sumitomo Bank. SBCM covers SBCM Derivative Products' exposure to SBCM on the mirror swaps by posting collateral to a trust with a trustee in the U.S.

The multijurisdictional structure of the SBCM Derivative Products' agreements necessitated the evaluation of legal issues in the U.K., the U.S., and Japan. Standard & Poor's has received a legal opinion that, in the event of an insolvency of Sumitomo Bank or any of SBCM Derivative Products' affiliates, the derivative products firm will not be consolidated with the Bank or any affiliate. Further, the posted collateral would be available in a timely manner to enable the firm to continue its performance on its swap agreements with other counterparties.

Standard & Poor's has also received counsel's opinion that in the event of insolvency of SBCM, none of the amounts deposited as collateral would be recoverable as a preference, or otherwise avoided as a fraudulent transfer (or transfer at undervalue). To assess the sufficiency of SBCM Derivative Products' capital and collateral covering its obligations, Standard & Poor's received opinions under both U.K. and U.S. law that in an insolvency of SBCM:

- The netting provisions of the swap agreement would be enforceable;
- The collateral posted by SBCM would not be recoverable by a bankruptcy trustee, liquidator, or administrator of SBCM as a preference, fraudulent transfer, or transfer at undervalue, as the case may be;

- SBCM Derivative Products has a first-priority perfected security interest in the collateral; the firm's rights to liquidate the collateral in full satisfaction of the amounts due to it would not be subject to a stay; and
- SBCM Derivative Products' assets would not be consolidated with those of SBCM or those of Sumitomo Bank.

All legal opinions are based on the assumptions and subject to the qualifications stated therein.

In view of the lack of direct legal contacts with Sumitomo Bank in Japan and Sumitomo Bank's role as a shareholder, Standard & Poor's did not request Japanese law opinions. Standard & Poor's evaluated the likelihood that Japanese law would apply to the transaction and concluded that Japanese law would not apply to invalidate the perfection and priority of the security interest in the collateral posted by SBCM in the U.S., or otherwise affect the legal analysis of SBCM Derivative Products' rights under U.S. or U.K. law.

Financial Risks

SBCM Derivative Products' financial structure allows it to quantify and reserve the amount of money it requires to absorb counterparty defaults, to hedge its portfolio if SBCM defaults, and to pay ongoing administrative costs. The firm also maintains a capital buffer for unforeseen circumstances, outside of the structure's normal scope.

The risk model employs simulation techniques to generate the underlying market variables such as foreign exchange and interest rates. Historical and current information from market sources is used to estimate model parameters such as volatilities and correlations. The parameters are regularly updated and incorporated in the specified generating processes for the underlying market variables.

Given the evolution of market variables over the simulation horizon, the value of each transaction with each counterparty is calculated at each point in time. The exposure to each counterparty together with stressed default probabilities provided by Standard & Poor's are used to generate the statistical distribution of potential credit losses for each simulated market path. The distributions over all market paths are averaged to provide a single loss distribution. The required credit reserve can then be determined to cover the potential credit losses at a high level of statistical confidence.

In the derivative products firm's capital algorithm, the risk model is used to determine the required credit reserves for two portfolios of transactions. The first portfolio comprises transactions with investment-grade counterparties, and the second portfolio includes the transactions with unrated or speculative-grade counterparties. The model assumes a high probability of default for the counterparties represented in the second portfolio.

Under all circumstances, the current credit exposure to such counterparties is fully covered. The model does not limit the exposures to counterparties, nor does it assume a rating level below which an assignment would be triggered. The model also is used to quantify the potential increase in exposure of SBCM Derivative Products to SBCM over a 15-day period. The parameters used for this simulation exercise also are updated regularly, and dynamically adjusted to market conditions.

In addition to the above components of required capital, the firm's operating guidelines require a 100% capital charge for exposures above established country, counterparty, and group limits. Moreover, additional capital allocations cover the bid-ask spread in closing out a transaction.

All of the components of the required capital are calculated daily except for the risk model calculations, which are performed weekly. The sum of the components is compared to SBCM Derivative Products' available capital. The available capital is calculated by discounting all of the firm's investment securities by Standard & Poor's overcollateralization factors for market value transactions. The difference between the available capital and the capital requirements must always be greater than, or equal to, 15% of the available capital.

Operating Risks

Operationally, the firm depends on SBCM and SBCM Ltd. for many of its trading, marketing, and settlement activities. The relationships among these entities regarding these activities has been contractually defined so as not to alter the legal separateness of SBCM Derivative Products from the others. The company may intermediate trades from London, New York, and Hong Kong.

SBCM Derivative Products originates transactions with counterparties rated 'BBB' or higher. Exposures resulting from transactions with unrated and noninvestment-grade counterparties are fully capitalized. The company manages its exposure to SBCM by holding an option (the right, but not the obligation) to call collateral should its exposure to SBCM exceed US\$15 million.

The company has contracted with a contingent manager that is an experienced derivatives portfolio manager. The contingent manager is required to be rated 'A+' or higher. The contingent manager will begin familiarizing itself with the portfolio upon a downgrade of SBCM to or below 'BBB+'. The trigger for the assumption of management of the portfolio by the contingent manager would be a downgrade of SBCM to below 'BBB', or short-term rating below 'A-2'. In terms of active management, the primary task of the contingent manager will be to minimize all risk to the value of the portfolio and to the capital of SBCM Derivative Products.

Sigma Finance Corp.

Analysts:

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Reza Bahar, New York (1) 212-438-2390

Credit Rating

AAA/A-1+

Outstanding Rating(s)

Counterparty credit	AAA/A-1+
Senior secured	AAA
Commercial paper	A-1+

Credit Rating History

Feb. 2, 1995	AAA/A-1+
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Subsidiaries

Sigma Finance Inc.	
Senior secured	AAA
Commercial paper	A-1+

Rationale

The ratings for Sigma Finance Corp.'s senior U.S. and European commercial paper and medium-term note programs are based on Standard & Poor's assessment of Sigma's structure and capital adequacy. Sigma's investment portfolio must be managed within strict leverage, credit quality, and diversification limits. Sufficient capital support must be maintained to provide it with the capability to perform on its obligations in full, on a timely basis. Should an enforcement event occur (*see Enforcement section*), Sigma's portfolio must be wound down. The security trustee will realize its charge on the asset portfolio, and manage, liquidate, and reorganize the assets into various maturity-determined pools to repay all senior obligations as they become due. The senior secured obligations include all note holders, all derivative counterparties, and the liquidity providers.

Profile

Sigma, a limited purpose finance company, was rated in January 1995. It is a Cayman Islands limited liability company formed for the purpose of issuing debt securities in the European commercial paper and medium-term note markets and investing these funds in a portfolio of highly rated securities. Sigma has one wholly owned subsidiary, Sigma Finance Inc., a company incorporated in Delaware for the

sole purpose of issuing and selling U.S. commercial paper and medium-term notes as a nominee for Sigma. Such debt securities are guaranteed by Sigma. Sigma is owned by its capital note and equity holders.

The conduct of Sigma's investment activities has been delegated to Gordian Knot Ltd. (the investment manager) pursuant to an investment management contract. Gordian's owners include Deutsche Bank AG, Sarofim & Co., and Gordian's founders.

Sigma is a credit arbitrage vehicle. The debt is issued at the 'AAA/A-1+' rating, and assets of varying ratings, but always of investment grade, are purchased with the proceeds. These assets are match funded by the debt, or a derivative transaction is used to manage the cash flows, thus eliminating market risk. Sigma's policy is usually to buy and hold; thus, the credit spread is realized over the life of the asset.

Given the nature of Sigma's business of identifying pricing differentials in the credit market, the 'AAA/A-1+' rating is important for maximum profitability (within permitted leverage constraints). Therefore, Sigma was structured to achieve and maintain the 'AAA/A-1+' rating. If any debt security issued by Sigma ceases to be rated 'AAA/A-1+', an enforcement event will be deemed to have occurred.

Standard & Poor's concentrated its analysis of Sigma in the following five principal areas:

- Asset-liability portfolio composition,
- Market risk sensitivity,
- Leverage and capital adequacy,
- Liquidity, and
- Enforcement.

Portfolio Composition

Sigma uses the proceeds of the debt programs to purchase securities of various currencies, ratings, and tenors. Interest rate and foreign-exchange exposure is managed either through the use of derivative transactions that swap all obligations back to floating-rate exposure, or assets are match funded. All securities and derivative counterparties must be rated at least 'BBB-' at the initiation of the transaction. Asset composition limits specify requirements for minimum and maximum percentage holdings.

Portfolio diversification requirements also must be strictly observed. The security portfolio is subject to sector limits, and each of these sectors is further divided into subgroups. The portfolio also is subject to individual obligor and geographic concentration limits, and maturity and currency constraints. Similarly, derivative counterparties are subject to these limits. Any breach of an exposure limit requires the value of such excess to be treated as an ineligible asset for capital calculations.

Market Risks

The investment management contract contains risk management procedures that are designed to minimize or eliminate interest rate and currency risks with respect to Sigma's portfolio through a combination of match funding and hedging. All such market risk management is carried out in relation to each individual asset. No portfolio hedging is employed.

Swaps, options, and forwards are used across various interest rate and currency bases to convert all assets and liabilities to floating interest rates if not match funded. Market risk sensitivity is tested daily for both interest rate and currency exposures. The impact of a single basis point parallel or incremental shift in the yield curve may not cause more than an 0.05 basis point change in the aggregate market value of the assets and liabilities.

Similarly, a 1% change in the value of any currency relative to all other currencies may not cause more than a 0.5 basis point change in the aggregate market value of the assets and liabilities. If any limit is breached, the investment manager has five business days in which to cure. If it is not cured, an automatic enforcement event is deemed to have occurred.

Leverage and Capital Adequacy

Sigma uses a three-dimensional matrix to determine the amount of capital it must reserve for each security it purchases. The capital charge for each individual asset is based on the security's credit rating, the concentration of the obligor in the portfolio, and the maturity of the security. Sigma arrived at the capital reserve levels by producing a model portfolio and simulating the counterparty/issuer default behavior of that portfolio for a horizon matching that of the life of the securities.

As asset concentrations and maturities were altered, the various outcomes were compared with the capital reserves in the Sigma matrix. In all cases, Sigma had reserved more than the simulations required. To ensure the actual portfolio exhibits similar behavior to that of the simulated portfolio, Sigma has imposed strict limits on the amount of any one particular asset class, sector, geographical region, and so forth that it will purchase (*see Portfolio Composition*). The capital charge is applied to the mark-to-market value of the asset on a daily basis.

Sigma carries out three capital calculations on a daily basis testing for capital adequacy and leverage. If any of these tests are breached and remain uncured for five business days, an automatic enforcement event is deemed to have occurred.

Liquidity

Sigma purchases securities of varying maturities based on their value to the structure. To the extent that the assets and liabilities are not maturity matched, Sigma is exposed to refinancing risk. This risk is managed by limiting the peak amount of funding required in any one-week, two-week, and three-week period. These cash outflows are calculated on a daily, forward-rolling, cumulative basis for each test period and are compared to one-week, two-week, and three-week net cumulative outflow (NCO) limits. The peak outflow for each test period must be within the NCO limits. Liquidity support equal to, or greater than, the three-week limit must be maintained at all times.

Sigma has liquidity support available to it in two forms: committed bank lines from 'A-1+' rated financial institutions, which must, at a minimum, cover the one-week NCO; and specific liquidity eligible assets, which must cover the two-week and three-week NCOs. The specific assets may be highly rated government securities or supranational, financial institution, corporate, and asset-backed securities. These assets are discounted so that their liquidity contribution conservatively reflects their potential value should they have to be sold on short notice to meet a cash requirement. Each day, Sigma must test its peak outflows and liquidity resources against its NCO limits. Any breach that stays uncured for five business days is considered an automatic enforcement event.

Enforcement

Should an enforcement event occur, the security trustee, acting on behalf of the secured creditors, realizes his charge on Sigma's portfolio. The security trustee then reorganizes the assets, the derivatives, and the liabilities into various pools on the basis of maturity. Each pool will contain assets, and derivatives if necessary, whose maturity matches that of the liabilities due in that same year. As the assets mature, the liabilities are repaid. As a result, assets may need to be sold, others of matching maturity purchased, and derivative transactions terminated or recontracted. The credit support for each of these pools remains in a residual pool.

Medium-term noteholders have an option to redeem their notes upon enforcement. If this option is exercised, these liabilities are included in the pool with a maturity of one year or less.

The following events will trigger enforcement :

- Failure to maintain a rating of 'AAA/A-1+',
- Insolvency or winding up of Sigma,
- Failure without cure of the capital adequacy and leverage tests,
- Loss of 30% of capital,

- Failure without cure of the liquidity tests,
- Failure without cure of the interest rate sensitivity tests,
- Failure without cure of the exchange rate sensitivity tests,
- Failure to repay any liquidity provider when due within the applicable grace period,
- Failure to repay any of the noteholders when due within the applicable grace period, and
- Failure to repay any derivative counterparty when due within the applicable grace period.

Surveillance

To ensure that Sigma's portfolio adheres strictly to its operating procedures and limit structure, it has applied two layers of controls for ongoing surveillance. First, Gordian's own control function monitors limit compliance on a daily basis and provides portfolio composition and status reports to Standard & Poor's each week. Second, an externally audited compliance report reviews each week's portfolio activity for compliance with the limit structure then in place for Sigma. The auditor verifies that all weekly reports are accurate representations of Sigma's activity, the results of which are also provided to Standard & Poor's.