

# **GLOBAL RISK MANAGEMENT SECOND QUARTER 2008**

*As of July 21, 2008*

# QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

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## QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

### FIRM OVERVIEW

#### Main trading businesses, products and markets

Lehman Brothers is an innovator in global finance, serving the financial needs of corporations, governments and municipalities, institutional clients and high-net-worth individuals worldwide with business activities organized in three segments – Capital Markets, Investment Banking and Investment Management. We provide a full array of services in equity and fixed income sales, trading and research, investment banking, asset management, private investment management and private equity. Our worldwide headquarters in New York and regional headquarters in London and Tokyo are complemented by a network of offices in North America, Europe, the Middle East, Latin America and the Asia Pacific region.

Our Capital Markets segment is divided into two components:

Fixed Income – We make markets in and trade interest rate and credit products, mortgage-related securities, loan products, municipal and public sector instruments, currencies and commodities. We also originate mortgages and we structure and enter into a variety of derivative transactions. We provide research covering economic, quantitative, strategic, credit, relative value, and index and portfolio analyses. Additionally, we provide financing, advice and servicing activities to the hedge fund community, known as prime brokerage services.

Equities - We make markets in and trade equities and equity-related products and enter into a variety of derivative transactions. We also provide equity-related research coverage as well as execution and clearing activities for clients. Through our capital markets prime services, we provide financing, advice and servicing activities to the hedge fund community (prime brokerage) as well as provide execution and clearing activities for clients. We also engage in proprietary trading activities as well as principal investing in real estate and private equity.

We take an integrated approach to client coverage, organizing bankers into industry, product and geographic groups within our Investment Banking segment. Business activities provided to corporations and governments worldwide can be separated into: Global Finance – We serve our clients' capital raising needs through underwriting, private placements, leveraged finance and other activities associated with debt and equity products.

Advisory Services – We provide business advisory assignments with respect to mergers and acquisitions, divestitures, restructurings, and other corporate activities.

The Investment Management business segment consists of:

Asset Management – We provide customized investment management services for high net worth clients, mutual funds and other small and middle market institutional investors. Asset Management also serves as general partner for private equity and other alternative investment partnerships and has minority stake investments in certain alternative investment managers.

Private Investment Management – We provide investment, wealth advisory and capital markets execution services to high net worth and middle market institutional clients.

## QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

### Summary of Results

The Company reported a net loss for the second quarter of 2008 of \$2.8 billion, or a \$5.14 loss per common share (diluted), compared with net earnings for the second quarter of 2007 of \$1.3 billion, or \$2.21 per common share (diluted). Revenues, net of interest expense (“net revenues”) for the second quarter of 2008 were negative \$0.7 billion, compared to \$5.5 billion in the prior-year period. The pre-tax loss for the second quarter of 2008 was \$4.1 billion, compared with pre-tax earnings of \$1.9 billion for the prior-year period.

For the six months ended May 31, 2008, the Company incurred a net loss of \$2.3 billion, or a \$4.33 loss per common share (diluted), compared with net earnings for the six months ended May 31, 2007 of \$2.4 billion, or a \$4.17 per common share (diluted). Net revenues for the six months ended May 31, 2008 were \$2.8 billion, compared to \$10.6 billion in the prior-year six month period. The pre-tax loss for the six months ended May 31, 2008 was \$3.4 billion, compared with pre-tax earnings of \$3.6 billion in the prior-year six month period.

The losses in the Company’s net revenues and earnings during the second quarter of 2008 were driven by losses within the Capital Markets business segment which more than offset net revenues from the Investment Banking and Investment Management segments. Net revenues were significantly impacted by challenging market conditions that continued to impact the Company’s valuation of certain financial instruments, primarily residential and commercial mortgage-related assets and related economic hedges to those asset classes. The Company also incurred losses on principal investing activities, economic hedging activities and defensive rates and credit trading positions. These losses were partially offset by gains on certain of the Company’s debt liabilities. The impact of these events is reflected within the Company’s Capital Markets business segment and principally within the Fixed Income component.

The Company’s Capital Markets business segment reported negative net revenues for the three and six months ended May 31, 2008 of negative \$2.4 billion and negative \$0.7 billion, respectively, compared to net revenue of \$3.6 billion and \$7.1 billion for the three and six months ended May 31, 2007, respectively. Capital Markets—Fixed Income net revenues for the three and six months ended May 31, 2008 were negative \$3.0 billion and negative \$2.7 billion, respectively, compared to \$1.9 billion and \$4.1 billion in the corresponding 2007 periods. For the three and six months ended May 31, 2008, Capital Markets—Equities reported net revenues of \$0.6 billion and \$2.0 billion respectively, a decrease of 64% and 33% from \$1.7 billion and \$3.0 billion for the three and six months ended May 31, 2007, respectively. Investment Banking segment net revenues were \$0.9 billion and \$1.7 billion in the 2008 three and six months, respectively, down 25% and 14% from the corresponding 2007 periods. Investment Management segment net revenues increased 10% and 24% to \$0.8 billion and \$1.8 billion in the 2008 three and six months, respectively, compared to the corresponding 2007 periods, reflecting increasing net revenues in both Asset Management and Private Investment Management. Assets under management (“AUM”) at May 31, 2008 were \$277 billion, an increase of 5% from levels at May 31, 2007 and a 2% decrease from levels at November 30, 2007.

During the second quarter of 2008, the Company reduced assets, including inventory positions related to residential mortgages, commercial mortgage and real estate-related investments, and acquisition finance facilities. At May 31, 2008, the Company’s total assets were approximately \$639.4 billion, representing a 19% decrease, or a reduction of \$146.6 billion, from total asset levels of \$786.0 billion at February 29, 2008. May 31, 2008 total asset balances were 7% lower, or \$51.6 billion less than total asset levels reported at November 30, 2007. The combined

## **QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION**

effect of an equity raise as well as the reduction of assets in the second quarter of 2008 resulted in a decrease in the Company's gross and net leverage ratios to 24.34x and 12.06x at May 31, 2008, respectively, from 30.73x and 16.14x at November 30, 2007.

## QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

### Business Environment

As an investment banking, securities and investment management firm, the Company's businesses are materially affected by conditions in the global financial markets and worldwide economic conditions. A favorable business environment is generally characterized by, among other factors, high global gross domestic product growth, stable geopolitical conditions, transparent and efficient capital markets, liquid markets with active investors, low inflation, high business and consumer confidence and strong business earnings. These factors provide a positive climate for investment banking activities, for many of the Company's capital markets trading businesses and for wealth creation, which contributes to growth in the Company's asset management business

During the second quarter of 2008, the Company operated in an unfavorable global business environment. Conditions were characterized by a continued lack of liquidity in the credit markets, significantly depressed volumes in most equity markets, a widening in certain fixed income credit spreads compared to the end of the 2007 fiscal year and declining asset values. Growth in major economies slowed as a result of declining business and consumer confidence. Global inflation rose, amid slowing economic growth. Commodity prices rose significantly during the quarter, with oil and gold reaching record levels, raising costs of industrial production. Consumer spending was challenged by a combination of lower wealth from declining housing values, higher commodity prices impacting levels of disposable income, and falling private sector employment growth. Central banks' concerns regarding exacerbating inflationary conditions limited their ability to effect monetary policies intended to provide liquidity within the markets. The combination of low levels of liquidity and financial companies de-leveraging their balance sheets resulted in downward pressure on financial asset prices. These global economic conditions, in aggregate, depressed both the valuations of the Company's inventory positions as well as transactional volumes and market activity levels in which the Company's Capital Markets and Investment Banking business segments operated during the fiscal quarter.

Based upon estimates by the Company's economists, global economic growth was approximately 2.5% at the end of the second quarter of 2008 compared to 3.5% in fiscal year 2007. The decrease was driven by a slowdown in the Americas and Eurozone. The Company anticipates global economic growth in subsequent fiscal quarters to be less than levels in the second fiscal quarter of 2008. The magnitude of the growth deceleration is largely dependent on how extended and severe the credit dislocation continues to be, results from fiscal and monetary policy actions, accessibility of new sources of liquidity and oil prices leveling or continuing to increase.

At the end of the Company's 2008 second quarter, the global fixed income environment was characterized by tighter spreads compared to the first quarter of 2008. However, spreads were still at wider levels than at the end of the 2007 fiscal year. Global high yield and high grade spread indices tightened 78 basis points and 9 basis points, respectively, at the end of the second quarter compared to the end of the first quarter of 2008 and widened 81 and 43 basis points, respectively, compared to the end of the 2007 fiscal year. At the end of the second quarter of 2008, global equity markets modestly increased from levels at the end of the first quarter of 2008 but were down 6.6% at the end of the second quarter compared to the end of fiscal year 2007. Global corporate activity levels in completed

## QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

M&A transactions for the 2008 second quarter were lower, compared to levels at the end of the first quarter of 2008 and those at the end of the 2007 fiscal year. Equity underwriting levels for the 2008 second quarter were down 25% from the 2007 fourth quarter and fixed income underwriting levels for the 2008 second quarter increased 7% between the benchmark periods.

Investment banking activity for the remaining 2008 calendar year is expected to be modest. Global public issuance markets have contracted from 2007 levels. The Company believes full-year 2008 M&A volumes will decline compared to full-year 2007 levels. The anticipated decrease in 2008 investment banking activities is the result of both comparatively lower financial sponsor activity as well as slower economic growth. This is expected to be offset in part by: (i) the weak U.S. dollar attracting cross-border transactions; (ii) companies focusing on core businesses and divesting non-core functions; (iii) selective financing of strategic deals; and (iv) equity or hybrid equity offerings.

Real gross domestic product growth ("GDP") in the U.S. economy, as forecasted by the Company's economists, expanded by an estimated 1.0% for the 2008 second quarter, compared to GDP growth of 1.0% in the first quarter. This forecast is predicated upon declining consumer spending resulting from increasing unemployment levels and declining wealth measures. Expected relief on consumer spending as a result of fiscal stimulus packages may be annulled from rising commodity prices, particularly oil and grains. Continued slowdowns in home sales and commercial real estate investments suggest inventories may continue to rise and increase levels of construction and price cuts. Growth in industrial production slowed from 2007 levels, reflecting reduced growth in domestic consumer demand, partially offset by demand for U.S. exports. Market indications suggesting declines in business and consumer confidences continue to be present as they were in the prior quarter. In March 2008, the Federal Reserve Bank of New York created the Primary Dealer Credit Facility which was designed to address elevated pressures in short-term funding markets. The U.S. Federal Reserve Board reduced rates twice in the fiscal quarter and is anticipated to hold rates steady over the next several meetings. The Company's economists expect the terminal funds rate will be within the range of 1.50% and 2.00% by the end of the fourth quarter due to rising energy costs, tightening credit conditions, a continued drop in home prices and weak job markets. Long-term bond yields increased, with the 10-year Treasury note yield ending the fiscal quarter at 4.10%, up approximately 70 basis points from the first quarter of 2008. At the end of the second fiscal quarter, the S&P 500 Index, Dow Jones Industrial Average and NASDAQ composites decreased 8.5%, 7.3%, and 3.1%, respectively, from 2007 second quarter levels.

In Eurozone countries and the U.K., economic growth slowed during the second quarter of the 2008 fiscal year as the disruption in the global financial markets and higher oil prices affected spending and consumer confidence. Business activity reflected a decline from the benchmark period as a result of tighter credit conditions and an overall decrease in consumption across all sectors. Labor markets appeared unaffected as unemployment levels modestly declined over the quarter. Measures of core inflation increased during the 2008 second quarter mainly due to elevated pressure in the energy and food markets. The European Central Bank held rates level during the fiscal quarter and the Company's economists expect a rate increase to occur in the third quarter of the 2008 fiscal year. In April 2008, the Bank of England eased rates and a further rate reduction is anticipated during the remaining quarters of the fiscal year. The Bund and Gilts' 10-year yields were

## QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

4.4% and 4.8%, respectively, at the 2008 second quarter-end compared to 3.9% and 4.3%, respectively, at the 2008 first quarter-end. Equity volatility for continental Europe and the U.K. was up compared to levels at the end of the 2008 first quarter. The Company believes that the generally tighter bank and credit conditions, lower forecasted global growth and a stronger Euro will combine to slow 2008 Eurozone and U.K. growth.

In Japan, real gross domestic product growth decelerated, unemployment levels modestly decreased and measures of inflation spiked slightly during the 2008 quarter due to increased energy prices. While increasing food prices are causing slight inflation, the rise is expected to taper by the end of the 2008 fiscal year. The Company expects energy prices to have a significant impact on Japan's economic performance from the second half of the 2008 fiscal year and beyond. The Bank of Japan held its rates steady during the 2008 quarter and is anticipated to continue to do so into the 2008 fiscal year. The yield on the 10-year Japanese government bond increased 25 basis points from the first quarter of calendar year 2008 to 1.6% at the end of the second quarter of calendar year 2008. The Nikkei 225 equity index gained 10.6% over the course of April to mark the largest percentage increase since July 1995. Residential and non-residential construction spending decreased, and the recovery in the corporate sector during the period has yet to have an effect on wages and consumption, thus increasing the risk of a possible recession. The Company expects three trends to emerge in China's economy in 2008: (i) GDP growth to fall on an annual basis; (ii) inflation to increase over the long-term; and (iii) the central bank to focus more on slowing growth than rising inflation. The Company expects certain larger emerging markets, Brazil, Russia and Mexico, for example, to achieve solid growth during the 2008 calendar year. While Latin America is expected to feel the effects from a decelerating U.S. economy, the Company believes the impact should be less severe than historically as a result of the region's establishment of new trading relationships with other parts of the world. During 2008, the Company expects India to continue GDP growth absent a significant contraction in the U.S. economy. Any effect from weaker world economic growth should be offset by continued investment and spending within India.

## QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

### FIRM CONTROL STRUCTURE

#### Risk Management

Many parts of the Firm are all involved in a tightly interwoven control environment for Risk. They include Risk Management, Finance, Operations, Compliance, Audit, Trading Management and Capital Markets senior management. The support functions are high quality and enjoy very strong senior management support and status within the Firm, as their role in keeping the Firm safe is recognized and appreciated.

The Firm has established a rigorous independent internal control environment, which ensures the reliability of the mark-to-market and risk management processes.

This multi-tier framework includes:

- Capital Markets Senior Management - Review of P&L and key risk positions on a daily basis;
- Middle Office Operations Function - Calculation of daily P&L on a position by position level basis;
- Risk Management Division - Calculation of Value at Risk (“VaR”) on a daily basis, and analytical review of VaR versus actual daily P&L;
- Finance via Product Controllers – Analysis of daily P&L and positions, pricing verification, and review of new transactions;
- Product Controllers review pricing on a daily basis, as an extension of the detailed P&L review process they perform daily. They also perform a formal monthly price verification procedure for their respective businesses.

## QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

### Committee Structures

The Firm has a robust Committee structure consisting of Management Oversight, Transaction Approval and Divisional and Business Level Committees to oversee risk taking activities and to ensure that controls are appropriately administered and reviewed.

The key committees include:

#### Management Oversight Committees

- Executive Committee (keyword: EXECC)
- Management Committee (keyword: MGMTTC)
- Capital Markets Committee (keyword: CAPMC)
- Conflicts Task Force (keyword: CTF)
- Finance Committee (keyword: FINC)
- Operating Exposures Committee (keyword: OEC)
- Risk Committee (keyword: RISKC)

#### Transaction Approval Committees

- Bridge Loan Committee (keyword: BLC)
- Commitment Committee (keyword: commitmentcommittee or COMC)
- Complex Structured Finance Transactions Committee (keyword: CSFTC)
- Fairness Opinion Committee (keyword: FOC)
- IMD Product Review Committee (keyword: IMDPRC)
- Investment Committee (keyword: IC)
- New Products Committee (keyword: NPC)
- Strategic Acquisition Review Committee (keyword: SARC)

#### Divisional & Business Level Committees

- Complex Derivative Transaction Review Committee (keyword: CDTRC)
- Credit Risk Management Committee (keyword: CRMC)
- Disclosure Committee (keyword: DISC)
- Equity Commitment Committee (keyword: ECC)
- High Grade Commitment Committee (keyword: HGCC)
- High Yield Commitment Committee (keyword: HYCC)
- High Yield New Business Committee (keyword: HYNBC)
- Loan Participation Committee (keyword: LPC)
- Market Risk Control Committee (Keyword: MRCC)
- MCD New Products Committee (keyword: MCDNPC)
- Model Control Committee (keyword: MCC)
- Structured Finance Committee (keyword: SFC)
- Tax Oversight Committee (keyword: TOCM)
- Valuation Committees (keyword: VALC)

## **QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION**

### **GLOBAL RISK MANAGEMENT DIVISION**

#### **Overview**

The Global Risk Management Division (“GRMD”) is an independent function under the leadership of the Global Head of Risk Management.

While GRMD partners and works proactively with the businesses before transactions are done in order to determine the least risky deal structure it is independent of the trading areas. The Division consists of seven global functions (market risk management, credit risk management, risk information and analysis,; sovereign risk management; quantitative risk management; risk governance, including operational risk management, IMD risk management) which have been integrated allowing us to leverage our people, our analytics and information flow. GRMD has staff in each of our trading centers, New York, London and Tokyo with additional personnel in key sales regional offices including Hong Kong, Singapore, Korea, Australia, Brazil and India.

## QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

### **Mission Statement**

The Division's mission is to protect the franchise by proactively identifying, evaluating, monitoring and controlling Firm market, credit and operational risks. The Division achieves this objective through the development and implementation of a transparent and robust integrated risk management framework and analytics. In collaboration with our business and corporate colleagues, the Division plays an active control and advisory role in the areas of efficient capital allocation, risk diversification and risk mitigation, to optimize financial returns for our shareholders. Risk Management provides Senior Management, Regulators, the Board of Directors and Shareholders with an independent view of the Firm's risk. The Division leverages industry-leading qualitative approaches to risk evaluation and quantitative approaches to risk measurement in a culture of discipline, teamwork, and innovation.

## QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

### GRMD Functions

**Market Risk Management** is responsible for:

- Ensuring all market risks are identified, understood, measured, monitored and captured by an appropriate metric
- Active risk exposure consulting with businesses
- Active consulting role in risk capital allocation / risk-adjusted performance assessment
- Assisting senior management in the dialogue with rating agencies and regulatory bodies
- Administering limits and management action triggers
- Monitoring and reporting of the market risk of trading exposures
- Aggregating and analyzing market risk (regionally and globally)
- Communicating large or unusual risk as appropriate
- Developing market risk measurement methodologies in conjunction with Quantitative Risk Management
  - VaR
  - VaR Back Testing
  - Scenario Analysis
  - Event Risk

## QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

**Credit Risk Management** is responsible for:

- Counterparty credit analysis and due diligence
- Assigning and maintaining Internal Risk Ratings (ICR)
- Establishing Credit Limits for each counterparty by family and legal entity, as well as at the individual product levels
- Establishing Country Risk limits
- Preparing Credit Reviews on counterparties which assess the counterparty's strengths and weaknesses, supporting the ICR recommendation and recommended Credit Limits
- Monitoring Counterparty credit exposures on a Current (CCE) and Potential basis (MPE) including usage of Credit Limits
- Monitoring the Credit Portfolio on an ongoing basis which includes
  - Country updates
  - Industry reviews
  - Ongoing review of counterparties
  - Monthly Hedge Fund performance reviews
  - Revising and updating risk ratings as appropriate
  - Understanding portfolio concentrations

## QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

**Quantitative Risk Management** is responsible for:

- Developing, implementing and maintaining the risk methodologies and systems used to measure market, credit and operational risks, as well as validating the pricing and valuation models used by the business units of the Firm
- Subgroups
  - Market Risk Analytics – Develops the quantitative methodologies to measure market risk (VaR, Risk Appetite); provides analyses and consultation on market risk quantification
  - Credit Risk Analytics – Develops various quantitative methodologies used to measure counterparty credit risk (CCE, EPE, MPE); generates exposure, country risk and ad hoc credit risk reports for senior management; provides transaction level analyses and consultation on credit risk quantification
  - Operational Risk Analytics – Develops the quantitative methodologies used to measure operational risk; provides analyses and consultation on operational risk quantification
  - Model Validation – Develops and implements the validation standards for the pricing models used in Firm; collects and archives documentation on the pricing models; reviews and approves the pricing models; participates in Model Review Committees (Fixed Income and Equities) with business units, Quantitative Research, Product Control and Technology

## QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

**Sovereign Risk Management** is responsible for:

- Establishing a framework to assess political, economic, and social conditions and events in a foreign country that might adversely affect the Firm's interests or reputation
- Monitoring and reporting on crisis events and substantial market shocks in emerging market and selected developed market countries and regions
- Establish country risk appetite limits and internal country ratings
- Advising senior management and business heads on emerging market issues
- Aggregating and analyzing country risk exposures (regionally and globally)
- Assisting Market and Credit Risk Management with the analysis of major market fluctuations resulting from: default; currency inconvertibility and transfer risk; currency devaluation; and expropriation of assets

## QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

**Risk Information and Analysis** is responsible for:

- Data Integrity
  - data management and reconciliation of position, indicative and historical time-series data for market and counterparty credit risk
- Credit Risk Control
  - design and use of the Internal Ratings System
  - administration of the Credit Risk Management Committee
  - generation and dissemination of governance related management reporting
- Portfolio Risk Management
  - aggregate Firm-wide and business level reporting of Risk Equity, Risk Appetite, VaR, CCE, MPE, CVA and other risk sensitivities
  - VaR back-testing, limit maintenance and monitoring and other control issues
  - Valuation Analysis
- Risk Policy and Procedures
  - development, implementation and maintenance of risk documents

## QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

**Risk Governance** is responsible for:

- Management of our Regulatory and Rating Agency information and processes; and
- Leadership of various Firm-wide and divisional initiatives
- Coordinating with the other Risk Management Executive Committee members on risk information reporting and improvements and efficiencies
- Firm-wide Operational Risk Management;
  - Ensuring all operational risks are identified, understood, measured and monitored
  - Increasing awareness of operational risk throughout the Firm
  - Active risk exposure consulting with businesses and support functions
  - Resolution of operational risk related issues
  - Assisting senior management in the dialogue with internal and external bodies

## QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

**IMD (Investment Management Division) Risk Management** is responsible for:

- Ensuring that the market risk, credit risk and operational risk within the IMD Division is identified, understood, measured and monitored.
- Ensuring that the Firm's global risk frameworks are instituted within the IMD Division.
- Assisting in developing the processes to monitor the alignment of client objectives and expectations with the Firm's investment processes, specifically:
  - Processes to identify and monitor risk exposures within and across portfolios to assist in the production of high-quality portfolio returns which result from portfolio managers' intended risk strategies and are not driven by unintentional sources of risk
  - Processes to ensure the management of all portfolios within well-documented client risk parameters and according to specified client expectations
  - Processes to monitor and mitigate any unusual risk situations (market, credit, operational or reputational) affecting either client portfolios or the investment management business as a whole

## **QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION**

### **RISK MEASUREMENT**

#### **Overview**

At the core of our risk management framework are two comprehensive risk measurement models:

- Risk Appetite (95% confidence) integrating market, event and counterparty risk; and
- Risk Equity (99.5% confidence) encompassing market, event, counterparty, operating and legal risk as well as regulatory capital requirements

## QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

### Risk Appetite

The risk tolerance of the Firm is primarily expressed through a framework called Risk Appetite which is grounded in our financial targets. The Firm's Risk Committee serves as a primary vehicle for establishing the Firm's overall Risk Appetite.

The Risk Appetite represents the amount of money that the Firm is "prepared to lose" over one year due to market, event and counterparty credit risk. Risk appetite is measured at a 95% level of confidence. The risk appetite framework aims at balancing risk and return. We set risk at a level which ensures that we can achieve minimum financial targets, as well as generate acceptable cross cycle returns.

We start with a revenue budget which assumes a "slow" market environment. We model a low case revenue scenario for all of our client/customer flow businesses. This "post slowdown" revenue represents, conceptually, the minimum revenue level we anticipate from our franchise before the impact of potential losses from risk taking. Then we subject ourselves to two constraints: one internal and one external. Internally, we want to make sure we are compensation adequate. We want to set enough money aside to pay for our employees. We do not want to be hiring and firing but instead, we want to protect the franchise for the long-term. Externally, we want to ensure we have enough revenue to produce minimally acceptable cross-cycle returns on tangible equity.

Risk is allocated across different businesses as a function of several measures including return on equity, EVA, leverage and balance sheet constraints, return on assets and taking into account the value of a particular business to the overall franchise of the Firm.

In order to allocate the Firm's risk appetite across the divisions we take into consideration:

- Budgeted revenue, net income and return on tangible equity – we aim to allocate risk appetite consistent with the performance expectations of each business and their risk/return profiles;
- Franchise considerations/past usage – we recognize that certain minimum risk usage is needed to support the franchise. This includes allocating sufficient risk appetite to potentially low ROTE businesses which are important to the overall product suite we deliver to clients;
- Outlook for businesses – adjustments are made to take into consideration planned changes in the business mix.

Diversification comes from businesses functioning as part of a larger unit: trading desks are part of regional businesses; regional businesses are part of global businesses; global businesses are part of divisions; and divisions are part of the Firm. Diversification also comes from our exposure across different risk types (market, counterparty credit, and event). To the extent there is a meaningful change in the business mix, there could be an increase or decrease in our risk usage.

## QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

### Risk Equity

We use our Risk Equity Model to determine the equity to be allocated to each of our businesses. The components of our Risk Equity Model are:

- Economic equity
  - Market risk
  - Event risk
  - Counterparty credit risk
- Regulatory-adjusted economic equity
- Operating risk
- Legal risk
- Other corporate asset charges

Those components are combined in a single number which we refer to as Risk Equity. Below, a description of each component:

- Market risk
  - Measures the potential mark to market loss on positions from adverse moves in all risk factors. It is computed by historical simulation (similarly to daily VaR) but at a higher confidence level of 99.5% and one-year holding period.
- Event risk
  - Measure the potential loss beyond those measured in market risk such as losses associated with a downgrade for high quality bonds, defaults of the high-yield bonds and loans and loss on real-estate-backed loans, etc.
- Counterparty credit risk
  - Measures the potential losses across all of the Firm's forward settlement, financing and derivative transactions, due to non-performance of our trading counterparties.
- Regulatory capital for regulated entities
  - Regulated legal entities are required to maintain a minimum level of equity capital. In determining the amount of capital utilized by a business operating in a regulated entity, the after tax economic risk capital is compared to the regulatory equity and the greater of the two is allocated to the business.
- Operating risk
  - Measures business risk.
- Legal risk
  - Measures the potential loss arising from litigation with investors, customers and employees, net of applicable insurance recoveries.
- Other corporate assets
  - The equity associated with other assets in the Firm, for example buildings, are allocated to each business as part of the operating component of equity

## QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

### VaR (Market Risk)

Risk appetite is our principal risk metric, which we use on a daily basis to measure, report and control our risk on a statistical basis which express the losses we might expect to experience with a given degree of confidence over a one year horizon. Our VaR model, which is the market risk component of risk appetite, is controlled by Risk Management.

VaR is an estimate of the potential decline in the value of the Firm's trading positions due to normal market movements over a one-day holding horizon at a 95% confidence level. The VaR model accounts for general and issuer-specific risk. It also accounts for the non-linear dependency of certain positions with respect to the underlying risk drivers by actual portfolio revaluation. We adopt a historical simulation approach to VaR calculation, utilizing the most recent four years of market data across all general market risk factors. The correlations amongst general market risk factors are implicitly determined by the actual historical time series. The data are weighted to emphasize the most recent period (the Firm currently uses an exponential decay factor of approximately 10% per month). Individual stock price series are used for the simulation of equities risk wherever those series are available. When there are not enough data on a recently issued stock (e.g. recent IPOs), the Firm employs an interim model using a proxy for the individual stock return: either the closest stock index (when there are fewer than 60 data points) or linear regression model based on the closest index (when there are 60 data points or more). For debt-related instruments, general risk is represented by bond indices constructed for rating-maturity-industry buckets. The specific risk component is simulated based on the characteristics of the empirical distribution of the individual bond residuals with respect to each bucket. All simulated specific risks are assumed to be independent of each other as well as general market risk factors in the VaR model. We have a high degree of granularity in our estimation of risk evidenced by the fact that we use over 20,000 time series. The VaR model, as well as most pricing models (which feed risk factor sensitivities into the VaR model), has been developed internally.

## QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

### Event Risk

Event risk measures potential trading losses associated with large, gap-like market moves or stress market events that usually cannot be adequately captured by VaR model and historical time series of limited length. The following examples illustrate the type of losses covered under the event risk metric:

- Downgrade for high grade loans, bonds and convertibles
- Defaults for the high yield loans, bonds and convertibles
- Defaults for sub-prime mortgage loans
- Property value losses on real estate
- Dividend yield assumptions for equity derivatives
- Gap risk for fund derivatives

## QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

### Counterparty Credit Risk

Counterparty credit risk measures the potential loss to the Firm due to non-performance of our counterparties on forward settlements, financing and OTC derivative transactions.

A multitude of risk measures are calculated in the counter party risk arena.

Current Credit Exposure (CCE) to counter-party is our potential credit loss arising from its immediate default or non-performance. It equates to the positive mark-to-market value of the trade portfolio.

Maximum Potential Exposure (MPE) is a measure of the stressed value of potential credit losses if counter-party defaults sometime in the future. It is calculated over the life of the portfolio of trades, and identified at a tail percentile (95<sup>th</sup>) amongst all possible scenarios.

The average expected magnitude of potential credit exposures is designated as Expected Potential Exposures (EPE). This quantity is also calculated over the life of the trade portfolio as an average over all possible future scenarios. EPE is commonly used as input to the calculation of other key counterparty credit risk measures such as the credit component of Regulatory Capital or the Credit Valuation Adjustments (CVA).

At the aggregate level, counterparty credit risk contribution to the Risk Appetite is estimated by constructing a portfolio loss distribution across all counterparties, taking into account both the magnitude of each credit exposure, the probabilities of each counterparty defaulting, as well as the estimated recovery value to each counterparty claim.

The Firm adopts a Monte Carlo simulation approach to counterparty credit risk quantification for OTC derivative and long-settlement transactions, by generating future market scenarios with multiple risk drivers and subsequently revaluating the trade portfolios under each possible market scenarios. For financing trades with daily mark-to-market, a direct historical simulation approach is used.

All credit calculations are subject to the proper application of legal netting rules as well as margin and pledge provisions. Exposures are typically aggregated at both the legal entity and the product level.

## QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

### Stress Testing and Scenario Analysis

Stress tests and scenario analyses are performed regularly to evaluate the potential P&L impact on the Firm's portfolio of abnormal yet plausible market conditions. We employ two types of stress tests:

#### Firm-wide Scenario Analysis

We will subject the Firm's overall portfolio to a number of coherent macro-economic scenarios in which pertinent market factors are shocked by extreme, although plausible amounts. The scenarios which are relevant at any particular time will be driven by the nature of our exposures. To determine the plausible shock-factors to apply to our portfolios we will draw upon our experience of historic events. Although stress events, by their nature, are relatively rare, and history is not bound to repeat itself exactly, we use examples of historical events as a means of judging the magnitudes of plausible shock-factors and the extent of plausible correlation changes. Correlation changes during extreme market events may be very significant, which implies that stress test results may not be deduced merely by taking multiples of VaR.

The portfolio of scenarios we apply will evolve over time as we continually strive to establish scenarios that seek out the vulnerabilities in our portfolios. Applying shock factors derived from historical events to our exposures of today will not be adequate, because it will be the case that the market environment today, in terms of the levels of interest rates, the shapes of yield curves and volatility surfaces, etc. may be very different to those extant at the time of the historical event. Likewise, there may have been paradigm shifts since the historical event occurred, such as the development of new instruments, the lengthening of tenors, the advent of new currencies such as the Euro, or the subsequent breaking of currency pegs long after the event, which may mean that blindly applying the shocks which occurred during the historical event to the positions today may well result in implausible market effects.

#### Localized Stress Testing

Scenarios designed to explore the specific vulnerabilities of each line of business and region, and of specific legal entities. Such stress testing will include examination of our exposures to idiosyncratic events, such as changes to tax codes, which may give rise to significant valuation changes for our municipals business, or the dividend assumptions used in our equity derivatives valuation models; or changes to the implicit government guarantee backing Agencies positions, etc.

A second kind of localized stress scenario which we intend to carry out is what we refer to as a "Dealer-Exit" scenario. A number of our businesses trade highly structured and complex products in which we, along with other competing dealers, tend to warehouse exotic risks which we may not easily trade out of. As a result of these trades the dealer community tends to warehouse one side of these transactions, whilst the end-user clients tend to hold the other side. As a consequence, the forced exit from the market of one of our competitors may give rise to large losses on a mark-to-market basis.

We subject both our trading and counterparty portfolio to stress tests.

## QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

### LIMIT STRUCTURE

#### Overview

Fundamental to risk management is the establishment and maintenance of a sound system of integrated risk limits to control the range of risks inherent in the Firm's activities. The overall philosophy of the Firm is that we have a zero tolerance level for ignoring limits and internal processes. Disciplinary actions for limit breaches include compensation adjustment or terminations.

The foundation of our limit framework is an aggregate risk appetite limit at the Firm-wide level, which is then cascaded down to the Divisions and then to the businesses both globally and regionally. These risk appetite limits are supplemented by VaR, counterparty credit, single transaction, country and concentration limits.

## QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

### VaR Limits

VaR limits pertain to the Firm's trading and investing activities. VaR limits are set at a Firm-wide level, and cascaded down to the Divisions and Lines of Business within each Division on a global and regional basis. In addition, while the Firm does not manage risk on a legal entity basis, limits are nonetheless applied to the Firm's regulated legal entities as required.

The Firm-wide Divisional VaR limits and the region-wide cross-divisional limits for Europe and Asia are established by the Global Head of Risk Management and the Division/Region Head. Limits set within a Division, which may be either regional or for a global Line of Business, depending upon the business organization, are set by Market Risk Management in conjunction with the Division Heads.

Business Managers have the authority to set additional limits, including individual trader limits so long as the Line of Business/Region stays within its limit overall.

When a Firm-wide Divisional or Region-wide cross divisional limit is approached, or seems likely to be exceeded, the issue is escalated both within Market Risk Management and the Division/Regional Head, as appropriate. The Division/Regional Head and Global Head of Risk Management are then able to decide the action to be taken.

One of three courses may be taken:

- Allow the excess to remain for an agreed period of time in support of the specific trading strategy: this action may occur in cases where the excess was anticipated and discussed with Market Risk Management or where the excess is in support of a customer facilitation trade and there is unused risk capacity at the Firm-wide level;
- Agree, in some circumstances, to revise the limits if, for example, there has been a change in the business which warrants such a change; or
- The decision may be taken to reduce the risk profile back within the limit.

Likewise, when an intra-Division or business line limit is approached or breached, the Division Head determines the appropriate course of action, taking into account the advice of Market Risk Management. Market Risk Managers are responsible to report all such limit excesses and any discussions with the trader or business unit manager regarding them to his/her manager in Market Risk Management, who in turn will alert the Global Head of Risk Management, and to the Division head. Provided that the limit for the Division has not been breached, the Division head may re-allocate intra-Divisional limits, subject to the advice of Market Risk Management. In addition, the Global Head of Risk Management is empowered to grant a temporary waiver of an intra-Divisional limit excess. If a temporary waiver is agreed, this becomes the limit used for the duration of the waiver. At the end of the waiver period the limit will revert to the previous level.

## QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

In circumstances where excesses are occurring frequently, Market Risk Management will bring this to the attention of the Global Head of Risk Management. This may result in:

- Action to bring risk below limit;
- An ad-hoc meeting to review the cause of the limit breaches;
- A review of the risk measurement technique;
- An adjustment in the business's allocated risk limits.

## QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

### Counterparty Credit Limits

Counterparty Credit Limits are set for each counterparty group and legal entity based on our internal risk ratings. Credit exposure is aggregated by legal entities across the Firm and netted by product where enforceable netting agreements exist. No diversification benefit is given to any counterparty across products. The largest counterparties by industry, region and product are reviewed on a quarterly basis. All counterparties are formally reviewed on a regular basis – at least annually for BBB+ or weaker counterparties.

Within this framework, limits by product and tenor are established for each legal entity within a group. Limits are set based on our potential risk exposure for a product

- Money lines are established with the large banks for liquidity management.
- Exposures for traded products are measured primarily on an MPE (Maximum Potential Exposure) basis, taking into account netting and collateral where available.
- Settlement limits are set where we, due to market convention, have free delivery (FX).

Credit also has responsibility for portfolio management of counterparty credit risks. This includes monitoring and reporting large exposures (current credit exposure and maximum potential exposure), managing concentrations across countries, industries and products, ensuring risk rating are current, asset quality portfolio trend analysis.

## QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

### Single Transaction Limit

The Single Transaction Limit framework limits the size of single transactions even if a transaction can be accommodated within the risk appetite limits. We want to limit the maximum loss we could incur to any one name in order to avoid negative publicity and incur decreased confidence in the Firm's risk controls. The Commitments Committee has the authority to approve transactions within these limits. Executive Committee approval is required in rare circumstances where transactions could exceed these limits.

## QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

### Country Limit

Country Limits are set on a country basis for non-G10 countries. All countries are tiered according to

- political and social stability
- macro fundamentals/creditworthiness
- size and liquidity of markets

Limits are set on an Estimated Loss Potential basis. This process limits losses arising from a crisis in a country or a region and encourages prudent risk taking.

## QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

### Concentration Limits

Concentration Limits are set on:

- asset classes
- industry sector
- credit sector
- underlying name

## QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

### OTHER

#### **Main Financial and Non Financial Risks in Trading Book**

The Firm's main financial market risks generically are due to changes in the level, shape and slope of the yield curve; changes in basis (cash/futures; on-the-run; off-the-run MBS; OAS; basis); credit spreads; prepayment risk; FX risk; stock price movements; volatility. The main credit risks include spreads widening; downgrades; defaults. The top non-financial risks include legal enforceability on netting and collateral and reputational risks.

Other non-financial or operational risks in the trading books can arise from a variety of different sources. Operational risks in the trading book can arise from items associated with trade execution and delivery such as a miscommunication or from a data entry or data maintenance error. In addition, operational losses can arise in the natural course of business, when a deadline is missed (e.g., delivery fails).

There are also operational risks in the trading books which arise through interaction with counterparties around documentation execution and documentation monitoring. Counterparties may not always return signed and executed documents in a timely manner. For these reasons, Lehman Brothers has a dedicated staff in the Transactions Management Group (TMG) whose responsibilities include Master Agreement preparation, negotiation, and execution.

In addition, collateral management associated with the terms of these various agreements that have been executed, can present the Firm with other operational risks. These collateral management risks are aggressively managed by the various product margin groups. For example, we must closely monitor agreement terms such as minimum transfer amounts, thresholds, and cure periods to ensure that margin calls are made in the correct amount and in a timely fashion.

Another source of operational risk in the trading book can arise if there is a model error or an inaccurate price used within the model framework. These risks are controlled with a well-defined Model Approval Policy.

Finally, as is the case with most financial firms, operational risks in the trading book can also arise as a result of system failures. Again, the Firm's extensive Business Continuity Plan (BCP) has been designed to thwart any such occurrence. The trading desks have a number of alternative means for booking transactions across a number of different physical locations.

We have a well diversified business and do not have large concentrations of risk. Our risk reports capture non-financial risks. We have daily operational risk reports which track and highlight pricing issues, delivery fails, systems malfunctions, and margin disputes. The list of main risks which we have highlighted is always present in some form. Our exposures change due to the ebbs and flows of our business.

## QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

### Valuation

The foundation of our risk management process lies in the discipline instilled by marking our positions to market on a daily basis. The marking process is overseen by the Product Control function, which is part of Finance, and is independent of the Front Office.

The goal of marking to market is to record all positions in our books at market. For all liquid products, establishing the market value at the end of the trading day is a straightforward matter, using price feeds from the many widely available independent price sources, such as Reuters or Bloomberg. For products that are less liquid and for which independent price sources are not easily available we impute marks using standard basis relationships, such as spreads, between the value of the position we wish to price and other positions for which prices are easily available. Product Controllers conduct periodic price-testing, during which independent price sources are used to check the valuations we are using for illiquid positions.

In certain cases there may be uncertainty around the market value which could be achieved for a particular position, perhaps because the position we hold is unusually large relative to the size of a normal market trade, in which case we may expect the market price to be affected adversely by the action of unwinding our position, or perhaps because a position is particularly illiquid and there is no regular market available in which to price it. In these cases we adjust the mark to allow for the valuation uncertainty.

For structured derivatives transactions, which are custom-made for a client, and for which there are therefore no market prices available, we estimate market using models, the input parameters of which are widely available from independent market sources. Such input parameters may include, for example, implied volatilities of at-the-money options. In certain cases, the model may require input parameters which are not observable in the market, for example the implied correlation between an interest rate and a spot foreign exchange rate. In these cases, the values of the input parameters are taken to be our best estimate of their fair value, and we set the mark very conservatively to account for the fact that our best estimate may not be where the true value lies. In these situations, the Firm would not book any profit at the onset of the transaction but instead value the position conservatively until a more robust price valuation becomes available. This adjustment accounts for the valuation difference arising when we adjust the model parameters to adverse, but nevertheless plausible, levels. Before any trade requiring a model for valuation or risk measurement may be executed, the model must be accepted jointly by traders, Research, and Global Risk Management. For the purpose of expediency, a pricing model can be accepted subject to conditions to be set by the party having non-critical reservations on the model. Models that cater to a small number of new transactions with limited risk exposures need not go through the entire formal acceptance procedure. In such cases, it is essential that the relevant staff in the middle office, financial control and Quantitative Risk Management be informed beforehand, and a quick determination of the exception is made. The financial controller in consultation with the business unit head and Quantitative Risk Management must also decide on the appropriate P&L adjustment for the potential inaccuracy of the model.

## QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

### Pricing Models

Pricing models are developed by the quantitative research teams dedicated to each business. Those teams do not report into the specific business they support. That structure creates a fair amount of independence for model conceptualization and development away from sales and trading. Models are extensively tested by research prior to use; sometimes for many months. Various extreme situations are examined during the test phases. It is important to consider though that our derivatives pricing models are not designed to “forecast” the future developments in the market place. They are calibrated to a cross-section of current market prices of liquid instruments and then used to price and hedge less liquid instruments. A pricing model would fail if it were inadequate for hedging or would produce prices that would be very different from the ones observed in similar trades. In addition, models are independently reviewed by the Model Validation Group which is part of the Global Risk Management Division. The key elements of risk that vet in our models are:

- The ability of the model to reproduce accurately the prices of the instruments to which the model is calibrated;
- The plausibility of prices and hedge ratios for the instruments targeted to be priced and hedged by the model;
- The stability of the model parameters over time;
- The hedging costs that the model would induce;
- The degree of assumptions embedded in the model;
- The transparency market context where the model will be applied.

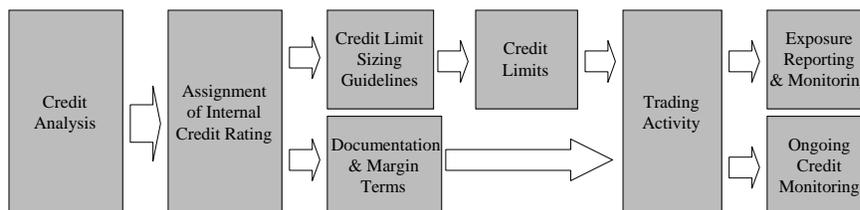
Model inputs are vetted by controllers on an ongoing basis. The models used to obtain some inputs (e.g. interpolated curves or surfaces) are independently vetted by the Model Validation Group.

Also on an ongoing basis, models are subject to the discipline imposed by price verification (controllers) and P&L attribution (explanation of P&L in terms of the risk metrics provided by the models). If a model is not performing well either in valuation or hedging, it will be exposed by these processes.

## QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

### Credit Risk Process

#### 1) Approval process and authority



- Credit Analysts review all relevant information in analyzing new and existing counterparties including:
  - Audited annual financial statements, interim reports and regulatory filings
  - Prospectus and other available financial information
  - Due diligence including on site client visits, particularly for hedge funds
  - External credit rating agency reports
  - Lehman Brothers industry and company reports
  - Search of external news reports and company press releases
  - Peer analysis and benchmarking
  - Market data, including credit spreads associated with the counterparty's debt or credit default spreads
- Any Reputation Risk issues are treated seriously and vetted with senior management
- Internal Credit Ratings (ICR) are assigned to all counterparties to denote relative default probability (exceptions for short dated cash trading and small, de minimis risk exposures)
  - We use a scale of 8 bands ranging from iAAA to iD (7 for non-defaulted counterparties, 1 for defaulted)
  - Rating bands from iA to iB are further refined by the addition of a plus (“+”) or minus (“-”) modifier to show relative standing within each rating band i.e. total of 15 ICRs + iD
  - ICRs are assessed “through-the-cycle”
  - We assign long run average 1 year PD % to each ICR based on ECAI criteria, internal experience and statistical procedures
- Internal Facility Ratings (IFR) are assigned to all facilities to denote relative recovery prospects
  - We use 10 bands from i1 (highest recovery) to i10 (lowest recovery). No modifiers are used i.e. total 10 IFRs.
- All ICRs and IFRs are updated annually
  - CRM use ratings models (aka scorecards) to assign internal ratings
  - The models are based on a combination of both Quantitative drivers, Qualitative drivers as well as the Analyst's expert judgment

## QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

- Qualitative drivers include industry characteristics, competitive position, operating environment, management and corporate governance
- Quantitative drivers include earnings, cash flow, liquidity, debt & capital structure and financial flexibility
  - These are not pure quantitative inputs but rather the assigned score for each quantitative driver reflects the analyst's expert judgment over how the quantitative factors are likely to behave or develop through the cycle, taking into account historical and current levels and in the context of qualitative drivers above
- Analysts expert judgment allows the analyst discretion in interpreting the data
  - Includes input from the analyst's experience, views on various risks that differ from external views and opinions on how the company might operate under various stress scenarios
- ICR models are based on major industry classes including:
  - Insurance
  - Banks
  - Hedge Funds
  - Sovereigns
  - Corporate
  - Municipals
  - SPV's
  - Lehman SPV's
  - Broker Dealers
  - Collective Investment Scheme (Primarily Mutual Funds)
  - Not-For-Profit
  - Pension Fund
- Each scorecard is customized, focusing on systematic Qualitative and Quantitative Rating Drivers for that industry class
  - The scorecard result proposes a Counterparty ICR, as capped by the Sovereign ICR of the host country
  - Allows the Credit Analyst to override the proposed ICR in exceptional circumstances provided that suitable justification is documented
- IFR models are based on higher level types
  - Corporates
  - Financial Institutions
  - Funds
  - However for some industries we use a single pre-determined IFR rather than assessing individual recovery prospects.
- Each scorecard is accompanied by a User Guide which
  - Defines the type of counterparty that is accommodated under the scorecard

## QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

- Describes and explains the Rating Drivers, and provides a range of Rating Factors that should be considered
- The benefits of standard industry scorecards include:
  - Global rating consistency through Credit Risk Management
  - Improved transparency so that all inputs to the ratings process are available
  - Reduces credit analyst subjectivity but still allows role for expert judgment
  - Our database includes an audit trail of risk rating changes, credit analyst overrides & benchmarking against external Rating Agencies
- In addition to assigning internal ratings, the Credit Analyst prepares a Credit Review on each counterparty which includes:
  - Description of the counterparty
  - Credit assessment highlighting the major strengths and weaknesses of the counterparty
  - Summary financial information & analysis
  - Support the internal credit rating recommendation
  - Recommended credit limits
  - Summary of existing business, including notable credit terms in legal agreements

## QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

### 2) Credit limits setting

- Credit limit guidelines provide credit analysts with risk-consistent and transparent guidelines for setting Family-level credit limits on a MPE basis
- Our guidelines support but do not replace the role of credit analyst judgment in setting MPE limits. The Credit appetite guidelines do not prescribe rules for sub-allocating product-specific limits within a Family
- Credit limits are scaled by risk rating and tenor that reflect a worst case loss to the firm, assuming the counterparty defaults and expected recoveries
- In practice, actual limit recommendations may be less than our guidelines due to:
  - Lack of business requirements warranting the full amount
  - Documentation or other structural requirements
  - Structural enhancements or covenants might allow us to exceed the guidelines
- Counterparty level limits are expressed as
  - Overall limits for the counterparty
    - Treasury limit – usually only with large banks and money market funds for Firm Liquidity Management
    - Pre-settlement limit – expressed in potential risk terms
    - Settlement limit – set where market convention requires free delivery risk
  - Product and Lehman entity specific limits
    - Risk limits are set for derivative exposures
      - a sub-set of counterparties and products are “pre-approved” to trade
      - other derivatives transactions require trade-by-trade approval
    - Notional limits are set for other products (FX, Repo, Forwards, Sec Lending)
    - FX settlement limits, money lines and mutual fund investments are expressed in notional terms
- Pre-settlement usage figures include enforceable netting agreements and collateral
  - Hedge funds and prime brokerage exposures are measured in VaR
- Global Head of Risk Management has unrestricted authority as delegated by the Executive Committee and determines the roles and responsibilities and the level of authority of each credit analyst & manager
- Credit authorities for counterparty credit are delegated to credit officers. Authorities are based on exposure and are set by internal risk rating and tenor
- Seven levels of authority are approved

## QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

- Credit analysts approve limits within delegated authority. A senior credit manager is required to approve limits which exceed the analyst's delegated authority
- Transactions not covered by a credit limit require trade specific review & approval
- Exposure and product limits are monitored on a daily basis (current credit exposure (CCE), notional limits, MPE)
- Transactions in excess of limits require specific credit approval under delegated credit authority

### 3) How limits incorporate market events and financial conditions of counterparty

- Credit Risk Management has a robust culture of risk monitoring. Our risk monitoring includes:
  - Monitor counterparty exposures (including CCE & MPE) on a daily basis.
    - Material changes are researched to determine what caused the change – new activity, market movements, etc.
    - We monitor clients behavior in meeting margin calls
    - We review trading activity particularly for the active trading accounts (Hedge funds)
  - On a regular basis, we update our credit views of our counterparties, including
    - Financial statements, company press releases and regulatory filings
    - Industry trends for our key industries
    - Country dynamics in emerging markets
    - Market data on our clients including credit spreads
    - Hedge funds in particular, we track monthly results and Net Asset Values
    - Internal Ratings are subject to a formal annual refresh requirement or more frequently if the credit warrants.
  - Credit hedging is considered & used to manage single transactions or concentrated positions

## QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

### REPORTS

#### Risk Summary for 2Q2008

##### Market Conditions during 2Q2008

- From March 01, 2008 to May 31, 2008, there was a general concern of financial earnings. However, JP Morgan, Merrill Lynch, and Citigroup each reported results generally in line with expectations despite significant write downs.
- In March-April, amid a backdrop of increasingly deteriorating liquidity conditions, the Fed announced its “Term Securities Lending Facility” proposal. The Fed would accept agency and AAA private-label residential mortgage debt as collateral, thus providing liquidity for what have been relatively illiquid assets. The Fed’s historic intervention bolstered credit markets as CDX rallied sharply.
- In April – early May, the credit markets continued to recoup earlier losses, supported largely by the decrease in systematic risk and the fact that the anticipated corporate earnings results were largely positive. Global equity markets all rose between April and early May due to optimistic earnings reports in the technology sector.
- Equity indices generally saw gains during the quarter as market volatilities declined.
- The US Federal Reserve lowered the Federal Funds Rates on March 18 from 3.0% to 2.25%, and to 2.0% on April 30.
- The US Treasury curve saw a Bear Flattening with 10-year rates increasing from 3.51% to 4.06% and 2-year rates increasing from 1.62% to 2.66% during the February 29 to May 30 period.

**Table 1 – Important Indicative Index Measures**

Index / Value	05/30/08	Change 2Q08-1Q08	04/30/08	03/31/08	02/29/08	01/31/08
Lehman Stock (\$)	36.81	-14.18 (-28%)	44.24	37.64	50.99	62.59
Lehman 5 Yr CDS (bp)	219	+5	160	296	214	152
CDX.NA.IG (bp)	105	-60	105	101	165	108
CDX.NA.HVOL (bp)	237	-100	225	321	337	251
CMBX.NA.AAA (bp)	106	-106	103	146	212	133
CMBX.NA.BBB (bp)	1,228	-287	1,234	1,671	1,515	1,245
ABX.HE.AAA (\$)	59	-1	65	56	60	71
ABX.HE.BBB (\$)	5	-10	6	10	15	19
Muni/Treasury 5Year Yield Ratio (%)	89%	-43%	100%	122%	132%	96%
S&P 500	1,400	69 (+5.2%)	1,386	1,323	1,331	1,379
Nasdaq 100	2,033	288 (+17%)	1,918	1,782	1,745	1,841
VIX (%)	17.83	-8.71	20.79	25.61	26.54	26.20
DJ Stoxx 50	3,183	-6 (-0.2%)	3,237	3,018	3,189	3,241
Nikkei 225	14,339	736 (+5.4%)	13,850	12,526	13,603	13,592
US Treasury 2yr (ytm)	2.66	1.04	2.29	1.62	1.62	2.10
US Treasury 5yr (ytm)	3.41	0.93	3.03	2.46	2.48	2.76
US Treasury 10yr (ytm)	4.06	0.55	3.77	3.45	3.51	3.60
US Fed Funds Rate (%)	2.00	-1.00	2.00	2.25	3.00	3.00
US WTI Cushing Spot (\$)	127.35	+25.57	113.70	101.54	101.78	91.67

## QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

- The underlying economy remains listless – New home sales fell 8.5% in March to a 17yr low. Lending standards have continued to tighten across the board. With oil prices hitting new highs, inflationary pressures remain elevated.

**Table 2 – Major Risk Factors**

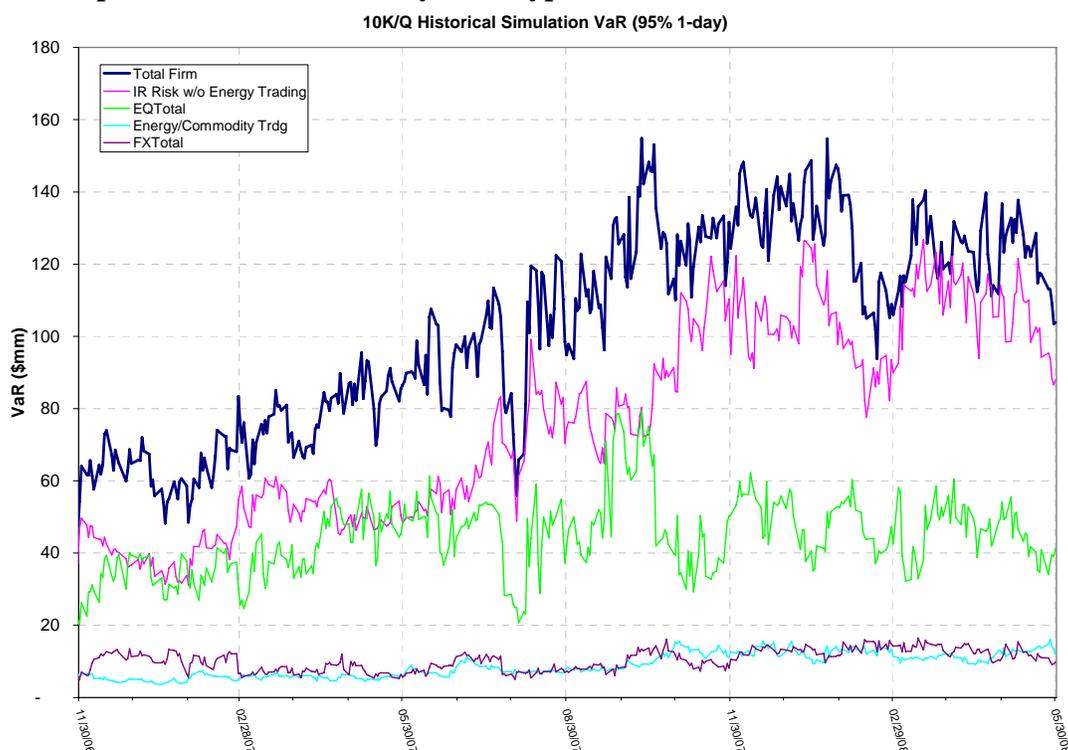
Factor / Value	05/30/08	Change 2Q08-1Q08	04/30/08	03/31/08	02/29/08	01/31/08
<b>IR Products IR01 (\$mm/bp)</b>	1.79	2.67	3.24	7.28	-0.88	-1.15
<b>HG &amp; HY Cr01 (\$mm/bp)</b>	4.58	-0.86	3.58	4.03	5.44	7.55
<b>Sec Prod &amp; Real Estate IR01 (\$mm/bp)</b>	1.02	0.24	.96	2.72	0.78	1.69
<b>Firm PublicEquity Delta (\$bn)</b>	1.82	0.07	3.22	2.65	1.75	2.13
<b>Firm 10% Public Equity Decline P&amp;L (\$mm)</b>	-153	-165	-189	-214	+12	NA
<b>Equity Div Equity Delta (\$bn)</b>	0.93	0.51	1.58	1.28	.42	1.17
<b>Equity Div Vega (\$mm)</b>	19.4	-14.1	28.3	33.8	33.5	23.2
<b>Equity Div Gamma (\$mm)</b>	-242.4	-325.5	165.0	37.1	83.1	42.1

## QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

### General VaR Drivers

- Quarter-end VaR slightly decreased from \$106mm in 2Q08 to \$104mm in 1Q08 (\$2mm decrease). This decrease was caused by decreases in the Interest Rate VaR, Equities VaR, and FX VaR.
- At a firm level, decreases in positions accounted for a \$13mm decrease in quarter-end VaR which was partially offset by an increase in market volatility, which accounted for an \$11mm increase in VaR, for a net reduction of \$2mm.
- Position decreases were seen for public equity delta within both the Equity Division and in other divisions as shown in Table 2 between the period ends for 1Q08 and 2Q08. Also, the shift in the IR Products IR01 position from short to long had the effect of increasing diversification between the interest rate positions and the credit/equity positions.
- Decrease in the average VaR from \$129mm in 1Q08 to \$123mm in 2Q08 was caused by decreased average Equities VaR and by an increase in the firm's average diversification from 27% to 33%.
- Commodities did not account for significant changes in VaR and were not major contributors to the change in the Firm's average VaR.

### Graph 1 – Firm Level VaR by Risk Type



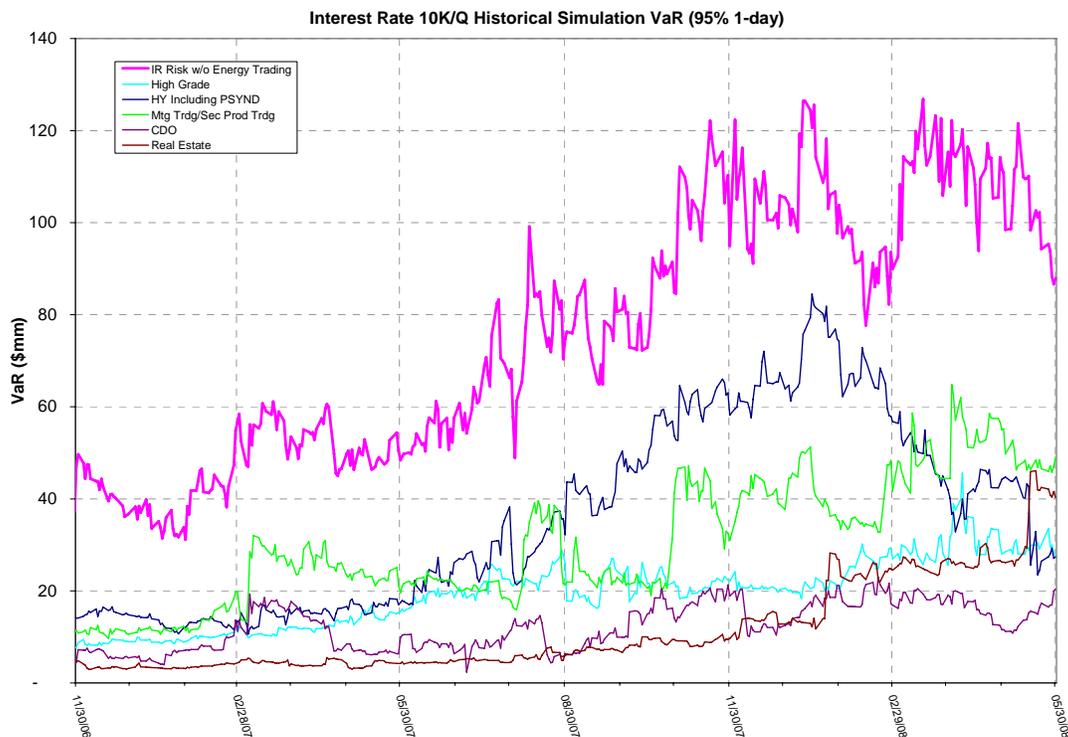
### Interest Rate VaR Drivers

- Decreases in the quarter-end to quarter-end Interest Rate VaR were predominantly driven by decreases in GPS and High Yield VaR which were partially offset by increases in the VaR from the Mortgage/Securitized Products, Interest Rates, and Real Estate businesses.

## QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

- Mortgage/Securitized Products VaR fluctuated in the \$40-60mm range over the quarter. Average VaR for Mortgage/Securitized Products increased by \$9mm from \$40mm in 1Q08 to \$51mm in 2Q08 due to increases in market volatility and widening spreads. As shown in Table 1, prices on the ABX.HE indices dropped over the quarter due to a general increase in the related spreads.
- Real Estate VaR increased on both a quarter-end to quarter-end and average basis from 1Q08 to 2Q08. Average CMBS Fixed AA 10yr, BBB- 10yr, and BB 10yr spreads have widened by 332bps, 717bps and 717bps respectively.
- The IR Products business VaR increased on both a period-end and quarterly-average basis due to increased rates positions. The period end IR01 changed from short \$879k/bp on February 29 to long \$1.79mm/bp on May 30 with a peak of long \$8.79mm/bp on April 2. In contrast, the business was frequently short IR01 during 1Q08.
- Average High Yield VaR decreased from \$68mm in 1Q08 to \$42mm in 2Q08 due to a reduction in loan exposure.
- Quarter End VaR for the firm also decreased due to the spin-off of GPS into the hedge fund R3 (55% of the positions moved off the firm's balance sheet).

**Graph 2 – Firm Interest Rate VaR by Major Contributors**

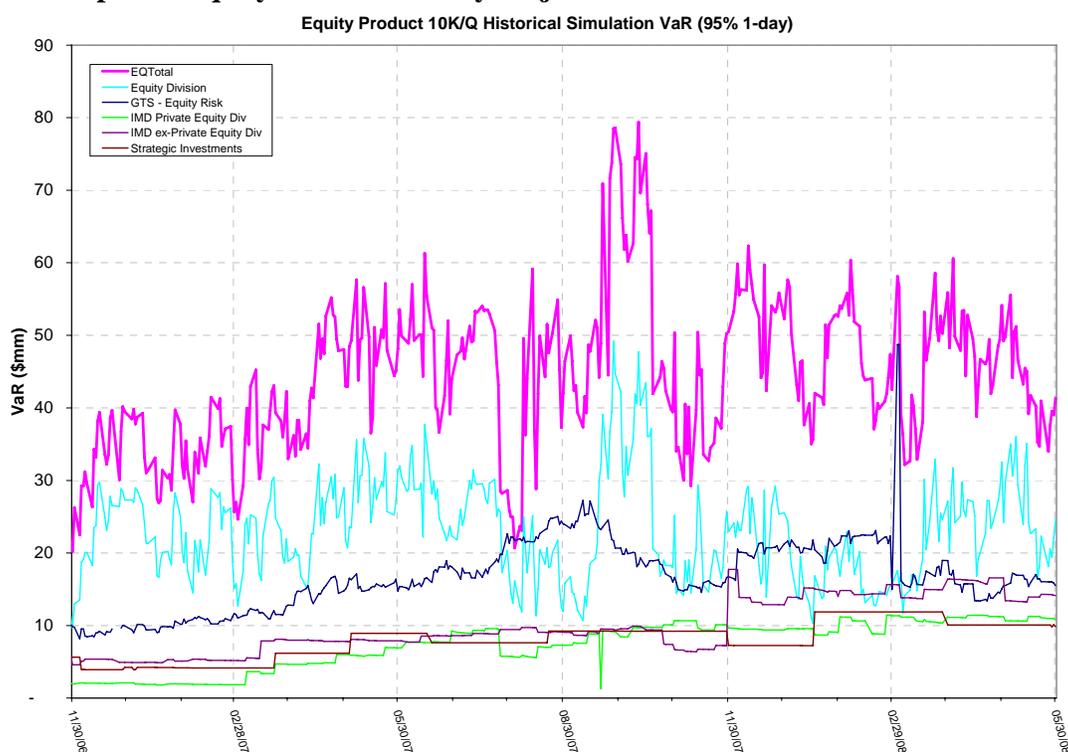


## QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

### Equity Product VaR Drivers

- The Equity Division slightly increased its average equity delta position from \$1.42bn during 1Q08 to \$1.52bn during 2Q08. However, average diversification within equities increased from 33% in 1Q08 to 41% in 2Q08 which offset the delta increase.
- Equity Division average VaR increased primarily due to increased risk taken by the Volatility Flow business.

**Graph 3 – Equity Product VaR by Major Contributors**



### Factors Driving the Risk Appetite Change

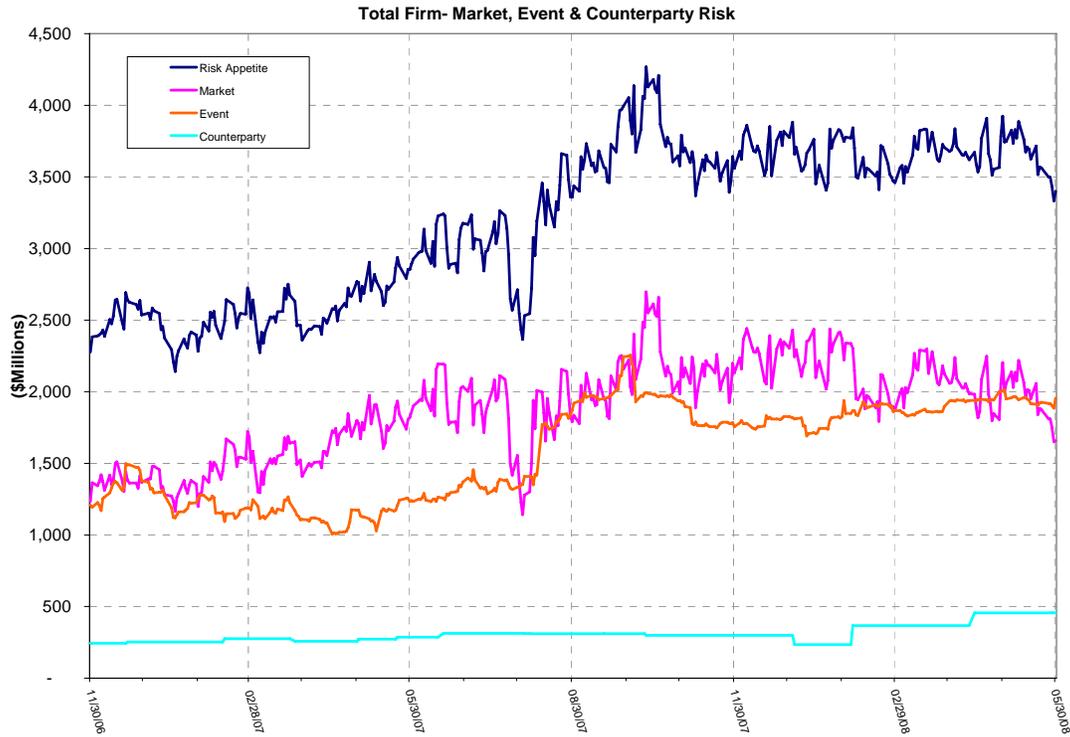
- Risk Appetite remained relatively flat during 2Q08. A decrease in the quarterly average market risk was offset by an increase in the quarterly average event risk and counterparty risk components. The quarter-end RA values decreased from \$3.46bn in 1Q08 to \$3.40bn in 1Q08. Quarterly average RA value remained flat at \$3.7bn.
- Quarterly average market risk decreased from \$2.19bn in 1Q08 to \$2.03bn in 2Q08. Quarter-end market risk decreased from \$1.88bn in 1Q08 to \$1.66bn in 2Q08.
- Firm event risk stayed in the range of \$1.83bn to \$2.01bn with the average increasing from \$1.82bn in 1Q08 to \$2.00bn in 2Q08. Average event risk for the Real Estate business increased from \$1.03bn in 1Q08 to \$1.12bn in 2Q08 due to the LTV percentage increasing as position write downs occurred. The KSK

## QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

position markup largely accounted for the increase in average event risk from \$146mm to \$639mm within GTS.

- Counterparty credit risk increased by only \$120mm.
- The market risk was driven by the same factors that drove the VaR as discussed above.

**Graph 4 – Risk Appetite by Risk Type**



## QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

### VaR – Historical Simulation

In millions	At			Average VaR Three Months Ended			Three Months Ended May 31, 2008	
	May 31, 2008	Feb 29, 2008	Nov 30, 2007	May 31, 2008	Feb 29, 2008	Nov 30, 2007	High	Low
	Interest rate risk	\$ 88	\$ 90	\$ 96	\$109	\$103	\$ 89	\$127
Equity price risk	41	43	50	46	49	51	61	32
Foreign exchange risk	10	14	11	13	13	10	16	9
Commodity risk	12	11	13	12	13	11	16	9
Diversification benefit	(47)	(52)	(46)	(57)	(48)	(37)		
	<u>\$104</u>	<u>\$106</u>	<u>\$ 124</u>	<u>\$123</u>	<u>\$130</u>	<u>\$ 124</u>	<u>\$140</u>	<u>\$103</u>

## QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

### Revenue Volatility

In millions	Revenue Volatility At			Average Revenue Volatility Three Months Ended			Three Months Ended May 31, 2008	
	May 31, 2008	Feb 29, 2008	Nov 30, 2007	May 31, 2008	Feb 29, 2008	Nov 30, 2007	High	Low
	Interest rate risk	\$169	\$ 83	\$ 75	\$129	\$ 77	\$ 58	\$169
Equity price risk	49	48	44	49	47	41	51	48
Foreign exchange risk	10	7	6	8	6	6	10	7
Commodity risk	8	5	4	6	5	4	8	5
Diversification benefit	(75)	(39)	(34)	(50)	(32)	(34)		
	\$161	\$104	\$ 95	\$142	\$103	\$ 75	\$162	\$104

## QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

### Fair Value of OTC Derivative Contracts by Maturity

In millions	May 31, 2008						
	Less than 1 Year	1 to 5 Years	5 to 10 Years	Greater than 10 Years	Cross Maturity, Cross Product and Cash Collateral Netting <sup>(1)</sup>	OTC Derivatives	Net Credit Exposure
<b>Assets</b>							
Interest rate, currency and credit default swaps and options	\$ 4,048	\$23,249	\$17,753	\$17,885	\$(37,287)	\$25,648	\$25,757
Foreign exchange forward contracts and options	3,022	639	547	177	(2,002)	2,383	2,078
Other fixed income securities contracts <sup>(2)</sup>	9,740	2,796	356	3	(2,554)	10,341	6,161
Equity contracts	3,467	3,376	1,132	1,833	(3,786)	6,022	3,432
	<u>\$20,277</u>	<u>\$30,060</u>	<u>\$19,788</u>	<u>\$19,898</u>	<u>\$(45,629)</u>	<u>\$44,394</u>	<u>\$37,428</u>
<b>Liabilities</b>							
Interest rate, currency and credit default swaps and options	\$ 4,482	\$14,787	\$13,468	\$11,611	\$(34,615)	\$ 9,733	
Foreign exchange forward contracts and options	2,707	877	408	203	(1,925)	2,270	
Other fixed income securities contracts <sup>(3)</sup>	4,922	1,983	875	—	(2,088)	5,692	
Equity contracts	2,073	6,143	1,138	1,828	(4,791)	6,391	
	<u>\$14,184</u>	<u>\$23,790</u>	<u>\$15,889</u>	<u>\$13,642</u>	<u>\$(43,419)</u>	<u>\$24,086</u>	

## QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

### Net Credit Exposure for OTC Contracts

Counterparty Risk Rating	S&P/Moody's Equivalent	Less than 1 Year	1 to 5 Years	5 to 10 Years	Greater than 10 Years	Total	
						May 31, 2008	November 30, 2007
iAAA	AAA/Aaa	4%	6%	6%	9%	25%	24%
iAA	AA/Aa	12	6	2	4	24	26
iA	A/A	9	6	6	13	34	37
iBBB	BBB/Baa	4	1	1	2	8	7
iBB	BB/Ba	1	2	1	1	5	3
iB or lower	B/B1 or lower	1	2	1	—	4	3
		31%	23%	17%	29%	100%	100%

## QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

### Counterparty Credit Risk – Credit Exposure by Rating

- ◆ We continue to be prudent in our approach to counterparty credit risk
  - We have a very low tolerance for delays on receiving collateral, where applicable
  - We give very close scrutiny to the value of customer collateral posted against margin loans
- ◆ We have a very high quality credit portfolio
- ◆ 93.6% of our counterparty exposure is in investment grade names

#### Credit Exposure Trend by Rating

(US\$ million)	Ratings					Percentages				
	2Q '07	3Q '07	4Q '07	1Q '08	2Q '08	2Q '07	3Q '07	4Q '07	1Q '08	2Q '08
AAA	6,967	9,104	11,407	14,427	13,259	21.7%	23.1%	23.5%	24.9%	24.6%
AA	14,464	13,652	15,768	18,890	14,782	45.1%	34.7%	32.4%	32.6%	27.5%
A	7,443	13,142	16,735	17,636	18,706	23.2%	33.4%	34.4%	30.4%	34.7%
BBB	2,520	2,486	2,859	3,835	3,664	7.8%	6.3%	5.9%	6.6%	6.8%
BB	461	709	937	1,469	1,969	1.4%	1.8%	1.9%	2.5%	3.7%
B or Lower	241	282	923	1,751	1,474	0.8%	0.7%	1.9%	3.0%	2.7%
<b>Total</b>	<b>32,096</b>	<b>39,375</b>	<b>48,629</b>	<b>58,008</b>	<b>53,854</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

	2Q '07	3Q '07	4Q '07	1Q '08	2Q '08
Investment Grade	97.8%	97.5%	96.2%	94.4%	93.6%
Below Investment Grade	2.2%	2.5%	3.8%	5.6%	6.4%
	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

*Note: Does not include money market deposits.*

## QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

### Counterparty Credit Risk – Credit Exposure by Sector

- ◆ The bulk of our exposure is to banks and other financial institutions
- ◆ Hedge Fund exposure represents less than 1% of our total portfolio

#### Current Credit Exposure Trend by Sector

(US\$ million)	Sector					Percentages				
	2Q '07	3Q '07	4Q '07	1Q '08	2Q '08	2Q '07	3Q '07	4Q '07	1Q '08	2Q '08
Banks	9,521	11,351	12,782	14,327	11,232	29.7%	28.8%	26.3%	24.4%	20.8%
Other Financial	9,445	13,428	17,473	23,062	20,243	29.4%	34.1%	35.9%	40.8%	37.6%
Municipal Issuer	1,868	1,967	2,833	3,622	2,846	5.8%	5.0%	5.8%	6.1%	5.3%
Insurance	1,300	1,829	2,003	1,510	1,811	4.1%	4.6%	4.1%	2.5%	3.4%
Government Entity	4,951	5,331	6,215	5,604	6,982	15.4%	13.6%	12.8%	9.5%	13.0%
Broker/Dealer	1,396	2,363	2,417	3,296	3,368	4.3%	6.0%	5.0%	5.6%	6.2%
Industrial Services	1,890	1,703	2,851	4,602	5,264	5.9%	4.3%	5.9%	7.8%	9.8%
Pension Retirement Fund	1,533	1,026	1,672	1,353	1,802	4.8%	2.6%	3.4%	2.3%	3.3%
Hedge Fund	172	354	348	560	255	0.5%	0.9%	0.7%	0.9%	0.5%
High Net Worth Individuals	20	23	35	72	51	0.1%	0.1%	0.1%	0.1%	0.1%
<b>Total</b>	<b>32,096</b>	<b>39,375</b>	<b>48,629</b>	<b>58,008</b>	<b>53,854</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

*Note: Does not include money market deposits.*

## QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

### Counterparty Credit Risk – Credit Exposure by Region

- ◆ 92.8% of our exposure is in the U.S., Canada and western Europe

#### Current Credit Exposure Trend by Region

(US\$ million)	Region					Percentages				
	2Q '07	3Q '07	4Q '07	1Q '08	2Q '08	2Q '07	3Q '07	4Q '07	1Q '08	2Q '08
Western Europe	18,011	19,927	22,913	24,522	30,327	56.1%	50.6%	47.1%	42.3%	56.3%
US / Canada	10,225	13,175	17,678	22,813	19,676	31.9%	33.5%	36.4%	39.3%	36.5%
Latin America / Caribbean	1,561	4,244	5,798	7,700	296	4.8%	10.8%	11.9%	13.3%	0.6%
Mid East / Africa	452	410	424	365	463	1.4%	1.0%	0.9%	0.6%	0.9%
Central & East Europe / Central A	27	65	68	180	227	0.1%	0.2%	0.1%	0.3%	0.4%
Asia / South Asia	1,820	1,554	1,747	2,428	2,865	5.7%	3.9%	3.6%	4.2%	5.3%
<b>Total</b>	<b>32,096</b>	<b>39,375</b>	<b>48,629</b>	<b>58,008</b>	<b>53,854</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

Notes: Included in 'Latin America' are the Cayman Islands, Bermuda, Bahamas, Netherland Antilles, and other Caribbean offshore domiciles.  
Japan Region as of April 2008 per Sovereign Risk Policy is now rolled into Asia/Central Asia

*Note: Does not include money market deposits.*

# QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

## Stress Testing Results 2Q 2008

Stress Test Report in \$ (000) for May 30, 2008 - Unaud														
Business	Bull Steepening	Bull Flattening	Bear Flattening	Bear Steepening	EMS Crisis	Rating Default & IP Risk	HY / LBO / Default Risk	Equity Crash (10%)	Parallel Move Down	Parallel Move Up	Black Monday	Oil Supply Crisis	Liquidity Crunch	Credit Crunch
<b>Fixed Income</b>														
IF Products	571,361	(115,149)	(275,220)	172,245	341,878	348,100	347,253	452,066	207,138	30,255	475,270	523,243	(116,560)	125,277
Foreign Exchange	(100,603)	15,405	5,828	(78,527)	(202,273)	(202,273)	(202,273)	(72,811)	(63,403)	(14,003)	(74,652)	(81,148)	(181,465)	(15,814)
Commodities	4,151				9,261							15,262	9,261	9,261
High Grade	988,037	75,237	(7,908)	(777,280)	481,987	(241,841)	(241,841)	140,209	658,007	(2,900)	(56,437)	(187,217)	(207,560)	138,889
High Yield	(118,953)	(9,437)	5,774	(201,262)	(204,948)	6,245	(74,402)	(5,615)	(38,130)	5,251	(20,409)	31,456	(18,498)	(273,977)
Pipeline and Commodity	(10,256)	0	0	(11,859)	(115,940)	(115,940)	(115,940)	(5,575)	(82,121)	0	(5,575)	(1,338)	(115,940)	(15,942)
COO	(70,144)	12,235	(57,402)	(152,000)	(152,000)	(152,000)	(152,000)	(27,598)	22,805	(58,917)	14,194	68,200	(65,969)	(2,484)
Securitized Products	54,373	41,379	(205,402)	(73,281)	10,961	(65,601)	(10,578)	(18,150)	38,027	(154,280)	(19,003)	136,005	68,140	(678,909)
Real Estate	(24,940)	20,313	(20,453)	(22,048)	34	(74,259)	(74,259)	(25,446)	18,881	(24,186)	(29,447)	22,209	(40,262)	(227,758)
MBS	(62,960)	39,203	(29,956)	(41,378)	(87,271)	(14,250)	(14,250)	(21,600)	(118,800)	467,232	(13,205)	(118,800)	(184,670)	13,141
FD Corp	10,532	(3,669)	(4,215)	5,737	37,891	7,281	9,303	25,900	25,900	(4,240)	10,262	23,975	16,704	14,602
Alternative Portfolio Solutions								(11,158)			0			
<b>Fixed Income TOTAL</b>	<b>18,184</b>	<b>85,937</b>	<b>(483,473)</b>	<b>(587,817)</b>	<b>(236,493)</b>	<b>(232,338)</b>	<b>(238,518)</b>	<b>42,199</b>	<b>5,188</b>	<b>(163,389)</b>	<b>128,114</b>	<b>213,882</b>	<b>(188,476)</b>	<b>11,381,676</b>
<b>Equities</b>														
Cash	52,055	694	1,679	5,308	50,450	15,627	35,433	77,834	52,055	1,060	64,573	76,088	47,225	52,055
Commodities	(24,002)	14,819	1,862	(23,814)	(23,814)	(23,814)	(23,814)	(18,480)	(1,328)	(3,871)	(7,754)	(22,762)	(18,076)	(21,425)
Volatility	556,380	17,941	48,154	(4,398)	(88,695)	(115,879)	(102,324)	(31,649)	354,975	176	(18,785)	(36,817)	(39,563)	(81,335)
Equity Strategies	5,464	3,143	14,859	(8,713)	50,043	(3,202)	(19,822)	18,891	5,464	11,508	29,890	(7,500)	5,261	3,135
Portfolio	(7,616)	2,242	1,428	(1,691)	402	(1,848)	(5,511)	(1,289)	(3,818)	1,845	(9,230)	(441)	(2,275)	(38,777)
Event Driven	(19,099)	4,505	6,545	(6,098)	(19,225)	(7,742)	(20,140)	(46,688)	(12,969)	10,242	(31,376)	(27,100)	(13,488)	(19,200)
Volatility Flow	23,123	(7,763)	(71,721)	(24,989)	86,405	(20,721)	(58,994)	402,271	15,932	(18,684)	402,271	(32,307)	20,588	22,480
Systemic Trading	(21,181)	(2,277)	(3,283)	(2,949)	(20,017)	(97)	(11,915)	887,124	621,197	(1,270)	(39,448)	(88,299)	(115,807)	(31,177)
Synthetic	(10,123)	2,106	5,032	(2,248)	(7,190)	(3,276)	(8,280)	(18,282)	(5,122)	5,032	(11,841)	(12,949)	(5,192)	(8,123)
Corporates	(1,103)	491	2,453	(1,226)	(7,849)	(3,168)	(7,849)	(3,168)	(2,453)	(6,122)	(2,431)	(5,813)	(3,189)	(3,189)
Emerg	(9,403)	2,975	10,129	(5,159)	(10,973)	(4,540)	(9,565)	(2,451)	(8,492)	9,854	(12,071)	(3,671)	(2,274)	(6,471)
Latin America	1,239	(190)	994	490	3,181	1,212	1,245	3,410	1,239	(981)	2,600	1,415	2,006	1,241
Emerging Markets	(20,887)	717	6,205	(1,152)	(36,382)	(4,201)	(12,214)	(92,946)	(25,881)	5,022	(72,269)	(16,847)	(16,424)	(25,581)
<b>Equities TOTAL</b>	<b>(88,463)</b>	<b>80,923</b>	<b>(77,489)</b>	<b>(113,241)</b>	<b>(16,312)</b>	<b>(81,213)</b>	<b>(72,518)</b>	<b>164,917</b>	<b>(88,554)</b>	<b>18,444</b>	<b>78,515</b>	<b>(273,464)</b>	<b>(16,164)</b>	<b>(183,288)</b>
<b>Investment Management</b>														
Private Equity	(200,264)	32,706	92,804	(207,276)	(162,180)	(115,852)	(245,484)	(273,233)	(286,626)	94,042	(191,943)	(233,127)	(376,221)	(207,302)
LIAM Seed Capital	(152,383)	43,869	76,880	(67,498)	(138,080)	(103,020)	(152,820)	(369,380)	(338,044)	79,210	(196,828)	(201,247)	(124,470)	(158,516)
<b>Investment Management TOTAL</b>	<b>(352,647)</b>	<b>76,575</b>	<b>169,684</b>	<b>(174,774)</b>	<b>(200,260)</b>	<b>(118,872)</b>	<b>(198,304)</b>	<b>(642,614)</b>	<b>(548,612)</b>	<b>173,252</b>	<b>(198,171)</b>	<b>(434,374)</b>	<b>(188,635)</b>	<b>(325,818)</b>
<b>Private Services</b>														
Fin Services	43,019	26,312	(57,131)	(33,867)	40,253	28,118	28,116	42,273	40,871	(84,910)	42,273	72,778	(88,966)	43,714
IFP	(14,137)	32	1	688	(164)	(164)	(164)	(201)	(164)	2	(630)	183	(311)	(2,423)
<b>Private Services TOTAL</b>	<b>28,882</b>	<b>26,344</b>	<b>(57,130)</b>	<b>(33,179)</b>	<b>39,989</b>	<b>27,954</b>	<b>27,952</b>	<b>42,072</b>	<b>40,707</b>	<b>(85,908)</b>	<b>42,271</b>	<b>72,856</b>	<b>(89,249)</b>	<b>41,291</b>
<b>Investment Banking</b>														
IB	(208)	68	137	(88)	(107)	(88)	(27)	(63)	(208)	137	(237)	(181)	(242)	(208)
<b>Investment Banking TOTAL</b>	<b>(208)</b>	<b>68</b>	<b>137</b>	<b>(88)</b>	<b>(107)</b>	<b>(88)</b>	<b>(27)</b>	<b>(63)</b>	<b>(208)</b>	<b>137</b>	<b>(237)</b>	<b>(181)</b>	<b>(242)</b>	<b>(208)</b>
<b>BON CORP</b>														
Non-Corp	(15,158)	6,291	13,664	(7,262)	(27,408)	(9,021)	(19,364)	(99,989)	(19,198)	13,664	(12,179)	(29,288)	(1,138)	(18,594)
<b>BON CORP TOTAL</b>	<b>(15,158)</b>	<b>6,291</b>	<b>13,664</b>	<b>(7,262)</b>	<b>(27,408)</b>	<b>(9,021)</b>	<b>(19,364)</b>	<b>(99,989)</b>	<b>(19,198)</b>	<b>13,664</b>	<b>(12,179)</b>	<b>(29,288)</b>	<b>(1,138)</b>	<b>(18,594)</b>
<b>Principal Investing Portfolio</b>														
Global Principal Strategies	(7,100)	88	176	(1,269)	(7,890)	(2,294)	(2,294)	(7,842)	(7,890)	176	(1,269)	(1,269)	(3,432)	(2,614)
Global Volatility Strategies	(18,183)	507	22,021	(18,183)	(18,183)	(18,183)	(18,183)	(60,267)	(60,267)	20,237	(61,814)	(162,818)	(11,187)	(181,818)
<b>Principal Investing Portfolio TOTAL</b>	<b>(25,283)</b>	<b>495</b>	<b>22,197</b>	<b>(19,452)</b>	<b>(26,073)</b>	<b>(20,477)</b>	<b>(20,477)</b>	<b>(78,109)</b>	<b>(78,167)</b>	<b>19,413</b>	<b>(63,083)</b>	<b>(164,086)</b>	<b>(12,319)</b>	<b>(184,192)</b>
<b>Fin Wide TOTAL</b>	<b>(145,473)</b>	<b>326,669</b>	<b>(117,922)</b>	<b>(161,824)</b>	<b>(161,824)</b>	<b>(161,824)</b>	<b>(161,824)</b>	<b>(161,824)</b>	<b>(161,824)</b>	<b>32,721</b>	<b>(64,274)</b>	<b>(641,621)</b>	<b>(164,286)</b>	<b>(1,642,728)</b>

# QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

## Scenarios

### Bull Steepening

## Bull Steepening

Modeled after post 9/11, Flight to Quality (Sep 11, 2001 - Sep 25, 2001)

<b>Rates</b>	<ul style="list-style-type: none"><li>◆ <b>USD:</b> Treasury rates: 2Y -90bps, 10Y -30bps (60bps steepening),<ul style="list-style-type: none"><li>- Swap Spr: 2Y +20bps, 10Y +5bps</li><li>- Cap vol +5%, Swaption vol +3%</li></ul></li><li>◆ <b>EUR:</b> Govt rates: 2Y -57bps, 10Y -17bps (40bps steepening),<ul style="list-style-type: none"><li>- Swap Spr: 10Y +11 bp</li><li>- Cap vol +5%, Swaption vol +3%</li></ul></li><li>◆ <b>GBP:</b> Govt rates: 2Y -72bp, 10y rates -32bp (40bps steepening) ,<ul style="list-style-type: none"><li>- Swap Sprd :+20 bps,</li><li>- Cap vol +7%, Swaption vol +3.5%,</li></ul></li><li>◆ <b>JPY:</b> Govt rates: 2Y +1bp, 10Y unch; cap vol +5%, Swaption vol 1%</li><li>◆ <b>Inflation:</b> +35 bps <i>(vol shocks are absolute)</i></li></ul>
<b>FX</b>	<ul style="list-style-type: none"><li>◆ JPY up 8%, CHF up 8%, EM ccys down 5%-35%</li><li>◆ Vols: JPY 40%, EMG 15%-30% <i>(vol shocks are relative)</i></li></ul>
<b>Mortgage</b>	<ul style="list-style-type: none"><li>◆ FNCL (Fannie Mae 30yr) LOAS widened by 5 bp, FNCL LOAS by 4 bp. Trust IO by + 36 bp and PO by -8 bp.</li><li>◆ HEL AAA widens by 3 bp, and BBB- widens by 95 bp. OAS Drop widens by 5bp, subprime loan by 19 bp, MTA loan and hybrid loan widen by 12 bp and 10 bp respectively. CMBS AAA by 3 bp, BB by 85 bp. CMBS whole loan by + 8 bp.</li></ul>
<b>Credit</b>	<ul style="list-style-type: none"><li>◆ HG spreads out 25%</li><li>◆ HY market down 4.3% (Ba), 5.7% (B), 8.5% (Caa and below), HY Loans down 1.0% (Ba), 2.4% (B), 4.8% (Caa and below). CDS down 5.7% (Ba), 6.3% (B), 8.5% (Caa and below)</li><li>◆ Latin/East Europe EMG spreads widen 30%, Asia credit spreads widen 25%</li><li>◆ Correlation: Equity tranches up-front prices down (5Y Maturity ITRAXX 0-3 tranche -5.54%, CDX 0-3 tranche -6.26%, CDX HY 0-10 tranche -5%)</li></ul>
<b>Equity</b>	<ul style="list-style-type: none"><li>◆ Developed Markets Countries (D) - Americas -12%, Asia -7%, EMEA -14; Emerging Markets I Countries (E1) - Americas -13%, Asia -14%, EMEA -14%; Emerging Markets II Countries (E2) - Americas -16%, Asia -14%, EMEA -17%</li><li>◆ 1M Vol +69.3%, 3M Vol +40%, 6M Vol +28.3%, 9M Vol +23.1%, 1Y Vol +20%, 2Y Vol +14.1%, 3Y Vol +11.5%, 5Y Vol +8.9% <i>(vol shocks are relative)</i></li></ul>

# QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

## Bull Flattening

### Bull Flattening

Modeled after the period before the major rates backup in the summer of 2003. Generally strong market tone across all asset classes due to signs of economic recovery and low inflation expectations, but reduced demand for energy (May 1, 2003 - May 15, 2003)

<b>Rates</b>	<ul style="list-style-type: none"><li>◆ <b>USD:</b><ul style="list-style-type: none"><li>- Treasury rates: 2Y -25bps, 10Y -50bps (25bps flattening)</li><li>- Swap Spr: -5bps</li><li>- Cap vol +4%, Swaption vol +2%</li></ul></li><li>◆ <b>EUR:</b><ul style="list-style-type: none"><li>- Govt rates: 2Y -46bps, 10Y -56bps (10bps flattening)</li><li>- Swap Spr: -11bps</li><li>- Cap vol +5%, Swaption vol +3%</li></ul></li><li>◆ <b>GBP:</b><ul style="list-style-type: none"><li>- Govt rates: 2Y -45bps, 10Y -65bps (20bps flattening)</li><li>- Swap Spr: -20bps</li><li>- Cap vol +7%, Swaption vol +3.5%</li></ul></li><li>◆ <b>JPY:</b> 10Y rate -2bp, sprd +30 bps</li><li>◆ <b>Inflation:</b> -35 bps <i>(vol shocks are absolute)</i></li></ul>
<b>FX</b>	<ul style="list-style-type: none"><li>◆ All ccys up 3%, except Latam down 4% and minor Asian ccys up 1%</li><li>◆ Vols: Latam 20%, RUB 400%, TRY 60%, Eastern Europe 15%</li><li>◆ JPY 20%, Other majors 10%, Minor Asian 30% <i>(vol shocks are relative)</i></li></ul>
<b>Mortgage</b>	<ul style="list-style-type: none"><li>◆ FNCL LOAS tightens by -5 bp, FNCL LOAS by -3 bp. Trust IO by -54 bp and PO by +8 bp.</li><li>◆ HEL AAA tightens by -2 bp, and BBB- tightens by -15 bp. OAS Drop tightens by 3 bp, subprime loan by -6 bp, MTA loan and hybrid loan widen by -5 bp and -4 bp respectively. CMBS AAA by -2 bp, BB by -9 bp. CMBS whole loan by -3 bp.</li></ul>
<b>Credit</b>	<ul style="list-style-type: none"><li>◆ HY market up 1.0% (Ba), 0.5% (B), 0.2% (Caa and below). HY Loans up 0.0% (Ba), 0.1% (B), 0.1% (Caa and below). CDS up 0.3% (Ba), 0.2% (B), 0.2% (Caa and below)</li><li>◆ HG spreads tighten 10%</li><li>◆ Latin/East Europe EMG, Asia credit spreads tighten 10%</li></ul>
<b>Equity</b>	<ul style="list-style-type: none"><li>◆ Developed Markets Countries (D) - Americas +4%, Asia +3%, EMEA +1%; Emerging Markets I Countries (E1) - Americas +2%, Asia +4%, EMEA +2%; Emerging Markets II Countries (E2) - Americas +2%, Asia +4%, EMEA +3%</li><li>◆ Vols: 1M Vol -11%, 3M Vol -6.4%, 6M Vol -4.5%, 9M Vol -3.7%, 1Y Vol -3.2%, 2Y Vol -2.2%, 3Y Vol -1.8%, 5Y Vol -1.4% <i>(vol shocks are relative)</i></li></ul>
<b>Energy</b>	<ul style="list-style-type: none"><li>◆ Crude oil front end prices fall 35%, back end prices fall 23%</li><li>◆ Oil products front end prices fall 40%, back end prices fall 26%</li><li>◆ Oil vols down 50%</li><li>◆ US natural gas front end falls 40%, back end 26%, vols fall by 50%</li><li>◆ US power front end prices fall 35%, back end falls 23% <i>(front end 0-6mo; back end 4Y and up; vol shocks are multiplicative/relative)</i></li></ul>

# QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

## Bear Flattening

### Bear Flattening

**Treasury down trade caused by asset reallocation and yield searching. Spreads generally moderately tightened, and Equity and high yield asset classes outperformed others (modeled after the period Oct 30, 2001 - Nov 14, 2001)**

<b>Rates</b>	<ul style="list-style-type: none"><li>◆ <b>USD:</b> Treasury rates: 2Y +95bps, 10Y +70bps (25bps flattening)<ul style="list-style-type: none"><li>- Swap Spr: 2Y +12bps, 10Y +8bps</li><li>- Cap vol +4%, Swaption vol +2%</li></ul></li><li>◆ <b>EUR:</b> Govt rates: 2Y +61bps, 10Y +41bps<ul style="list-style-type: none"><li>- Swap sprd + 11 bp</li><li>- Cap vol +5%, Swaption vol +3%</li></ul></li><li>◆ <b>GBP:</b> Govt rates: 2Y +70, 10Y +50bps<ul style="list-style-type: none"><li>- Swap sprd +20 bps</li><li>- Cap vol +7%, Swaption vol +3.5%</li></ul></li><li>◆ <b>JPY:</b> 10Y rate +1bps, sprd -10 bps</li><li>◆ <b>Inflation:</b> -35 bps <i>(vol shocks are absolute)</i></li></ul>
<b>FX</b>	<ul style="list-style-type: none"><li>◆ Major ccys down 3%, BRL and TRY up 4%, RUB and Eastern Europe down 1%, minor Asian up 1%</li><li>◆ Vols: Latam 20%, RUB 140%, TRY 40%, Eastern Europe 30%</li><li>◆ JPY 15%, Other majors -10%</li><li>◆ Minor Asia 50% <i>(vol shocks are relative)</i></li></ul>
<b>Mortgage</b>	<ul style="list-style-type: none"><li>◆ FNCL LOAS widened by 5 bp, FNCL LOAS by 3 bp. Trust IO by + 54 bp and PO by -10 bp.</li><li>◆ HEL AAA widens by 5 bp, and BBB- widens by 15 bp. OAS Drop widens by 3 bp, subprime loan by 9 bp, MTA loan and hybrid loan widen by 8 bp and 7 bp respectively. CMBS AAA by 3 bp, BB by 9 bp. CMBS whole loan by + 3 bp.</li></ul>
<b>Credit</b>	<ul style="list-style-type: none"><li>◆ HY market up 1.4% (Ba), 0.2% (B), 2.9% (Caa and below). HY Loans up 0.5% (Ba), 0.3% (B), 1.5% (Caa and below). CDS up 3.2% (Ba), 0.9% (B), 2.9% (Caa and below)</li><li>◆ HG spreads tighten 15%</li><li>◆ Latin/East Europe EMG, Asia credit spreads tighten 15%</li></ul>
<b>Equity</b>	<ul style="list-style-type: none"><li>◆ Developed Markets Countries (D) - Americas +8%, Asia +3%, EMEA +7%; Emerging Markets I Countries (E1) - Americas +10%, Asia +11%, EMEA +7%; Emerging Markets II Countries (E2) - Americas +12%, Asia +10%, EMEA +10%</li><li>◆ 1M Vol -21%, 3M Vol -12.1%, 6M Vol -8.6%, 9M Vol -7%, 1Y Vol -6.1%, 2Y Vol -4.3%, 3Y Vol -3.5%, 5Y Vol -2.7% <i>(vol shocks are relative)</i></li></ul>

# QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

## Bear Steepening

## Bear Steepening

Modeled after post LTCM (Sep 28, 1998 – Oct 13, 1998)

<b>Rates</b>	<ul style="list-style-type: none"><li>◆ <b>USD:</b> Treasury rates: 2Y +45bps, 10Y +75bps (30bps steepening)<ul style="list-style-type: none"><li>– Swap Spr: 2Y +10bps, 10Y +15bps</li><li>– Cap vol +4%, Swaption vol +2%</li></ul></li><li>◆ <b>EUR:</b> Govt rates: 2Y +49bps, 10Y +51bps<ul style="list-style-type: none"><li>– Swap sprd + 11 bp</li><li>– Cap vol +3%, Swaption vol +3%</li></ul></li><li>◆ <b>GBP:</b> Govt rates: 2Y +46, 10Y +50bps<ul style="list-style-type: none"><li>– Cap vol +7%, Swaption vol +3.5%</li></ul></li><li>◆ <b>JPY:</b> 10Y rate -11bps, sprd -45 bps</li><li>◆ <b>Inflation:</b> +35 bps <i>(vol shocks are absolute)</i></li></ul>
<b>FX</b>	<ul style="list-style-type: none"><li>◆ JPY up 5%, Major Europe up 5%, TRY unch, Latam down 10%, RUB down 10%, Minor Asia down 5-10%</li><li>◆ Vols: Latam 65%, RUR 65%, Eastern Europe 65%, TRY 65% <i>(vol shocks are relative)</i></li></ul>
<b>Mortgage</b>	<ul style="list-style-type: none"><li>◆ FNCL LOAS widened by 10 bp, FNCL LOAS by 6 bp. Trust IO by + 109 bp and PO by -18 bp.</li><li>◆ HEL AAA widens by 5 bp, and BBB- widens by 30 bp. OAS Drop widens by 6 bp, subprime loan by 9 bp, MTA loan and hybrid loan widen by 8 bp and 7 bp respectively. CMBS AAA by 2 bp, BB by 18 bp. CMBS whole loan by + 3 bp.</li></ul>
<b>Credit</b>	<ul style="list-style-type: none"><li>◆ HY market down 9.5% (Ba), 10.0% (B), 11.2% (Caa and below). HY Loans down 1.4% (Ba), 3.1% (B), 5.7% (Caa and below). CDS down 8.3% (Ba), 9.5% (B), 11.2% (Caa and below)</li><li>◆ HG spreads widen 25%, Latin/East Europe EMG spreads widen 30%, Asia credit spreads widen 25%</li><li>◆ Correlation: Equity tranches up-front prices down (5Y Maturity ITRAXX 0-3 tranche -5.54%, CDX 0-3 tranche -6.26%, CDX HY 0-10 tranche -5%)</li></ul>
<b>Equity</b>	<ul style="list-style-type: none"><li>◆ Developed Markets Countries (D) - Americas -5%, Asia -5%, EMEA -5%; Emerging Markets I Countries (E1) - Americas -5%, Asia -2%, EMEA -8%; Emerging Markets II Countries (E2) - Americas -6%, Asia -4%, EMEA -13%</li><li>◆ 1M Vol +15%, 3M Vol +8.7%, 6M Vol +6.1%, 9M Vol +5%, 1Y Vol +4.3%, 2Y Vol +3.1%, 3Y Vol +2.5%, 5Y Vol +1.9% <i>(vol shocks are relative)</i></li></ul>

# QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

## EMG Crisis

### EMG Crisis

Market meltdown driven by EMG (Russian default) with spiked idiosyncratic risk, higher defaults, higher correlations, falling energy demand (modeled after the period Aug 17, 1998 - Aug 30, 1998)

<b>Rates</b>	<ul style="list-style-type: none"><li>◆ <b>USD:</b> Treasury rates: 2Y -65bps, 10Y -50bps (15bps steepening)<ul style="list-style-type: none"><li>- Swap Spr: +20bps</li><li>- Cap vol +5%, Swaption vol +3%</li></ul></li><li>◆ <b>EUR:</b> Govt rates: 2Y -57bp, 10Y -17bp (40bps steepening)<ul style="list-style-type: none"><li>- Swap spr: 10Y -11 bp</li><li>- Cap vol +5%, Swaption vol +3%</li></ul></li><li>◆ <b>GBP:</b> Govt rates: 2Y -72bps, 10Y -32bp (40bps steepening)<ul style="list-style-type: none"><li>- Swap sprd: +20 bps,</li><li>- Cap vol +7%, Swaption vol +3.5%</li></ul></li><li>◆ <b>JPY:</b> 10Y rate +5bp, Swap sprd +10 bps</li><li>◆ <b>Inflation:</b> +35 bps <i>(vol shocks are absolute)</i></li></ul>
<b>FX</b>	<ul style="list-style-type: none"><li>◆ TRY down 50%, RUR down 50%, Latam down 20%-40%, minor Asia down 20%-40%, JPY up 10%, GBP up 4%, EUR up 5%, CHF up 6%</li><li>◆ Vols: TRY 300%, RUR 100%, Latam 300%, CNY 300%</li><li>◆ Minor Asia 100-300%, Majors 30% <i>(vol shocks are relative)</i></li></ul>
<b>Mortgage</b>	<ul style="list-style-type: none"><li>◆ FNCL LOAS widened by 15 bp, FNCL LOAS by 9 bp. Trust IO by +163 bp and PO by -27 bp.</li><li>◆ HEL AAA widens by 5 bp, and BBB- widens by 67 bp. OAS Drop widens by 8 bp, subprime loan by 18 bp, MTA loan and hybrid loan widen by 16 and 14 bp respectively. CMBS AAA by 5 bp, BB by 54 bp. CMBS whole loan by +8 bp.</li></ul>
<b>Credit</b>	<ul style="list-style-type: none"><li>◆ HG spreads widen 50-65%, EMG spreads widen 200%</li><li>◆ HY market down 6.3% (Ba), 7.0% (B), 7.5% (Caa and below). HY Loans down 1.3% (Ba), 2.5% (B), 3.8% (Caa and below). CDS down 7.6% (Ba), 7.5% (B), 7.5% (Caa and below)</li><li>◆ Correlation: Equity tranches up-front prices down (5Y Maturity ITRAXX 0-3 tranche -5.54%, CDX 0-3 tranche -6.26%, CDX HY 0-10 tranche -5%) EMG default rate spike up to 10% for one country default out of high beta countries</li></ul>
<b>Equity</b>	<ul style="list-style-type: none"><li>◆ Developed Markets Countries (D) - Americas -12%, Asia -5%, EMEA -8%; Emerging Markets I Countries (E1) - Americas -32%, Asia -34%, EMEA -22%; Emerging Markets II Countries (E2) - Americas -32%, Asia -41%, EMEA -45%</li><li>◆ 1M Vol +86.6%, 3M Vol +50%, 6M Vol +35.4%, 9M Vol +28.9%, 1Y Vol +25%, 2Y Vol +17.7%, 3Y Vol +14.4%, 5Y Vol +11.2% <i>(vol shocks are relative)</i></li></ul>
<b>Energy</b>	<ul style="list-style-type: none"><li>◆ Crude front end prices fall 40%, back end prices fall 26%</li><li>◆ Oil products front end prices fall 45%, back end prices fall 29%</li><li>◆ Oil front end vols down 50%</li><li>◆ US natural gas front end falls 40%, back end falls 26%, vols fall by 50%</li><li>◆ US power front end falls 35%, back end falls 23%. <i>(Front end 0-6mo; back end 4yr and up; vols are relative)</i></li></ul>

## QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

### Rating/Default and Hedge Fund Risk

#### Rating/Default and Hedge Fund Risk

Significant rating risk (e.g. GM), one name default in CDX or HVOL coupled with hedge fund blow-out on structured credit products causing panic selling, significant market widening with CDS basis gapping out (modeled after the period Jul 18, 2002 - Aug 2, 2002)

<b>Rates</b>	<ul style="list-style-type: none"><li>◆ <b>USD:</b> Treasury rates: 2Y -46bps, 10Y -35bps (11bps steepening)<ul style="list-style-type: none"><li>- Swap Spr: +14bps</li><li>- Cap vol +5%, Swaption vol +3%</li></ul></li><li>◆ <b>EUR:</b> Govt rates: 2Y -57bps, 10Y -17bp (40bps steepening)<ul style="list-style-type: none"><li>- Swap spr: 10Y +11 bp</li><li>- Cap vol +5%, Swaption vol +3%</li></ul></li><li>◆ <b>GBP:</b> Govt rates: 2Y -72bps, 10Y -32bp (40bps steepening)<ul style="list-style-type: none"><li>- Swap Sprd: +20 bps,</li><li>- Cap vol +7%, Swaption vol +3.5%</li></ul></li><li>◆ <b>JPY:</b> 10Y +4bp, Swap sprd +10 bps</li><li>◆ <b>Inflation:</b> +35 bps (vol shocks are absolute)</li></ul>
<b>FX</b>	<ul style="list-style-type: none"><li>◆ Major ccy in the range of +/- 4%, minor Asian +/-2%, Latam down 2%-5%, and TRY and Eastern Europe down 6%</li><li>◆ Vols: Latam 10%, TRY 40%, RUR and Eastern Europe 40%, Major ccy 15%, minor Asia 50% (vol shocks are relative)</li></ul>
<b>Mortgage</b>	<ul style="list-style-type: none"><li>◆ FNCL LOAS widened by 20 bp, FNCI LOAS by 12 bp. Trust IO by + 218 bp and PO by -36 bp.</li><li>◆ HEL AAA widens by 15 bp, and BBB- widens by 105 bp. OAS Drop widens by 10 bp, subprime loan by 38 bp, MTA loan and hybrid loan widen by 30 and 28 bp respectively. CMBS AAA by 12 bp, BB by 130 bp. CMBS whole loan by + 21 bp.</li></ul>
<b>Credit</b>	<ul style="list-style-type: none"><li>◆ HY market down 3.0% (Ba), 6.5% (B), 5.5% (Caa and below). HY Loans down 0.7% (Ba), 2.3% (B), 2.8% (Caa and below). CDS down 3.9% (Ba), 6.9% (B), 5.5% (Caa and below). Default rate loss shocks of 0.2% (Baa), 0.75% (Ba), 1% (B), 5% (Caa and below), Asian distressed NPL unchanged</li><li>◆ HG spreads widen 50%-65%. Latin/Eastern Europe EMG spreads widen 30%. Asia credit spreads widen 25%.</li><li>◆ Correlation: Equity tranches up-front prices down (5Y Maturity ITRAXX 0-3 tranche -5.54%, CDX 0-3 tranche -6.26%, CDX HY 0-10 tranche -5%)</li></ul>
<b>Equity</b>	<ul style="list-style-type: none"><li>◆ Developed Markets Countries (D) - Americas -5%, Asia -4%, EMEA -7%; Emerging Markets I Countries (E1) - Americas -11%, Asia -6%, EMEA -8%; Emerging Markets II Countries (E2) - Americas -13%, Asia -7%, EMEA -10%</li><li>◆ 1M Vol +18%, 3M Vol +10.4%, 6M Vol +7.3%, 9M Vol +6%, 1Y Vol +5.2%, 2Y Vol +3.7%, 3Y Vol +3%, 5Y Vol +2.3% (vol shocks are relative)</li></ul>

# QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

## HY/LBO/Default Risk

### HY/LBO/Default Risk

**Global default rate increase coupled with lower recovery. Investor demand dries up after "hot" market, leading to a longer syndication time line or no syndication in large LBO or M&A loan deals (modeled after the period Sep 16, 2002 - Oct 17, 2002)**

<b>Rates</b>	<ul style="list-style-type: none"><li>◆ <b>USD:</b> Treasury rates: 2Y -46bps, 10Y -35bps (11bps steepening)<ul style="list-style-type: none"><li>- Swap Spr: +14bps (widened)</li><li>- Cap vol +5%, Swaption vol +3%</li></ul></li><li>◆ <b>EUR:</b> Govt rates: 2Y -57bp, 10Y -17bp (40bps steepening)<ul style="list-style-type: none"><li>- Swap spr: 10Y +11 bp</li><li>- Cap vol +5%, Swaption vol +3%</li></ul></li><li>◆ <b>GBP:</b> Govt rates: 2Y -72bps, 10Y -32bp (40bps steepening)<ul style="list-style-type: none"><li>- Cap vol +7%, Swaption vol +3.5%</li></ul></li><li>◆ <b>JPY:</b> 10Y rate +2 bp, swap sprd +10 bps</li><li>◆ <b>Inflation:</b> +35 bps <i>(vol shocks are absolute)</i></li></ul>
<b>FX</b>	<ul style="list-style-type: none"><li>◆ Major ccy in the range of +/- 4%, minor Asian +/-2%, Latam down 2%-5%, and TRY and Eastern Europe down 6%.</li><li>◆ Vols: Latam 10%, TRY 40%, RUR and Eastern Europe 40%, Major ccy 15%, minor Asia 50% <i>(vol shocks are relative)</i></li></ul>
<b>Mortgage</b>	<ul style="list-style-type: none"><li>◆ FNCL LOAS widened by 8 bp, FNCL LOAS by 7 bp. Trust IO by - 51 bp and PO by +30 bp.</li><li>◆ HEL AAA widens by 5 bp, and BBB- widens by 350 bp. OAS Drop widens by 20 bp, subprime loan by 65 bp, MTA loan and hybrid loan widen by 25 and 20 bp respectively. CMBS AAA by 8 bp, BB by 117 bp. CMBS whole loan by + 16 bp.</li></ul>
<b>Credit</b>	<ul style="list-style-type: none"><li>◆ HG spreads widen 80% for 0-2yr, 70% for 2-5yr, 55% for 5-10yr, 50% for &gt;10yr</li><li>◆ HY market down 4.6% (Ba), 9.8% (B), 7.8% (Caa and below). HY Loans down 0.9% (Ba), 3.9% (B), 4.4% (Caa and below). CDS down 5.7% (Ba), 10.3% (B), 10.5% (Caa and below). Default rate loss shocks of 0.2% (Baa), 0.75% (Ba), 1% (B), 5% (Caa and below)</li><li>◆ Latin/East Europe EMG spreads widen 30%, Asia Credit spreads widen 25%</li></ul>
<b>Equity</b>	<ul style="list-style-type: none"><li>◆ Developed Markets Countries (D) - Americas -13%, Asia -8%, EMEA -12%; Emerging Markets I Countries (E1) - Americas -13%, Asia -10%, EMEA -12%; Emerging Markets II Countries (E2) - Americas -16%, Asia -11%, EMEA -12%</li><li>◆ 1M Vol +15%, 3M Vol +8.7%, 6M Vol +6.1%, 9M Vol +5%, 1Y Vol +4.3%, 2Y Vol +3.1%, 3Y Vol +2.5%, 5Y Vol +1.9% <i>(vol shocks are relative)</i></li></ul>

# QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

## Equity Crash

### Equity Crash (1987)

**Weakening US dollar, deteriorating US current account deficit, escalating US government debt, High P/E's low dividend yields (modeled after the period Oct 5, 1987 - Oct 19, 1987)**

Rates	<ul style="list-style-type: none"> <li>◆ <b>USD:</b> <ul style="list-style-type: none"> <li>- Treasury rates: 2Y -80bps, 10Y -30bps (50bps steepening)</li> <li>- Swap Spr: 2yr +20bps, 10yr +5bps</li> <li>- Cap vol +5%, Swaption vol +3%</li> </ul> </li> <li>◆ <b>EUR:</b> Govt rates: 2Y -57bps, 10Y -17bps (40bps steepening),           <ul style="list-style-type: none"> <li>- Swap spr: 10Y -11 bp</li> <li>- Cap vol +5%, Swaption vol +3%</li> </ul> </li> <li>◆ <b>GBP:</b> Govt rates: 2Y -72bps, 10Y -32bp (40bps steepening)           <ul style="list-style-type: none"> <li>- Swap spr: +20 bps</li> <li>- Cap vol +7%, Swaption vol +3.5%</li> </ul> </li> <li>◆ <b>JPY:</b> 10Y rate -25 bp, Swap sprd +10 bps</li> <li>◆ <b>Inflation:</b> +35 bps</li> <li>◆ <b>Fund Derivatives NAV:</b> down 31.5% <i>(vol shocks are absolute)</i></li> </ul>
FX	<ul style="list-style-type: none"> <li>◆ Major ccys up 5% except CHF up 8%, Emerging Europe down 5%</li> <li>◆ Latam down 10%, Asia down 5%, Minor Asia down 10%</li> <li>◆ Vols: 20% across <i>(vol shocks are relative)</i></li> </ul>
Mortgage	<ul style="list-style-type: none"> <li>◆ FNCL LOAS widened by 10 bp, FNCL LOAS by 6 bp. Trust IO by +109 bp and PO by -18 bp. HEL AAA widens by 4 bp, and BBB- widens by 75 bp, OAS Drop widens by 6 bp, subprime loan by 18 bp, MTA loan and hybrid loan widen by 16 and 14 bp respectively. CMBS AAA by 5 bp, BB by 72 bp. CMBS whole loan by + 9 bp.</li> </ul>
Credit	<ul style="list-style-type: none"> <li>◆ HG spreads widen 10%</li> <li>◆ HY market down 4.9% (Ba), 4.0% (B), 4.0% (Caa and below), HY Loans dow 1.1% (Ba), 1.5% (B), 2.0% (Caa and below). CDS down 6.2% (Ba), 4.5% (B), 4.0% (Caa and below).</li> <li>◆ Latin/East Europe EMG spreads widen 10% Asia credit spreads 10% widening</li> <li>◆ Correlation: Equity tranches up-front prices down (5Y Maturity ITRAXX 0-3 tranche -5.54%, CDX 0-3 tranche -6.26%, CDX HY 0-10 tranche -5%)</li> </ul>
Equity	<ul style="list-style-type: none"> <li>◆ Developed Markets Countries (D) - Americas -32%, Asia -19%, EMEA -17%; Emerging Markets I Countries (E1) - Americas -32%, Asia -34%, EMEA -30%; Emerging Markets II Countries (E2) - Americas -32%, Asia -41%, EMEA -40%</li> <li>◆ 1M Vol +173.2%, 3M Vol +100%, 6M Vol +70.7%, 9M Vol +57.7%, 1Y Vol +50%, 2Y Vol +35.4%, 3Y Vol +28.9%, 5Y Vol +22.4% <i>(vol shocks are relative)</i></li> </ul>

# QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

## Parallel Move Down

### Parallel Move Down

Modeled after Post 9/11 Flight to Quality (Sep 11, 2001 - Sep 25, 2001)

<b>Rates</b>	<ul style="list-style-type: none"><li>◆ <b>USD:</b><ul style="list-style-type: none"><li>- Treasury: -65bps</li><li>- Swap spr: +10bps</li><li>- Cap vol +4%, Swaption vol +3%</li></ul></li><li>◆ <b>EUR:</b> -50 bps</li><li>◆ <b>GBP:</b> -55 bps</li><li>◆ <b>JPY:</b> -5 bps</li></ul> <p><i>(vol shocks are absolute)</i></p>
<b>FX</b>	<ul style="list-style-type: none"><li>◆ Major ccys up 4%, except CHF up 7% and GBP up 1%, EM ccys down 5%</li><li>◆ Vols: Latam 20%, TRY and Eastern Europe 15% RUR 45%</li><li>◆ Major ccys 30%, Minor Asia 35%</li></ul> <p><i>(vol shocks are relative)</i></p>
<b>Mortgage</b>	<ul style="list-style-type: none"><li>◆ FNCL LOAS widened by 5 bp, FNCL LOAS by 3 bp. Trust IO by +54 bp and PO by -10 bp.</li><li>◆ HEL AAA widens by 5 bp, and BBB- widens by 30 bp. OAS Drop widens by 3 bp, subprime loan by 12 bp, MTA loan and hybrid loan widen by 11 and 10 bp respectively. CMBS AAA by 2 bp, BB by 27 bp. CMBS whole loan by + 3 bp.</li></ul>
<b>Credit</b>	<ul style="list-style-type: none"><li>◆ HG spreads out 25%; Latin/Eastern Europe EMG spreads widen 30%, Asia credit spreads widen 25%.</li><li>◆ HY market down 4.3% (Ba), 5.7% (B), 8.5% (Caa and below). HY Loans down 1.0% (Ba), 2.1% (B), 4.3% (Caa and below). CDS down 5.7% (Ba), 6.3% (B), 8.5% (Caa and below)</li><li>◆ %, Correlation: Equity tranches up-front prices down (5Y Maturity ITRAXX 0-3 tranche -5.54%, CDX 0-3 tranche -6.26%, CDX HY 0-10 tranche -5%)</li></ul>
<b>Equity</b>	<ul style="list-style-type: none"><li>◆ Developed Markets Countries (D) - Americas -12%, Asia -7%, EMEA -14%; Emerging Markets I Countries (E1) - Americas -13%, Asia -14%, EMEA -14%; Emerging Markets II Countries (E2) - Americas -16%, Asia -14%, EMEA -17%</li><li>◆ 1M Vol +34%, 3M Vol +19.6%, 6M Vol +13.9%, 9M Vol +11.3%, 1Y Vol +9.8%, 2Y Vol +6.9%, 3Y Vol +5.7%, 5Y Vol +4.4%</li></ul> <p><i>(vol shocks are relative)</i></p>

# QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

## Parallel Move Up

## Parallel Move Up

Similar to Oct 30, 2001 - Nov 14, 2001 period

<b>Rates</b>	<ul style="list-style-type: none"><li>◆ <b>USD:</b><ul style="list-style-type: none"><li>- Treasury: +75bps</li><li>- Swap spr: +10bps</li><li>- Cap vol +3%, Swaption vol +2%</li></ul></li><li>◆ <b>EUR:</b> +50 bps</li><li>◆ <b>GBP:</b> +45 bps</li><li>◆ <b>JPY:</b> +5 bps</li></ul> <p><i>(vol shocks are absolute)</i></p>
<b>FX</b>	<ul style="list-style-type: none"><li>◆ Major ccys down 3%, BRL and TRY up 4%, RUB and Eastern Europe down 1%, minor Asian up 1%</li><li>◆ Vols: Latam 20%, RUB 140%, TRY 40%, Eastern Eur 30%, JPY 15%</li><li>◆ Other majors -10%, Minor Asia 50%</li></ul> <p><i>(vol shocks are relative)</i></p>
<b>Mortgage</b>	<ul style="list-style-type: none"><li>◆ FNCL LOAS widened by 5 bp, FNCL LOAS by 3 bp. Trust IO by 54 bp and PO by -10 bp.</li><li>◆ HEL AAA widens by 3 bp, and BBB- widens by 15 bp. OAS Drop widens by 3 bp, subprime loan by 9 bp, MTA loan and hybrid loan widen by 8 and 7 bp respectively. CMBS AAA by 2 bp, BB by 9 bp. CMBS whole loan by + 2 bp.</li></ul>
<b>Credit</b>	<ul style="list-style-type: none"><li>◆ HG spreads tighten 15%</li><li>◆ HY market up 1.4% (Ba), 0.2% (B), 2.9% (Caa and below). HY Loans up 0.5% (Ba), 0.3% (B), 1.5% (Caa and below). CDS up 3.2% (Ba), 0.9% (B), 2.9% (Caa and below)</li><li>◆ Latin/Eastern Europe EMG spreads tighten 15%, Asia credit spreads tighten 15%.</li></ul>
<b>Equity</b>	<ul style="list-style-type: none"><li>◆ Developed Markets Countries (D) - Americas +8%, Asia +3%, EMEA +7%; Emerging Markets I Countries (E1) - Americas +10%, Asia +11%, EMEA +7%; Emerging Markets II Countries (E2) - Americas +12%, Asia +10%, EMEA +10%</li><li>◆ 1M Vol -21%, 3M Vol -12.1%, 6M Vol -8.6%, 9M Vol -7%, 1Y Vol -6.1%, 2Y Vol -4.3%, 3Y Vol -3.5%, 5Y Vol -2.7%</li></ul> <p><i>(vol shocks are relative)</i></p>

# QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

## Black Monday

### Black Monday (modeled after 10/16 – 10/19 1987)

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<b>Rates</b>	<ul style="list-style-type: none"><li>◆ <b>USD:</b><ul style="list-style-type: none"><li>– Treasury rates: 2Y -80bps, 10Y -30bps (50bps steepening)</li><li>– Swap Spr: 2yr +20bps, 10yr +5bps</li><li>– Cap vol +5%, Swaption vol +3%</li></ul></li><li>◆ <b>EUR:</b> Govt rates: 2Y -57bps, 10Y -17bps (40bps steepening),<ul style="list-style-type: none"><li>– Swap spr: 10Y -11 bp</li><li>– Cap vol +5%, Swaption vol +3%</li></ul></li><li>◆ <b>GBP:</b> Govt rates: 2Y -72bps, 10Y -32bp (40bps steepening)<ul style="list-style-type: none"><li>– Swap spr: +20 bps</li><li>– Cap vol +7%, Swaption vol +3.5%</li></ul></li><li>◆ <b>JPY:</b> 10Y rate -25 bp, Swap sprd +10 bps</li><li>◆ <b>Inflation:</b> +35 bps</li><li>◆ <b>Fund Derivatives NAV:</b> down 20.5% <i>(vol shocks are absolute)</i></li></ul>
<b>FX</b>	<ul style="list-style-type: none"><li>◆ Major ccys up 5% except CHF up 8%, Emerging Europe down 5%</li><li>◆ Latam down 10%, Asia down 5%, Minor Asia down 10%</li><li>◆ Vols: 20% across <i>(vol shocks are relative)</i></li></ul>
<b>Mortgage</b>	<ul style="list-style-type: none"><li>◆ FNCL LOAS widened by 10 bp, FNCL LOAS by 6 bp. Trust IO by +109 bp and PO by -18 bp. HEL AAA widens by 4 bp, and BBB- widens by 75 bp. OAS Drop widens by 6 bp, subprime loan by 18 bp, MTA loan and hybrid loan widen by 16 and 14 bp respectively. CMBS AAA by 5 bp, BB by 72 bp. CMBS whole loan by + 9 bp.</li></ul>
<b>Credit</b>	<ul style="list-style-type: none"><li>◆ HG spreads widen 25%. Latin/Eastern Europe EMG spreads widen 30%, Asia credit spreads widen 25%.</li><li>◆ HY market down 4.9% (Ba), 4.0% (B), 4.0% (Caa and below). HY Loans down 1.1% (Ba), 1.5% (B), 2.0% (Caa and below). CDS down 6.2% (Ba), 4.5% (B), 4.0% (Caa and below)</li><li>◆ %; Correlation: Equity tranches up-front prices down (5Y Maturity ITRAXX 0-3 tranche -5.54%, CDX 0-3 tranche -6.26%, CDX HY 0-10 tranche -5%)</li></ul>
<b>Equity</b>	<ul style="list-style-type: none"><li>◆ Developed Markets Countries (D) - Americas -20%, Asia -17%, EMEA -13%; Emerging Markets I Countries (E1) - Americas -25%, Asia -27%, EMEA -25%; Emerging Markets II Countries (E2) - Americas -30%, Asia -30%, EMEA -30%</li><li>◆ 1M Vol +173.2%, 3M Vol +100%, 6M Vol +70.7%, 9M Vol +57.7%, 1Y Vol +50%, 2Y Vol +35.4%, 3Y Vol +28.9%, 5Y Vol +22.4% <i>(vol shocks are relative)</i></li></ul>

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# QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

## Oil Supply Crisis

### Oil Supply Crisis

**Major oil supply disruption at the source, likely due to political events in oil producing countries and/or terrorism, with great uncertainty around supplies returning to normal levels in the near future**

Rates	<ul style="list-style-type: none"> <li>◆ <b>USD:</b> <ul style="list-style-type: none"> <li>- Treasury rates: 2Y -125bps, 10Y -50bps (75bps steepening)</li> <li>- Swap Spr: 2yr +20bp, 10yr: +10bp. Cap vol +5%, Swaption vol +3%</li> </ul> </li> <li>◆ <b>EUR:</b> <ul style="list-style-type: none"> <li>- Govt rates: 2Y -50bps, 10Y -25bps (25bps steepening)</li> <li>- Swap Spr: -3bps. Cap vol +5%, Swaption vol +3%</li> </ul> </li> <li>◆ <b>GBP:</b> <ul style="list-style-type: none"> <li>- Govt rates: 2Y -75bps, 10Y -25bps (50bps steepening)</li> <li>- Swap Spr: -5bps. Cap vol +7%, Swaption vol +3.5%</li> </ul> </li> <li>◆ <b>JPY:</b> <ul style="list-style-type: none"> <li>- Govt rates: 10Y -30bp. Cap vol +15%, Swaption vol +10%</li> </ul> </li> <li>◆ <b>Inflation:</b> -20 bps <i>(vol shocks are absolute)</i></li> </ul>
FX	<ul style="list-style-type: none"> <li>◆ EUR +6%, JPY +8%, GBP +4%, CHF +9%, Latam -10% to -15%, Emerging Europe -12%, Asia -12%, Other : pegged currencies: -1%/+1%</li> <li>◆ Vols: +50% on major currencies, +100%-200% on emerging currencies <i>(vol shocks are relative)</i></li> </ul>
Mortgage	<ul style="list-style-type: none"> <li>◆ FNCL LOAS widened by 5 bp, FNCL LOAS by 3 bp. Trust IO by 54 bp and PO by -10 bp.</li> <li>◆ HEL AAA widens by 3 bp, and BBB- widens by 67 bp. OAS Drop widens by 3 bp, subprime loan by 17 bp, MTA loan and hybrid loan widen by 15 and 12 bp respectively. CMBS AAA by 2 bp, BB by 45 bp. CMBS whole loan by + 4 bp.</li> </ul>
Credit	<ul style="list-style-type: none"> <li>◆ HY market down 3.7% (Ba), 6.1% (B), 7.0% (Caa and below) HY Loans down 0.8% (Ba), 2.2% (B), 3.6% (Caa and below). CDS down 4.8% (Ba), 6.7% (B), 7.0% (Caa and below)</li> <li>◆ HG spreads widen 50%-65%. Latin/East Europe EMG spreads widen 30% (non-oil exporters). Asia credit spreads widen 40% (non-oil exporters)</li> </ul>
Equity	<ul style="list-style-type: none"> <li>◆ North America -13.5% UK -11.5% Germany -19.5% France -21% Remaining Euro -18.5% Japan -23% Hong Kong -17% Korea -12.5% Mexico -19% Brazil -19%, India -16.9%, Turkey -21.5%, Australia -11.5%</li> <li>◆ All Energy Sector Stocks: -3.9%</li> <li>◆ Vols: 1M +69%, 3M +40%, 6M +28%, 9M +23%, 1Y 20%, 2Y 14%, 3Y 12%, 5Y 9% <i>(vol shocks are relative)</i></li> </ul>
Energy	<ul style="list-style-type: none"> <li>◆ Crude oil: front 6 mo ave. price: \$106/ bbl, Year 1: \$105 bbl, Year 2: \$104/ bbl, Year 3: \$104/ bbl</li> <li>◆ Oil products: Heating oil - \$4.55/ gallon, Unleaded gas: \$4.65/ gallon</li> <li>◆ Oil vols up 100%</li> <li>◆ US natural gas: front 6mo ave. price: \$10.05/ mmbtu, following oil curve pattern</li> <li>◆ US power peak prices: front end: \$95/ MWh, following natural gas curve pattern <i>(Front end 0-6mo; back end 4yr and up; vol shocks are relative)</i></li> </ul>

# QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

## Liquidity Crunch

### Liquidity Crunch

Hawkish Federal Reserve and major Central Banks continuing on a path of raising rates, draining the extra liquidity enjoyed previously, resulting in a decline in the risky assets and spread products

Rates	<ul style="list-style-type: none"> <li>◆ <b>USD:</b> <ul style="list-style-type: none"> <li>- Treasury rates: 2Y +95bp, 10Y +70bp (25bps flattening)</li> <li>- Swap Spr: 2yr +12bp, 10yr: +8bp. Cap vol +4%, Swaption vol +2%</li> </ul> </li> <li>◆ <b>EUR:</b> <ul style="list-style-type: none"> <li>- Govt rates: 2Y +61bps, 10Y +41bp (20bp flattening)</li> <li>- Swap Spr: +11bp. Cap vol +5%, Swaption vol +3%</li> </ul> </li> <li>◆ <b>GBP:</b> <ul style="list-style-type: none"> <li>- Govt rates: 2Y +70bp, 10Y +50bp (20bp flattening)</li> <li>- Swap Spr: +20bp. Cap vol +7%, Swaption vol +3.5%</li> </ul> </li> <li>◆ <b>JPY:</b> Govt rates: short end +50bps, 2Y +35bps, 10Y +20bps; cap vol +8%, Swaption vol +2%</li> <li>◆ <b>Inflation:</b> -35 bps (vol shocks are absolute)</li> </ul>
FX	<ul style="list-style-type: none"> <li>◆ JPY and CHF up 8%, other majors down 2% to 3%, Latam down 15% to 32%, Emerging Europe down 15%-25%, Asia down 7%-15%,</li> <li>◆ Vols: JPY +40%, other major currencies +15%, Latam currencies +50%, Emerging Europe and Asian currencies +30% to +200% (vol shocks are relative)</li> </ul>
Mortgage	<ul style="list-style-type: none"> <li>◆ FNCL LOAS widened by 5 bp, FNCL LOAS by 3 bp. Trust IO by -36 bp and PO by +8 bp.</li> <li>◆ HEL AAA widens by 3 bp, and BBB- widens by 150 bp. OAS Drop widens by 7 bp, subprime loan by 20 bp, MTA loan and hybrid loan widen by 15 and 12 bp respectively. CMBS AAA by 3 bp, BB by 85 bp. CMBS whole loan by +8 bp.</li> </ul>
Credit	<ul style="list-style-type: none"> <li>◆ HY market down 6.3% (Ba), 7.0% (B), 7.5% (Caa and below). HY Loans down 1.3% (Ba), 2.5% (B), 3.8% (Caa and below). CDS down 7.6% (Ba), 7.5% (B), 7.5% (Caa and below)</li> <li>◆ HG spreads widen 50%-65%. EMG spreads widen 50%-75%.</li> <li>◆ Correlation: Equity tranches up-front prices down (5Y Maturity ITRAXX 0-3 tranche -5.54%, CDX 0-3 tranche -6.26%, CDX HY 0-10 tranche -5%)</li> </ul>
Equity	<ul style="list-style-type: none"> <li>◆ Developed Markets Countries (D) - Americas -8%, Asia -14%, EMEA -14%; Emerging Markets I Countries (E1) - Americas -21%, Asia -14%, EMEA -20%; Emerging Markets II Countries (E2) - Americas -25%, Asia -25%, EMEA -30%</li> <li>◆ 1M Vol +86.6%, 3M Vol +50%, 6M Vol +35.4%, 9M Vol +28.9%, 1Y Vol +25%, 2Y Vol +17.7%, 3Y Vol +14.4%, 5Y Vol +11.2% (vol shocks are relative)</li> </ul>
Energy	<ul style="list-style-type: none"> <li>◆ Crude front end prices fall 40%, back end prices fall 26% ; Oil products front end prices fall 45%, back end prices fall 29% ; Oil front end vols down 50%</li> <li>◆ US natural gas front end falls 40%, back end falls 26%, vols fall by 50%</li> <li>◆ US power front end falls 35%, back end falls 23%. (Front end 0-6mo; back end 4yr and up; vols are relative)</li> </ul>

Note: The factors are meant to reflect the nature of the stress events covering the historical periods specified for each scenario. The actual factors might be adjusted depending on the conditions of the current markets (such as if a ccy peg has already been broken, default correlations are already up, new risk factors appear in the market, one country started to resemble another country due to structural and/or political changes, etc.).

# QUARTERLY GLOBAL RISK MANAGEMENT INFORMATION

## Credit Crunch

## Credit Crunch

**Widening of credit spreads similar to but is not limited to the July-August 2007 period. Mortgages decline significantly. Most other markets experience a flight to quality move, EMG credit spreads gap, fx carry trades unwind, demand for energy declines.**

- ◆ **USD:** Treasury rates: 1mo -135bps, 2Y -80bps, 10Y -35bps
    - Swap Spr: 1mo +150bps, 2Y +30bps, 10Y +10bps
    - Cap vol +5%, Swaption vol +3%
  - ◆ **EUR:** Govt rates: 1mo +30bps, 2Y -60bps, 10Y -40bps,
    - Swap spr: 1mo +30bps, 2Y +30bps, 10Y +10bps
    - Cap vol +1%, Swaption vol +3%
  - ◆ **GBP:** Govt rates: 1mo +60bps, 2Y -40bps, 5Y -50bps, 10Y rates -40bps
    - Swap Sprd: 1mo +60bps, 2Y +25bps, 10Y +10bps,
    - Cap vol +7%, Swaption vol +2.5%
  - ◆ **JPY:** 2Y -15bsp, 10Y -5bps; Swap Spr: 6mo +20bps, 10Y +10bps
    - Cap vol +8%, Swaption vol +1%

(vol shocks are absolute)
  - ◆ JPY and CHF up 10%, NZD down 20%, AUD down 15% against USD, Latam down 10% to 20%, Emerging Europe down 5%-20%, Asia down 5%-20%, Vols: JPY +300%, other major currencies +100%, Latam currencies +300%, Emerging Europe and Asian currencies +100% to +300% (vol shocks are multiplicative/relative)
  - ◆ FNCL LOAS widened by 12 bp, FNCL LOAS by 14 bp. Trust IO by -157 bp and PO by +78
  - ◆ HEL AAA widens by +150 bp, BBB by +800 bp, and BBB- widens by 850 bp.
  - ◆ Alt-A OAS Drop widens by 120 bp, subprime loan by 267 bp, MTA loan and hybrid loan widen by 130 and 120 bp respectively. CMBS AAA by 36 bp, BB by 300 bp. CMBS whole loan by + 62 bp.
  - ◆ HY market down 4.6% (Ba), 9.8% (B), 7.8% (Caa and below). HY Loans down 2.3% (Ba), 4.9% (B), 6.5% (Caa and below). CDS down 5.7% (Ba), 10.3% (B), 10.5% (Caa and below). Default rate loss shocks of 0.2% (Baa), 0.75% (Ba), 1% (B), 5% (Caa and below).
  - ◆ HG 0-2y spreads widen 80%; 2-5y spreads widen 70%; 5-10y widen 55%; 10-30y widen 50%.
  - ◆ EMG spreads widen 100%.
  - ◆ Developed Markets Countries (D) - Americas -12%, Asia -7%, EMEA -14%; Emerging Markets I Countries (E1) - Americas -13%, Asia -14%, EMEA -14%; Emerging Markets II Countries (E2) - Americas -16%, Asia -14%, EMEA -17%
  - ◆ 1M Vol +69.3%, 3M Vol +40%, 6M Vol +28.3%, 9M Vol +23.1%, 1Y Vol +20%, 2Y Vol +14.1%, 3Y Vol +11.5%, 5Y Vol +8.9%
- (vol shocks are relative)

Mortgage

Credit