

AFP® Annual Conference



November 7-10, 2010 | San Antonio

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INFORMATION



Are your Financial Reports Auditor-Ready? Transparent and Independent Valuations

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About the Speakers

- Craig A. Jeffery
Strategic Treasurer – *Consultants in Treasury*
Founder and Managing Partner
- John Beattie
Spectrum Brands, Inc.
Vice President and Treasurer
- Gurpreet Banwait, CFA, FRM
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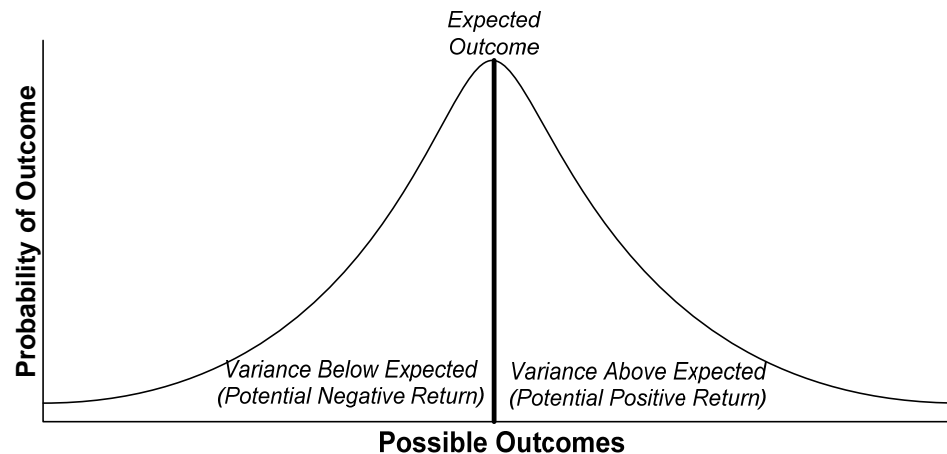
Agenda

- Risk in the Treasurer's World
 - Risk Management
 - Risk Management Tools
 - Case Study: Spectrum Brands
 - Regulation
 - 7 Steps to Optimal Valuations
 - Credit Risk
 - Scenario Analysis
-

Risk

- Risk connotes a negative impact, the variance in possible outcomes, or exposure to uncertainty
- Risk is a part of business – without risks the potential for investment returns would be minimal
- Risk is in the eye of the beholder

Illustration – Variability of Expected Outcome



Resiliency

- Risk management relates to a broader topic of resiliency:
 - Being prepared, as a business and/or a treasury department, for both the expected as well as the unexpected event / risk
 - Taleb - ‘you never know, at least in the real world, what is going to happen. Anything can happen’. But, you need to be prepared, i.e. ‘have an action plan’
 - A stop-loss
 - A threshold at which you protect yourself – *Risk Threshold*

Risk in the Treasurer's World

- **Liquidity Risk**
 - Risk to cash reserves or access to capital
 - **Credit Risk / Credit Spread Risk**
 - Risk of customer or counterparty default on payment, or change in credit standing
 - **Foreign Currency Risk**
 - Impact on cash flows or value due to volatility in exchange rates
 - **Interest Rate Risk**
 - Impact on cash flows (interest expense) or B/S value due to volatility in interest rates
 - **Commodity / Energy Price Risk**
 - *Direct / Indirect* exposure to cash flows from volatility in commodity or energy prices
 - **Enterprise Risk**
 - Considering all company risks, including operational risks, from a portfolio perspective
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Risk Management

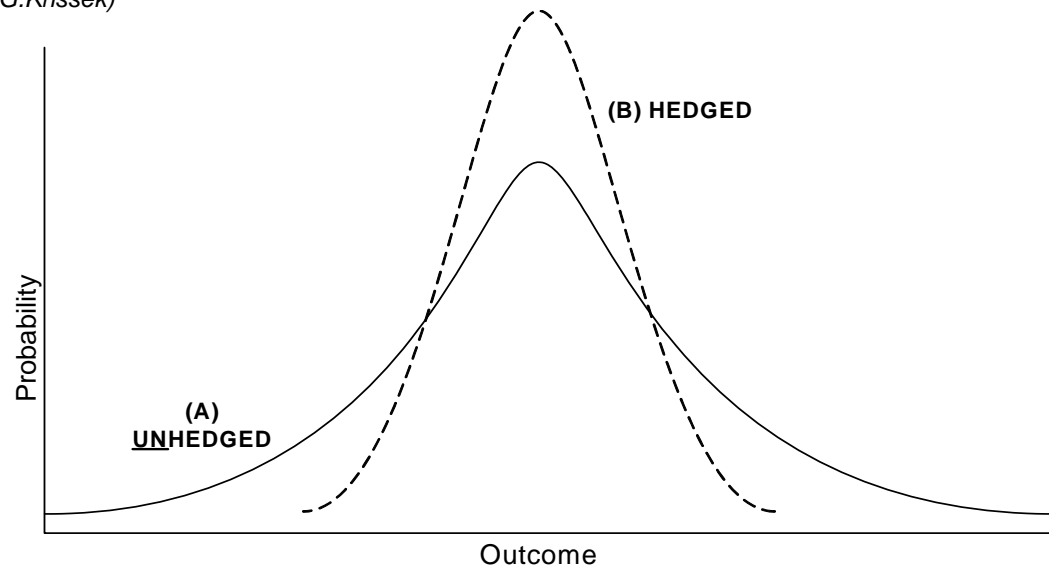
Prudent companies -

- Look at risk systematically
- Understand the risk to their value drivers and the risk appetite of their stakeholders
- Understand the value in risk management
- Approach risk management consistently throughout company – an enterprise approach
- Have a process for analyzing their risk management choices and establishing objectives
- Have established controls to ensure risk management objectives are carried out

Risk Management

'Alter the risk [a company] faces to make it equal to the risk it desires.' (G.Krissek)

- Inherent Risk
- Residual Risk



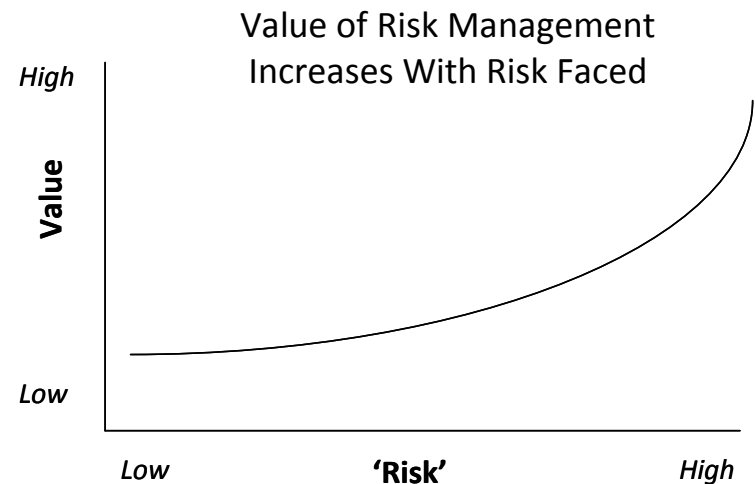
Risk management should reduce the variance in possible outcomes, mitigating surprises.

Why Companies Manage Risks

- Reduce Volatility
 - Mitigate variability in expected outcome
- Avoid Financial Distress
 - Cash flow volatility
 - Liquidity reserves
 - Investment opportunities / Risk of under-investment
 - *Gambler's Ruin*
- Provide Predictability
 - Allow management to plan
 - Evaluate management's performance

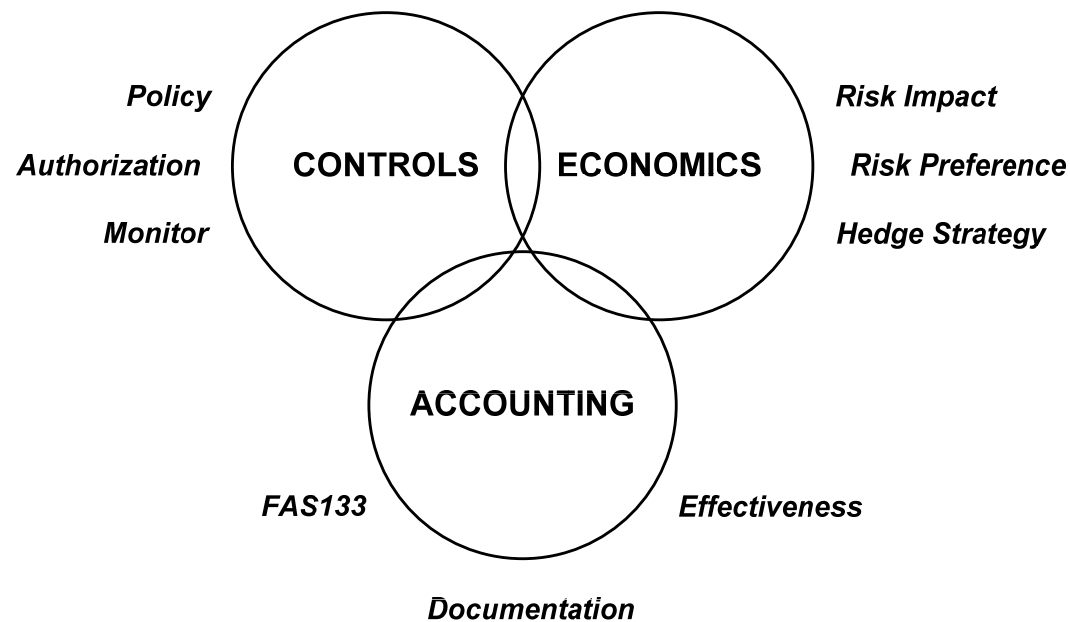
Risk Management Impacts Value

- Firm Value
 - Present value of future cash flows
- Value Drivers
 - Financial Distress
 - Predictability
- Value Drivers Impact
 - Capital structure decisions (debt vs. equity)
 - Access to capital (timing)
 - Investment decisions – ability to grow



'Risk management impacts value if it impacts management's decisions / actions.'

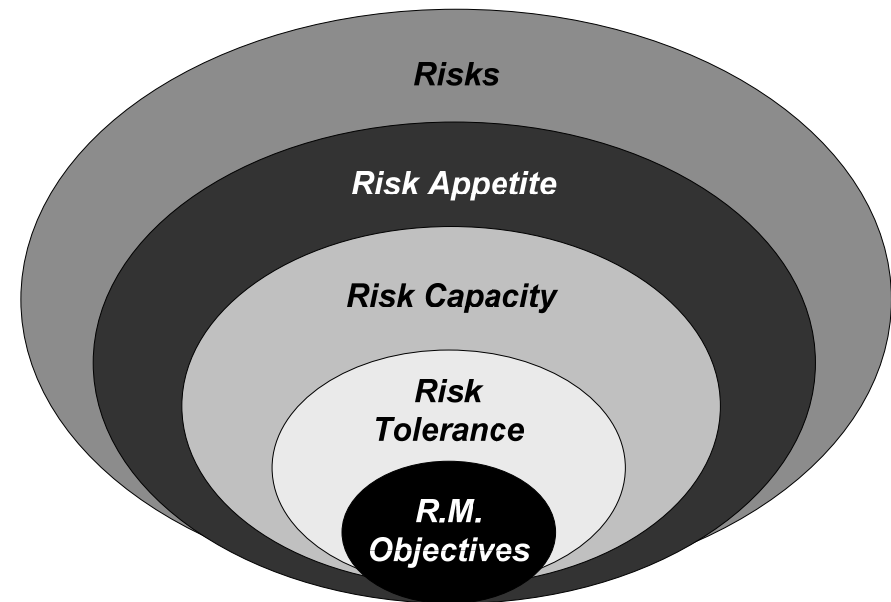
Framework For Managing Risk



Value can be destroyed if risk management / hedging not approached “correctly”.

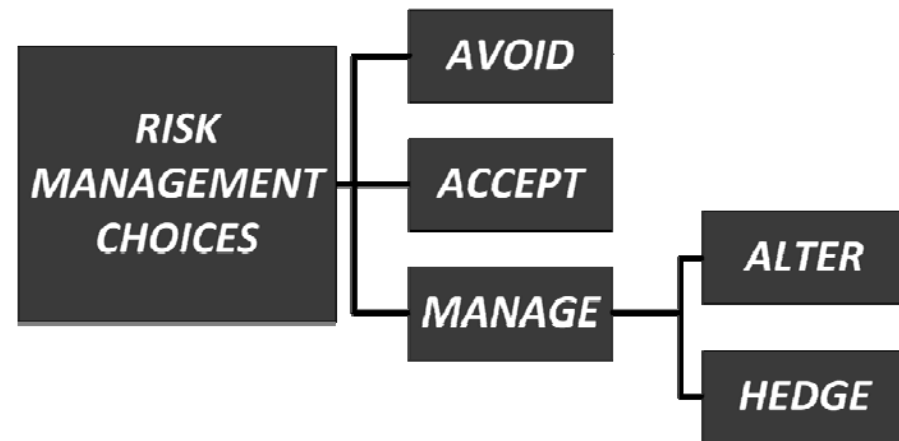
Dealing with Risk

- **Exposure**
 - How much risk do we have?
 - **Risk Appetite**
 - How much risk do we want?
 - **Risk Capacity**
 - How much risk can we endure?
 - **Risk Tolerance**
 - How much risk do we want to keep?
 - **Risk Management Objectives**
 - What are we trying to protect?
-



Choices for Managing Risk

- Avoid
 - Get out of the product / market
- Accept
 - Endure the inherent risk as is
- Manage
 - Alter
 - Change in operating strategy
 - Hedge
 - Offset residual risk with financial instruments



Risk Management Tools

- Risk Models are widely employed
- Provide visibility
- Not without their own risks
 - Wall Street and the *financial crisis*
 - An aide in decision making
 - Cannot be blamed or given credit
- You still need them!

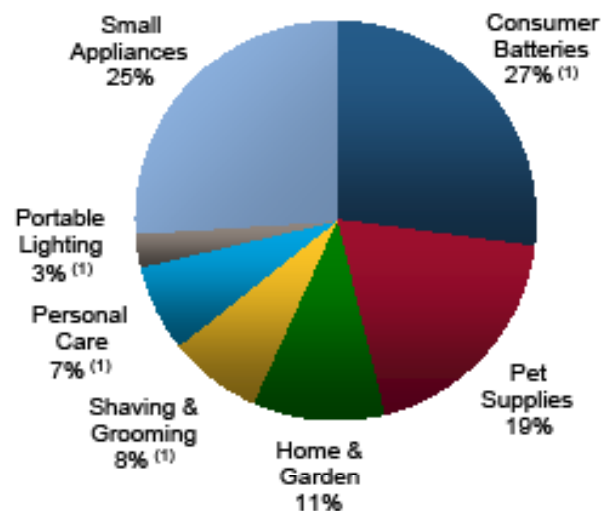
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 - Case Study: Spectrum Brands
 - Regulation
 - 7 Steps to Optimal Valuations
 - Credit Risk
 - Scenario Analysis
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About Spectrum Brands

Spectrum Brands Holdings, Inc. is a global branded consumer products company, and trades on the NYSE under the symbol SPB. SPB has a global footprint with presence in over 120 countries, and annual revenue of over \$3 billion.

Diverse Portfolio Across Attractive Categories
\$3.1 billion LTM Revenues



Note: Reflects LTM 4/4/2010 revenues.
 (1) Global Batteries and Personal Care segment.

Primary Financial Risks

- **FX**
 - Transaction / Cash flow risk
 - Non-functional currency sales / purchases
 - A/P re-measurement (FAS52)
- **IR**
 - Cash flow risk of variable interest expense
- **Commodities**
 - Cash flow risk for raw material inputs

Hedging Program

- Focus on cash flow risk
 - 1 – 15 months out
 - Keep it simple
- Hedging Instruments
 - FX forwards and average-rate options
 - Interest rate swap and floor
 - Commodity swap

Use of Tools / Models

- Hedge accounting valuations
- Fair value of financial instruments
 - Credit adjustment
- Scenario analysis / Stress testing
 - Disclosures
 - Internal analysis
- Auditor requirement / control
- Dealer price validation

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Why Conduct Independent Valuations?

- Need for better risk management practices
- Need for increased transparency
- Relying on counterparty pricing no longer acceptable
- More stringent regulations

Regulations

- Move to IFRS directly or through slow convergence
- Review of fair value and hedge regulations
 - IAS 39 (currently under review – IFRS 9)
 - FAS 133 (currently under review – Topic 815/825)
 - Topic 820 (formerly FAS 157)
 - IFRS 7

76% of companies have been impacted by the financial regulatory changes and will need to make changes to their business process

Source: FINCAD Annual Corporate Finance Survey, 2010

Valuations

7 Steps for Transparent Derivatives Valuations

- ① Independent Derivatives Valuations
- ② Market Data Source & Process
- ③ Valuation Models & Methodology
- ④ Internal Verification of Valuations
- ⑤ Valuation Logs
- ⑥ Contingency Procedures
- ⑦ Adjustments to Valuations

Operational efficiency

- Automation
- Reducing risk

1. Independent Valuations

- Relying solely on counterparty valuations not acceptable by auditors and shareholders
- Need to conduct third-party valuations to validate counterparty pricing
- Must ensure material valuations are obtained from a credible, objective and independent source

2. Market Data Source & Process

- Credible source of accurate market rates and prices
- Automated, reliable system that processes market data in the same way, everyday
- Exception reports when data falls outside set tolerances that can be investigated
- Reliable reference market data, proven analytics and explainable methods will help get to the right value
- Automation Provides
 - Increased data integrity
 - Reduced unintentional errors
 - Reduced intentional manipulation
 - Increased time savings

Curve Type	Integrated Curve
Interpolation Method	linear from discount factor
Bootstrapping Method	constant forward rate
Business Days	New York

Interest Rate Curve Data

Date	Discount Factor (Mid Market)
5/31/2010	1.0000000000
6/2/2010	0.9999918448
6/9/2010	0.999980107
6/16/2010	0.9999681323
6/23/2010	0.9999560494
7/2/2010	0.9999439480
8/2/2010	0.9999319271
8/19/2010	0.9999204451
8/19/2010	0.9999089905
12/15/2010	0.9998979906
3/19/2011	0.9998874705
3/19/2011	0.9998765029
6/19/2011	0.9998661828
6/19/2011	0.9998554900
8/19/2011	0.9998454312
8/31/2011	0.9998360210
12/31/2011	0.9998272650

3. Valuation Models & Methodology

Mathematical models

- Widely accepted and published
 - Easier to get auditor acceptance
 - Easier to explain to stakeholders
- Esoteric
 - More work needed to get acceptance
This includes more detailed testing

Documentation – the holy grail

- Fully documented models can be easily provided to stakeholders and auditors

Complete Transparency

Peak exposure and maximum peak exposure. The Peak Exposure (PE) is the maximum amount of exposure expected to occur on a future date with a high degree of statistical confidence. For example, the 95% PE is the level of potential exposure that is exceeded with 5% probability. The curve PE(t) is the peak exposure profile up to the final maturity of the swap with the counterparty. The peak exposure is defined by

$$PE(t) = \inf \{X(t) : P[PFE(t) \geq X(t)] \leq 1 - \alpha\}, \quad (2)$$

where

PFE(t) = potential future exposure for a future scenario at time t, and

α = confidence level for which we want to calculate the peak exposure.

We can interpret the PE defined this way as the first value for which the cumulative probability of the PFE exceeds 1 - α. For example, if α is 5% then the PE is the level at which the cumulative probability of the PFE exceeds 95%. To calculate this on the trinomial tree, we will generate the discrete distribution at the time step of interest, and interpolate between the cumulative probabilities which are directly above and below the 95% level.

Expected Exposure (EE) is the average of the distribution of exposures at any particular future date before the maturity of the swap. The expected exposure at time t is

$$EE(t) = E \left[\max(V(t), 0) \right] \quad (3)$$

This is calculated by generating a discrete distribution on the exposure future date.

Expected positive exposure. The Expected Positive Exposure (EPE) is the weighted average over time of the expected exposure, where the weights are the proportion that an individual expected exposure represents of the entire exposure horizon time interval. The EPE can be calculated as

$$EPE = \frac{1}{t_E} \int_0^{t_E} EE(t) dt, \quad (4)$$

where

t_E = end date of the exposure horizon.

In practice, this integral is approximated by a sum over all the tree time step dates up to the exposure horizon end date.

Effective expected exposure. Effective Expected Exposure (EEE or Effective EE) is the maximum expected exposure that occurs over the exposure horizon time interval. The EEE can be calculated as

$$EEE(t_E) = \max_{t \in [0, t_E]} (EE(t)). \quad (5)$$

In practice, this maximum is taken over all tree time step dates up to the exposure horizon end date.

Effective expected positive exposure. Effective Expected Positive Exposure (EEPE) is the weighted average over time of the effective expected exposure. The weights are the proportion that an individual exposure represents of the entire exposure horizon time interval. The EEPE can be calculated as

$$EEPE(t) = \frac{1}{t_E} \int_0^{t_E} EEE(t) dt. \quad (6)$$

Fully transparent methodology.

4. Internal Verification of Valuations

- Documented process detailing how the automated valuations will be checked
- Valuation dates and times are logged
- Tiered approval approach:
 - **Tier 1:** detailed investigation of anomalies
 - **Tier 2:** high level review of the trades with a more in-depth review of any anomalies to ensure that final explanations are accurate
- Process should be updated as necessary

5. Valuation Logs

- Log of valuation times can address questions about valuation disparities
- When portfolios contain valuations of different instruments at different times, logged valuation times can be invaluable for tracing portfolio impacts on individual securities

6. Contingency Procedures

- Service disruption:
 - Market data supply issues
 - Solution up-time
 - Personnel turnover
 - Unusual market events leading to data questions
- Process for dealing with disruptions needs to be documented
- Procedures need to be tested

7. Adjustments to Valuations

Errors

- Human error or market data issues
- Individual securities or portfolio level
- Written explanations should be recorded in a central location and subject to strict change control procedures

Market events

- Credit risk values can change over time (improve/deteriorate)
- Ensure that initial assumptions and reasoning for changes are recorded

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Credit Risk

- Credit risk is the risk of loss arising from the inability of the borrower to pay their obligations
- Multiple sources of credit risk exposure:
 - Hedging relationships with financial institutions
 - Transaction exposure when goods/services are sold on credit
- Risk reduction can be done via common steps. However, risk management can employ a variety of methods

Reducing Credit Risk

- Diversify across counterparties
- Maintain strict cap on total exposure
- Require or post collateral
- Execute a loan guarantee
- Use sophisticated hedging methods
 - Credit derivatives like credit default swaps or total return swaps

Credit Risk – Credit Value Adjustment

- 45% of corporates are required to calculate credit value adjustments (CVA)*
- Difference between the unadjusted and adjusted portfolio values
- Multiple methods available, some better than others

Credit Value Adjustment (CVA) - Primary Currency	
<u>Calculated</u>	Yes
<u>CVA Charge</u>	55.05
<u>CVA Benefit</u>	31.18
<u>Bilateral CVA</u>	23.87
<u>Adjusted Fair Value</u>	1,850.05 (USD)

*Source: FINCAD Annual Corporate Finance Survey, 2010

Credit Risk – Calculation Methods

- Bumping Curves
 - Involves *shocking* the original data by the estimated risk amount
 - For example +/- 100 bps
 - Determine if there is a material impact due to unexpected risk shocks
 - Determine what and if a hedging strategy will be successful
- Advantage
 - Simple
- Disadvantage
 - Works only for financial instruments with “one-way” cash flows

Credit Risk – Calculation Methods: Bumping Curves

- One way cash flow instruments
 - Value can ONLY either be negative or positive
- Two way cash flow instruments
 - Value can either be positive or negative
 - Depends on future movements in interest rates
 - FX forwards or swaps
- Risk could be under or over estimated

Credit Risk – Calculation Methods

- Other models are available
 - Incorporate changes in future interest rates
 - Examples – interest rate models, Monte Carlo simulation
- Advantage
 - Better job of capturing the risk particularly for derivatives
- Disadvantage
 - Market data and performance required to run the model

Credit Risk Methods

- Model-based
 - Good for simpler trades such as swaps and forwards
 - CVA calculated using other traded instruments such as European swaptions or exchange traded options
- Monte Carlo Simulation
 - Good for complex portfolios
 - Performance may be a concern

Credit Risk – Market Data

- Key calculation input is the credit spread
- Ways the spread can be found:
 - CDS Spreads
 - Loan Prices
 - Peer Group

Expected Exposures (CVA) - Primary Currency

Date of Default	Expected Exposure (Counterparty)	Default Probability (Counterparty)
6/1/2010	9.15	0.014 %
6/5/2010	196.27	0.096 %
6/12/2010	302.87	0.096 %
6/19/2010	752.06	0.095 %
6/26/2010	965.78	0.095 %
7/3/2010	1,155.47	0.095 %
7/10/2010	1,327.94	0.095 %
7/17/2010	1,487.04	0.095 %
7/24/2010	1,635.43	0.095 %
7/31/2010	1,775.00	0.095 %
8/7/2010	1,901.78	0.095 %
8/14/2010	2,017.50	0.095 %
8/21/2010	2,127.51	0.095 %
8/28/2010	2,232.49	0.095 %

Credit Risk – Summary

- Increasing in importance
- Various methods available with model-based methods capturing risk better than bumping curves
- Challenges in getting the data but there are some simple, cost effective ways to source

Scenario Analysis

- Scenario Analysis critical to analyze what could happen to your portfolio
- Current values are required input for scenario/sensitivity/what-if analysis

Trade Name	Reporting Fair Value	Scenario Reporting Fair Value	Difference
CAD Fwd - Nov 2010	815.91 (USD)	2,698.10 (USD)	1,882.19 (USD)
CAD/USD 100k FX Fwd	-5,358.98 (USD)	-7,252.34 (USD)	-1,893.37 (USD)
USD/EUR FX FWD	-44,334.62 (USD)	-41,514.43 (USD)	2,820.19 (USD)

Scenario Analysis

Objectives:

- ① Analyze portfolio to determine where risks lie
- ② Consider optimal hedging strategies to reduce that risk
- ③ Determine if there is a material impact
- ④ Execute strategies (where needed)

Scenario Analysis

- Regulations suggest a standard scenario analysis (ex. +/- 100 basis points rate movement be applied)
 - If resulting risk is material, it should be stated on your financial statements
- Higher stress situation (ex. +/- 500) can also be applied to see how portfolio could change

SUMMARY OF PORTFOLIO SCENARIO VALUATIONS

Valuation Date	Scenario Name	Fair Value	Scenario Fair Value	Difference
6/15/2010	+ 100 bps	5,964,103.92 (USD)	10,837,497.58 (USD)	4,873,393.66 (USD)
6/15/2010	USD 102% - FX	5,964,103.92 (USD)	5,982,806.59 (USD)	18,702.67 (USD)

In Summary...

- ① Transparency into your independent valuations important for:
 - Internal controls
 - Regulatory compliance & audit
- ② Multiple techniques to properly assess credit risk within your valuations
- ③ Technology can help integrate valuations into your workflow for
 - Accounting
 - Counterparty Exposures & Risks
 - Scenario Analysis

Questions

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