

Dr. Izzy Nelken
Presents



Advanced Credit Derivatives

8-10 October 2003
The Centurion Lake Hotel
Centurion

"Risk transfers, such as credit derivatives, can be a benefit if they are well managed. But they are a risk to the unwary, managed well, they can diversify a firm's risk; managed badly they will concentrate it. care is needed in the management of these innovative and complex products."

Clive Briault, head of the FSA's prudential standards division.

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Course Facilitator: Dr. Izzy Nelken

General Information

Dr Izzy Nelken is President of Super Computer Consulting, Inc. in Mundelein, Illinois. Super Computer Consulting Inc. specialises in Exotic Options, Convertible Bonds and other complex Derivatives. Izzy holds a Ph.D. in Computer Science from Rutgers University and served on the same faculty at the University of Toronto. Izzy teaches numerous courses and seminars around the world on a variety of topics including: Credit Risk Management, Credit Derivatives, Exotic Options, Financial Engineering, Volatility Correlation and Hybrid Securities. He is also a lecturer at the prestigious Mathematics Department of the University of Chicago. Izzy's seminars are known for being non mathematical. Instead they combine cutting edge analytics with real world applications and intuitive examples.

Books Published

Izzy is editor and co-author of

- *"The Handbook of Exotic Options"*, Irwin, 1996, ISBN 1-55738-904-7
- *"Option Embedded Bonds"*, Irwin, 1997, ISBN 0-7863-0818-4
- *"Volatility in the Capital Markets"*, Glenlake, 1997, ISBN 1-884964-73-7
- *"Handbook of Hybrid Securities"*, Wiley, 2000, ISBN 0-471-89114-2.

He is author of

- *"Implementing Credit Derivatives"*, McGraw Hill, 1999, ISBN 0-07-047237-8
- *"Pricing, Hedging and Trading Exotic Options"*, McGraw Hill, 1999, ISBN 0-07-047236-X.

Software Products

Super Computer Consulting Inc. currently has three software products:

- **ExoticOp!** The exotic options portfolio manager
- **ConvB++** The convertible bond and hybrid instrument software package
- **WeatherBox** for weather derivatives

Academic Information

B.Sc. in Mathematics and Computer Science, Tel Aviv University 1984

M.Sc. in Computer Science, Rutgers University, 1986

Ph.D. in Computer Science, Rutgers University, 1989

Post Doctoral Fellowship at the University of Toronto, 1989-1991

1997-Current : Lecturer, Graduate program on Mathematical Finance, Mathematics Department, University of Chicago.

Work Experience

- | | |
|--------|--|
| 1991-2 | Consultant, Algorithmics Inc. Toronto, Canada |
| 1992-4 | Consultant, Burns Fry Analytics and Marathon both in Toronto, Canada |
| 1994-7 | Consultant, Harris Investment Management, Chicago |
| 1997 | Incorporated Super Computer Consulting Inc. |

Why this workshop :

The use of Credit Derivatives to transfer and disseminate credit risk has increased enormously of late, and will continue to do so. The market has grown from \$40 billion outstanding notional value in 1996 to an estimated \$4.5 trillion by 2004. Credit Derivatives are by far the fastest growing segment of the Over the Counter derivatives market, whether it be for arbitraging, hedging or increased management of economic capital. Credit Derivatives, in their varied types and combinations, have been used successfully both to reduce risk and to gain credit exposure in an effort to increase yields. If you have been watching from a distance and are intrigued, you had better get into it head on.

Overview & objectives of the workshop:

This course will discuss and go into great detail on all aspects of structuring, pricing, risk management and trading credit derivatives. It will also include new ideas and theories on pricing, trading and hedging Credit Derivatives.

Why you should attend :

If you want to:

- Understand how to maximize the investment opportunities offered by Credit Derivatives
- Learn how experts price and hedge Credit Derivatives
- Find out how to use Credit Derivatives to enhance portfolio returns
- Gain a comprehensive insight into the Credit Derivatives market
- Greatly expand your knowledge of Credit Derivatives

Who should attend :

- Accountants and Auditors
- Asset Managers
- Banking Analysts
- Chief Financial Officers
- Corporate Strategists, Developers and Planners
- Credit Analysts
- Credit Managers
- Credit Risk Managers
- Derivative Brokers and Dealers
- Financial Analysts
- Financial Brokers
- Financial Directors
- Financial Managers
- Financial Planners
- Fixed Income traders and sales
- Fund Managers
- Legal Advisors
- Pension Fund Managers
- Portfolio Managers
- Risk Directors and Managers
- Treasury Executives, Directors and Managers

PLEASE BRING A FINANCIAL CALCULATOR WITH YOU

Course Programme

DAY ONE: 8 OCTOBER 2003
ADVANCED OPTIONS TRAINING

Session One:

Developing a pricing methodology

An introduction to option pricing theory

Two ideas

- the no arbitrage condition
- the reverse engineering principle

Developing a model for the underlying

Option value = Implicit Value + Time Premium

The no arbitrage pricing principle

- a simple European option
- introducing volatility
- a simple binomial tree with three nodes

A review of stochastic processes

- The Black Scholes insight

The Black Scholes Framework

- What are the key assumptions?
- Dealing with the assumptions behind most pricing models

- Constant volatility
- Constant interest rates
- Costless trading with no taxes or restrictions ("frictionless")
- Unlimited borrowing and lending of capital is allowed at the same risk free rate
- Unlimited short sales of securities
- No cash flows during the option's life
- Black Scholes strengths and limitations

Session Two: Pricing methods under the Black Scholes assumptions

A spreadsheet will be shown and given to the delegates which demonstrates how all these methods are equivalent

General approaches to pricing options

- Closed Form Solutions
- Numerical Techniques (Quadrature, Iterations)
- Monte Carlo approaches and variance reduction techniques
- Trees (Binomial, Trinomial and Quadrinary)
- Approximations
- The advantages and disadvantages of the various methods

Session Three: Advanced pricing abandoning the Black Scholes assumptions

In this talk, we abandon the Black Scholes assumptions and see where this leads us.

What's wrong with Black-Scholes?

Volatility smile and smirk (statistical study, before '87 vs. after '87)

Probability of a stock market crash is close to zero, yet, they do happen

Pricing using a binomial tree (review)

Tree with discrete dividends

Tree with a volatility term structure

Implied volatility trees

A method of computing Delta and Gamma with binomial trees

Using discrete difference equations instead of continuous differential equations

Mixing discrete in time and continuous in price space and vice-versa

Pricing of Asian options with binomial trees

Session Four:

Monte Carlo methods

Variance reduction techniques for Monte Carlo (Antithetic variables)

The UWAN method

Efficient generation of pseudo-random numbers (eg. quasi-Monte Carlo sequences)

The low discrepancy sequences (eg. Halton and Sobol) and how to use them

Session Five:

More on Volatility and Correlation

How do market participants estimate these unobservable quantities?

Historical volatility

- Which term should be used?

Different methods of volatility estimation

- Using closing prices
- Using daily high and low prices
- Using high, low, open and close prices
- The "Parkinson" rule
- Using exponential moving averages

Implied volatility

- Coping with the volatility "smile"

- The term structure of volatility

Measuring correlation an even tougher problem

Session Six: Developing a Framework for Accurate Risk measurement

Sensitivity analysis ("Greeks"), Scenario analysis and Value-at-risk

How to quantify the risk of an option

- Delta: sensitivity to the asset price
- Gamma: sensitivity of delta to the asset price
- Vega: sensitivity to volatility
- Theta: time premium
- Rho: sensitivity to interest rates

Scenario analysis

- Which scenarios should you look at

Visualization and graphics

The Group of Thirty (G30) recommendations

DAY TWO: 9 OCTOBER 2003
PRICING AND HEDGING OF CREDIT DERIVATIVES

Session One: Different Structures and Assessing their Risks to Ensure Successful Implementation

Default Swaps & Options

Total return swaps

Credit linked notes

Put credit spreads on asset swaps

Credit spread notes

Demystifying the risks: cross, equity, term structure, settlement, legal and basis risk

Collateralized Debt Obligations (CDO's): Collateralized

Bond Obligations (CBO's) and Collateralized Loan

Obligations (CLO's)

Downgrade options and their uses

Session Two: Examples of sample terms sheets

Examining specific terms sheets

What is the use of each structure

Why is someone purchasing the structure

How is it created

What are the benefits to the issuer

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Session 3: Credit Risk Management Systems

CreditMetrics by JP Morgan
CreditMetrics+ by Credit Suisse Financial Products
CreditPortfolioView by McKinsey and company
PortfolioManager by Moody's/KMV Corporation
Other models in development
Advantages and disadvantages of the various models
When is each model applicable?
How do these models compare to each other and how are they accepted in the market?

Session Four: The Hull, Nelken and White Implementation of the Merton Model

What is it?
How it can be used to improve on the Moody's/KMV system

Session Five: How to cope with the emerging markets?

In South Africa
- Default data is rare
- Ratings are typically not available
- Recovery data is hard to come by
- Liquidity is very slim
How to cope with these issues?

Session Six:

Working in small teams, delegates will be presented with term sheets of various deals using different products, such as credit derivatives, CBO's etc. We will analyze each deal in terms of the following:

Motivation why would someone sell the product and why would another party purchase it?
What is the view expressed by entering into the deal?
Assessing the major risks and rewards associated with each deal
Pricing how is this structure priced?
Sensitivity how will the structure perform under various scenarios(parallel shifts, flattening or steepening of the yield curve etc.) Credit spread changes? What about volatility swings?
Hedging how can the parties entering the deal hedge their exposure?
Alternatives what other structures are there which offer similar behaviour under various possible market conditions?

The latest advances in "Copula methods" will be explained

Some of the products covered

Put Credit Spread
Asset Swap Put Credit Spread
Binary Credit Linked Note
Credit Spread Collar
Dual Currency Credit Spread Note
Forward Spread Note
Coupon Enhanced Credit Linked Note
Basket Credit Linked Note
Total Return Swap

DAY THREE: 10 OCTOBER 2003 CREDIT DERIVATIVES-GETTING A DEAL DONE

Session One: Evaluating the Credit Derivatives Market and the Rationale for it's Development

Current and future potential of credit derivative market
Assessing the size of the market in terms of capacity and liquidity
The size of the market and the distribution among product lines and underlying instruments
Difficulties in developing a true "two way" market
Evaluating the potential for a secondary market in credit derivatives
Credit derivatives: the US experience
The recent credit crunch and it's implications on the market

Session Two: Exploiting the Potential: Understanding the Concept of Credit Derivatives

Defining credit derivatives
Examining the advantages of credit derivatives for:
- Addressing line constraints
- Optimizing balance sheet use and portfolio diversification
- Hedging credit derivatives
- Investment
Role of the Seller
- how to price credit derivatives
- how to market them
- how to hedge them
- managing a book

Session Three: Designing Credit Derivatives for the Benefit of the Investor

The investor's role in structuring credit derivatives
What are the structuring choices available?
How does the issuance process work?
Finding the correct risk/reward mix for each type of investor
Determining the features that would appeal to the investor
Addressing liquidity concerns
Can the investor get out of the structure after they have purchased it?

Session Four: Understanding Credit Derivatives as a Successful Tool for Credit Risk Management

Using credit derivatives to manage and securitise credit risk
Overcoming the problem of illiquid credit exposure
Applying portfolio theory to credit risk management
Successful use of credit derivatives to optimize bank loan portfolios
Credit spread options as a commitment facility
Mitigating cross-border risks with credit derivatives
Comparing and contrasting credit swaps and securitisation

Session Five: Practical Investment Applications for Credit Derivatives

Calculating relative value: how does credit risk compare with other instruments?
Uses of credit derivatives in investment:
- Yield enhancement
- Taking advantage of discrepancies in credit pricing across asset class barriers
- Modifying credit risk allocation
- Improving liquidity of core portfolio
- Synthetic loan trading

Session Six: Evaluating the Possible Limitations when Implementing Credit Derivatives

What are the typical first few deals?
How to get into more esoteric structures?
What can you tell the risk manager in order to approve your deal?
The concept of "fast track" in credit derivatives
Diversification and managing a book
Can special structures be booked "back to back"

Session Seven: Investigating the Possible Uses of Credit Derivatives

Managing the capacities of credit "buckets"
Credit derivatives for optimizing balance sheet use and portfolio diversification
Credit derivatives as an alternative to the syndicated loan market
Applications of credit derivatives for the end user

Session Eight: Implementing Successful Strategies for Profitable Trading, Hedging and Arbitraging of Credit Derivatives

Identifying the optimal dealing methods for credit derivatives:
- Who are the key players
- Assessing the role of the inter-dealer broker
- Monitoring the trends in the market
Using credit derivatives for:
- Hedging default risk
- Hedging a loan portfolio
- Hedging downgrade risk
- Implementation of propriety trading methods
- Can you hedge interest rate risk with credit derivatives?
Taking advantage of arbitrage and mis-pricing opportunities
Managing the risks: liquidity, basis, residual and correlation risks

Session Nine: Different Perspectives for Pricing Credit Derivatives

Assessing the difference between buyer versus seller
Trader's perspective:
Evaluating market liquidity
Pricing specific structures as opposed to a portfolio
Identifying risk/reward ratios
Market pricing approach
End user's perspective

Session Ten: Course ends

Conclusions
The future of the credit derivatives market

Brit Training: The Profile

The South African financial and banking sector has experienced dramatic changes in the last twenty years developing into the most competitive industry in the economic environment. Today's high risk, fast moving banking and financial sectors require institutions to have both the knowledge and skills to perform beyond the norm. Financial margins are decreasing and competitor activities increasing. Competitive edge is a short-lived commodity and institutions have to establish the means and methods to stay ahead of the rest.

Brit Training has firmly established itself as the preferred supplier of financial training for the African banking and financial sector. Brit Training has assisted numerous financial organisations to improve operational performance by increasing staff competency levels. Our programs are designed to provide up to date and consistent financial training, focusing primarily on four key areas namely:

- Banking Practice
- Risk Management
- Financial Instruments
- Treasury

Programs boast the latest developments in international best practice, regulatory updates and practices, legal ,tax and accounting laws and standards as well as the latest in cutting edge strategies and techniques.

Presented by leading professionals, practitioners and academics, Brit Trainings' programs provide both theoretical and practical exercises catering for all skill levels through our Beginner, Intermediate and Advanced level courses. Brits' programs encourage both individual and group based training and can thus be tailored to meet organisational specific needs.

Brit Training is committed to the improvement of the African banking and financial services sector training levels and aims to be the leader in training and development programs for the banking and financial services sectors throughout Africa.

Brit Training - Delegate Registration Form

Advanced Credit Derivatives

Contact Details:
Tel: (012) 665 3555 • Fax: (012) 665 3140

Physical Address: 9 Highgrove Office Park Tegel Road Highveld Techno Park Centurion	Postal Address: PO Box 12620 Clubview 0014
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Workshop Venue and Date

Code: T 145

Location:
Centurion Lake Hotel
Centurion
Tel: (012) 643 3600

Dates:
8-10 October 2003

Please complete Registration Form and fax back to:

Account Executive: Mark Maritz
On Fax: (012) 665 3140

Organisation: _____

Delegate1:
Name: _____
Position: _____
E-Mail address: _____

Delegate2:
Name: _____
Position: _____
E-Mail Address: _____

Delegate3:
Name: _____
Position: _____
E-Mail Address: _____
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Code: _____
Tel: (____) _____
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E-mail: _____
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Methods of Payment:

Please note payment must be received before the event. Payment is required within 5 working days from receipt of invoice.

Cheques to be made payable to:

Brit Training

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Padisco (Pty) Ltd T/A Brit Training
Bank: FNB
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A/C Number: 62029849786

Please quote delegate name and event codes as reference

Credit Card:

Please debit my Visa/Master/Diners Club Card

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Group Discount:

A 10% group discount applies if three or more delegates register from the same organisation.

Confirmation Details:

If you do not receive a letter outlining participation details one week prior to the event, please contact the event coordinator on (012) 665 3555.

Cancellations and Transfers:

Delegates unable to attend the event may send a substitute to the event. Cancellations received in writing two weeks before the event qualify for the event documentation and a 50% refund. Cancellations received with less than two weeks notice of the event carry full liability for payment.

Programme and speakers are confirmed at time of going to press. However, Brit Training reserves the right to alter this programme without notice.

Event Fees per Delegate

REGISTRATIONS WILL BE CONFIRMED ON RECEIPT ON FEES PAID:

Prices exclusive of 14% VAT

R 9 595.00 x _____ persons = R _____

Early Bird Price: Book and Pay by 14 July 2003

R 8 850.00 x _____ persons = R _____



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