

PI ETA CONSULTING COMPANY

Financial Derivatives Part I

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OUTLINE FOR FINANCIAL DERIVATIVES PART I PROGRAM, A 3-DAY PROGRAM

- **Historical Background**

- **Some Essential Mathematical Concepts**
 - Definition And Examples Of Derivatives
 - Definition
 - Examples
 - Some Essential Mathematical Concepts
 - Probability Theory
 - Permutations and Combinations
 - Mathematical Expectation
 - Time Value Of Money
 - Definition
 - Future Value of Money
 - Present Value of Money
 - Concept Of Fair Value And Option Premium
 - Introduction To Term Structure
 - Building a Yield Curve

- **Some Basic Interest Rate Derivative Instruments and Their Applications**
 - Different Types Of Interest Rates
 - Cash Rates
 - Spot and Forward Interest Rates
 - Interest Rate Derivatives
 - Interest Rate Futures
 - Swaps
 - Interest Rate Swaps
 - Cross Currency Swaps
 - Valuation Of Interest Rate Swaps
 - Building The Yield Curve
 - Valuation Of Cross Currency Swaps
 - Other Interest Rate Derivatives
 - Sensitivity Analysis - The Greek Alphabets
 - Hands-on Session Using The PERMIT^{®1} System

¹ **PERMIT**[®] which is an acronym for **PI ETA Risk Management Information Technology**, is a registered trademark of PI ETA Consulting Company.

➤ **Some Basic Currency Derivative Instruments And Their Applications**

- Graphical Representations of Currency Risks
- Currency Forward Contracts
 - Definitions
 - Currency Forward Buy Contract
 - Currency Forward Sell Contract
- Currency Option Contracts
 - Definitions
 - Types of Options
- Pricing Of Options
 - Black-Scholes Option Pricing Model
 - Binomial Option Pricing Model
 - Limiting Case of the Binomial Option Pricing Model
 - Put-Call Parity
 - Volatility Determination
 - The Volatility Smile Curve
- Some Common Options Terminologies
- Time Value Of Options
- Some Vanilla Option Structures
- Sensitivity Analysis And The Greek Alphabets
 - Definitions
 - Calculating the Greek Alphabets
- Hands-on Session Using The PERMIT® System

Extensions of the Above Notions to Equity and Commodity Markets Derivative Instruments

THE PERMIT^{®2} SYSTEM

The PERMIT[®] System is a multi-tier networkable enterprise Treasury & Financial Risk Management system developed entirely in-house by PETS Group working in tandem with PEER Group that supports straight-through processing of on-line treasury transactions. PERMIT[®] is the world's first comprehensive software to adopt the PET-DOG^{®3} system (on-line Help Functions and Guidance Features).

The PERMIT[®] System allows seminar participants to have a hands-on experience of the Treasury Dealing process, and facilitates the learning experience on practical aspects focusing on the dealing of financial market instruments. Using The PERMIT[®] System, participants can price, structure and deal, and experience the deal capture process, simulate portfolio management and book running, and practice risk management.

The PERMIT[®] System can assist organizations in identifying optimal solutions pertaining to their investment and/or hedging requirements.

PERMIT[®] is a powerful Treasury and Risk Management systems which utilizes the PET-DOG[®] technology to provide guidance and support to Users in assisting them throughout the Treasury Dealing process.

It provides for straight-through dealing, processing and settlements functions, and end-of-day mark-to-market reports. Other standard accounting and cash management reports are also readily available to assist the Chief Financial Officer in reporting.

The system also has the following features:

Obtain Indicative Prices of Market Instruments and Structures Easily

Users will be able to acquire indicative levels on interest rate, currency, equity and commodity instruments and structures at any time (as long as key market rate inputs are updated). These market rate inputs can be obtained through "Live Feeds" via direct linkages to external data feed providers.

Ease of Experimenting, Managing and Monitoring of Different Instrument Structures

Users can experiment with various options and derivative structures on their own before going "live". Options or derivative structures can either be "saved as structures" or "saved as deals" and retrieved at a later time for future actions, like re-valuing of a deal etc. Structures are re-usable "test" platforms, whilst deals are confirmed trades done. Deals are automatically included by PERMIT[®] in its various management reports.

² PERMIT[®] which is an acronym for PI ETA Risk Management Information Technology, is a registered trademark of PI ETA Consulting Company.

³ PET-DOG[®], which is an acronym for PI ETA Tactically-Developed On-line Guidance, is a registered trademark of PI ETA Consulting Company.

Generate Mark-To-Market and Risk Management Reports

These reports assist Users and Risk Managers in their financial risk management activities. PERMIT[®] produces mark-to-market Net Present Value and Sensitivity Analysis reports in compliance with derivative and fair value accounting standards. Value-at-Risk (VaR), Conditional-Value-at-Risk (C-VaR) and Stress Testing Reports are also available as an add-on using The PERMIT[®] Risk Manager System.

User-Friendly, Intuitive & Comprehensive ☺n-line Help System

PI ETA's PET-DOG[®] system guides users throughout the pricing, structuring and dealing processes and minimizes all possible transcriptional errors. It also provides a base guideline for Risk Management.

For more information, please contact PI ETA Engagement Resource (PEER) Group at
Tel: +65 634 100 10 | Fax: +65 634 100 20 | Email: marketing@pi-eta.com | Website: www.pi-eta.com

PROGRAM FACILITATOR

Dr. Jeffrey C. K. Lim

Ph.D., C.Sci., C.Math., FIMA, FRM, PRM, B.Fel.

Dr. Jeffrey C. K. Lim, certified Financial Risk Manager (FRM⁴) and certified Professional Risk Manager (PRM⁵), is currently the Managing Director of PI ETA Consulting Company, a Treasury & Financial Risk Management Consulting Company.

A Chartered Scientist (C.Sci.⁶), a Chartered Mathematician (C.Math.⁷) and an elected Fellow of the Institute of Mathematics and Its Applications (IMA), U.K. (FIMA), Jeff earned his Ph.D. in Stochastic Financial Modeling from the University of Cambridge in England. Jeff's research interest at Cambridge was in the area of Arbitrage Opportunities occurring in the Mispricing of Financial Options, and his original research culminated in the publication of his doctoral dissertation entitled: "Multi-period Mean-Variance Option Portfolio Strategies".

Jeff was an authorized Securities & Financial Derivatives Representative in London, having been certified by The Securities and Futures Authority (SFA) in England, where he started his career as a Derivatives Analyst with Nomura International in London, England. He subsequently joined NatWest Markets from London, England to become its Head of Currency Structured Products for South and South-East Asia. Jeff then moved to American Express Bank to become its Director of Structured Products, prior to assuming his current position.

Jeff has also contributed to the development and enhancement of talent and infrastructure for Singapore's financial center as a guest Professor at the National University of Singapore's Center for Financial Engineering, where he was responsible for the curriculum of its Master of Science degree program's core modules in Financial Derivatives and Treasury Management. In addition, Jeff has also been invited by the Nanyang Technological University and the Singapore Management University to share his expertise in a similar capacity. In recognition of Jeff's expertise and experience in the field of Treasury and Financial Risk Management, the University of New South Wales Asia appointed Jeff to be its first Adjunct Professor with the university's Division of Business and Humanities.

At PI ETA Consulting Company, Jeff was Principal Inventor in two of the Patents that the company currently holds – one in Treasury & Financial Risk Management Systems, and the other in Knowledge Management Systems.

Professionally, Jeff is a Fellow of both The Global Association of Risk Professionals (GARP), U.S.A. and The Professional Risk Managers International Association (PRMIA), U.S.A. He is also a Fellow of the Cambridge Philosophical Society, U.K. and a Life-time Member of The Cambridge Society, U.K. Jeff is also honoured to be a Fellow of The Cambridge Commonwealth Society, U.K., having been previously awarded the Cambridge Commonwealth Trust and the Shell Group of Companies Doctoral Research Scholarship.

⁴ The *Financial Risk Manager* (FRM) designation is awarded by The Global Association of Risk Professionals (GARP), U.S.A.

⁵ The *Professional Risk Manager* (PRM) designation is awarded by The Professional Risk Managers International Association (PRMIA), U.S.A.

⁶ The *Chartered Scientist* (C.Sci.) designation is awarded by The Science Council, U.K.

⁷ The *Chartered Mathematician* (C.Math.) designation is awarded by The Institute of Mathematics and Its Applications (IMA), U.K.

As a special recognition of Jeff's professional achievements, on 9 April 1999, Barons Who's Who conferred Jeff with the Barons Fellowship status, making him a Barons Fellow (B.Fel.). This award by their Charter, is limited to only the top 10% of those selected for publication in Barons Who's Who International.