

Session 2008

International  
Training in  
Financial Risk  
Management



# Risk Man age ment



IFBL

INSTITUT DE FORMATION BANCAIRE  
LUXEMBOURG



# International Training in **Financial Risk Management**

## **Quantitative Seminar**

a five-day seminar with

### **Prof. Georges HÜBNER**

Deloitte | Professor of Financial Management at HEC | Management School-University of Liège

## **International Training in Financial Risk Management**

a five-day seminar with

### **Prof. Philippe JORION**

Chancellor's Professor of Finance at the School of Business at the University of California at Irvine

# International Training in Financial Risk Management

## BACKGROUND

→ In an increasingly complex and interdependent world of financial markets and products as well as in the context of new regulatory requirements (Basel II/CRD, IFRS, ...), efficient risk control and management is a crucial element, which can determine the fate of a company and its investors.

For the seventh year in succession, IFBL and PRiM are jointly organising a high-calibre international training programme in Financial Risk Management. In the light of the experience from prior years, the programme will be divided into two parts:

- a 5-day preparatory session with Professor Georges Hübner covering concepts in mathematics, probability and statistics as applicable to financial risk management
- a 5-day course with Professor Philippe Jorion covering all key subjects relating to the GARP examination in Financial Risk Management

## PARTNERS

→ The Institute for Training in Banking, Luxembourg (IFBL), created in 1991 as the training organ of the Luxembourg Bankers' Association (ABBL, [www.abbl.lu](http://www.abbl.lu)), has the distinctive mission to prepare, create, develop and promote any training means, programmes or actions whatsoever, in the interest of the financial centre of Luxembourg.

[www.ifbl.lu](http://www.ifbl.lu)

→ PRiM, the Luxembourg association for Risk Management Professionals, founded in July 1997, exists to provide a Luxembourg-based forum for networking and exchange of information between professionals of the risk management world. The association contributes actively to the institutional and regulatory world in the Luxembourg financial sector and promotes education for the needs of risk professionals in Luxembourg.

[www.prim.lu](http://www.prim.lu)

## OBJECTIVES

- To provide high quality training in Financial Risk Management.
- To focus on regulatory requirements (Basel II/CRD, IFRS, ...).
- To prepare for the GARP FRM examination (15 November).

## PARTICIPANTS

→ Persons specialising in the fields of Finance and/or Risk Management:

- risk managers;
- treasurers and traders;
- risk analysts;
- portfolio managers;
- etc.

Participants who do not register for the preparatory week are asked to provide a short Curriculum Vitae covering their academic background and work experience. Please note that places are limited in number in order to ensure that the class size allows the provision of a high quality teaching environment.

## EXAMINATION AND CERTIFICATION

→ This training programme does not include the actual examination. Participants wishing to take an examination are required to register directly with GARP.

For more information, please consult the following website: <http://www.garp.com/frmexam/>

## METHODOLOGY

→ The programme is based on the concept of lectures alternating with workshops.

# Lecturers

## PHILIPPE JORION

→ **Philippe Jorion** is Chancellor's Professor of Finance at the School of Business at the University of California at Irvine. He has taught at UC-Berkeley, Columbia University, Northwestern University, the University of Chicago and the University of British Columbia. He holds an MBA and a Ph.D. from the University of Chicago, and a degree in engineering from the Université Libre de Bruxelles.

He has authored more than eighty publications directed at academics and practitioners on the topics of risk management and international finance. He has also written a number of books, including "Value at Risk: The New Benchmark for Managing Financial Risk," which is aimed at finance practitioners and has become a best-seller in its field. Dr. Jorion has also written the "Financial Risk Manager Handbook" to support the annual examination administered by the Global Association of Risk Professionals.

## GEORGES HÜBNER

→ **Georges Hübner** holds a Ph.D. in Management from INSEAD. He is the Deloitte Professor of Financial Management at HEC Management School - University of Liège. He is also Associate Professor of Finance at Maastricht University, Academic Expert at the Luxembourg School of Finance (University of Luxembourg), and Affiliate Professor of Finance at EDHEC (Lille & Nice). He has taught at executive and postgraduate levels in several countries in Europe, North America, Africa and Asia.

Georges Hübner has authored several books and peer-reviewed research articles in the fields of hedge funds and derivatives, and has invented the Generalized Treynor Ratio published in the Review of Finance in 2005. He was the recipient of the 2002 Iddo Sarnat Award for the best paper published in the Journal of Banking and Finance in 2001 and of the "Operational Risk & Compliance Achievement Award 2006" for the Best Academic Paper on operational risk, co-written with Yves Crama (HEC-University of Liège) and Jean-Philippe Peters (Deloitte Luxembourg).

# Quantitative Seminar

**BY PROF. GEORGES HÜBNER**

**PREPARATION SESSION  
FROM 6-10 OCTOBER 2008**

## **OBJECTIVE**

→ The purpose of this five-day seminar is to cover the necessary mathematics, probability and statistics concepts and techniques to follow the seminar in the best conditions, i.e. to respect its prerequisites. These tools will be reviewed with a focus on their likely applications in Financial Risk Management.

## **MATERIALS**

→ The seminar will encompass the introductory chapter of the following book

- Philippe Jorion, *Financial Risk Manager Handbook* (4<sup>th</sup> edition 2007), Wiley.

→ For the subsequent financial applications, background material can be found in the following books, which are also on the FRM study guide list: John Hull, *Options, Futures, and Other Derivatives* (5<sup>th</sup> edition, 2003), Pearson Frank Fabozzi, *Fixed Income Mathematics* (3<sup>rd</sup> edition, 1996), McGrawHill-Irwin. A complete syllabus will be distributed to seminar participants with a list of selected references.

## **PREREQUISITES**

→ A basic knowledge of mathematics and statistics is welcome. As this seminar serves as a preparation, the requirement level in quantitative proficiency is low.

## **SEMINAR OUTLINE**

### **MATHEMATICS APPLIED TO FINANCE**

- 1. Logarithms and exponentials**  
(application to interest rates and bond prices)
- 2. Derivatives and differential calculus**  
(application to bond duration)
- 3. Taylor series expansion**  
(application to bond convexity)
- 4. Integrals**  
(application to bond valuation)
- 5. Optimization**  
(application to portfolio selection)

### **PROBABILITIES**

- 1. Principles of probabilities**  
(application to stochastic dominance)
- 2. Moments of random variables**  
(application to portfolio returns)
- 3. Discrete probability functions**  
(application to derivatives pricing)
- 4. Continuous probability functions**  
(application to stock prices and returns)
- 5. Multivariate distributions**  
(application to portfolio diversification)
- 6. Convolutions and copulae**  
(application to credit and operational risk)



## STATISTICS

1. **Point estimators**  
(application to asymptotic distributions)
2. **Confidence intervals and hypothesis testing**  
(application to performance measurement)
3. **Tail estimation**  
(application to extreme losses)

## REGRESSION ANALYSIS

1. **Univariate regression**  
(application to beta measurement)
2. **OLS/GLS**  
(application to multi-factor models)
3. **Autoregressive models**  
(application to conditional variance models)
4. **Logit/probit**  
(application to default probabilities)

## CONTINUOUS TIME FINANCE

1. **State pricing**  
(application to financial binomial trees)
1. **Brownian motions and Itô processes**  
(application to financial price processes)
3. **Monte Carlo simulations**  
(application to interest rate forecasting)
4. **Risk-adjusted valuation**  
(application to option pricing)

## CAPITAL MARKETS

1. **Introduction to Derivatives**  
Valuation of forwards and futures
2. **Options**  
Valuation of options
3. **Fixed-Income Securities**  
Term structure of interest rates, fixed-income and asset-backed securities
4. **Fixed-Income Derivatives**  
FRAs, Eurodollar futures, T-Bond futures, swaps, caps, swaptions
5. **Equity, Currencies & Commodities Markets**  
Convertible bonds and warrants, stock index futures, currency swaps, commodity futures

# Financial Risk Management

**BY PROF. PHILIPPE JORION**

**PRINCIPAL SESSION  
FROM 13-17 OCTOBER 2008**

## **OBJECTIVE**

→ The purpose of this five-day seminar is to provide an overview of advanced techniques in Financial Risk Management. It will cover market, credit, operational risk, and integrated risk management, as well as complex issues facing risk managers in financial institutions. The format will involve a mix of presentations, spreadsheet examples and FRM exam questions. At the same time, the seminar will provide a preparation to the FRM examination administered on November 17.

## **MATERIALS**

→ The seminar will follow the structure of the following book, revised for 2007:

- Philippe Jorion, *Financial Risk Manager Handbook*, (4<sup>th</sup> edition), Wiley.

→ The book provides the core body of knowledge for financial risk managers. It was designed to provide support for candidates taking the Financial Risk Manager (FRM) examination administered by the Global Association of Risk Professionals.

## **PREREQUISITES**

→ Participants in the seminar should have had prior exposure to quantitative methods, derivatives and fixed income markets. At a minimum, they should have taken the equivalent of an investment class in a conventional MBA programme.

Background material can be found in the following books, which are also on the FRM study guide list:

- John Hull, *Options, Futures, and Other Derivatives* (6<sup>th</sup> edition, 2006), Prentice Hall
- Bruce Tuckman, *Fixed Income Securities*, (2<sup>nd</sup> edition, 2002), Wiley

## **SEMINAR OUTLINE**

### **MARKET RISK**

#### **1. Introduction to Market Risk**

Risk measurement methods, VAR, stress tests

#### **2. Sources of Risk**

Interest rate risk, equity risk, currency risk, commodity risk

#### **3. Hedging Linear Risk**

Hedging with futures, minimum variance hedge ratios, distributions

#### **4. Non-Linear Risk: Options**

Hedging with options, partial derivatives, distributions

#### **5. Modeling Risk Factors**

Choice of distributions, time variation in risk

#### **6. VAR Methods**

Delta-normal, historical simulation, Monte Carlo simulation

#### **7. VAR Tools: Marginal, Incremental and Component VAR**

From measuring to managing risk: assessing the effect of adding assets, real-time VAR, best hedges



## INVESTMENT RISK

- 1. Portfolio Risk Management**  
Risk and performance measurement, risk budgeting
- 2. Hedge Fund Risk Management**  
Hedge fund strategies and transparency

## CREDIT RISK

- 1. Introduction to Credit Risk**  
Drivers of Credit Risk
- 2. Measuring Actuarial Credit Risk**  
Measuring default risk from default rates and recovery rates
- 3. Measuring Credit Risk from Market Prices**  
Using bond prices and stock prices, structural (Merton) models
- 4. Credit Exposure**  
Assessing current and potential credit exposure on bonds and derivatives
- 5. Credit Derivatives**  
Credit default swaps, total return swaps
- 6. Portfolio Credit Risk Models**  
Pricing Credit Risk, measuring expected and unexpected Credit Risk, commercial models (e.g. CreditMetrics), BIS requirements

## INTEGRATED RISK

- 1. Operational Risk**  
Approaches to Operational Risk, management of Operational Risk
- 2. Integrated Risk Management**  
Best practices, controlling traders, the role of the risk manager
- 3. Challenges in Risk Management, LTCM**  
Limitations in VAR systems, effect of risk holes/traders gaming the system, dynamic hedging
- 4. Legal, Accounting, and Tax Issues**

## REGULATORY REQUIREMENTS

- 1. Regulation of Financial Institutions**  
Goals of financial regulation, systemic risk
- 2. The Basel Risk Charges**  
Basel I and Basel II charges against financial risks
- 3. The Basel Market Risk Charges**  
Basel II Market Risk Charges

In order to provide and refresh necessary tools for participants of the Financial Risk Management seminar programme under the responsibility of Prof. Philippe Jorion, the preparation session "Quantitative Seminar" by Prof. Georges Hübner will take place from 6-10 October 2008.

# Practical information

## DATES

### QUANTITATIVE SEMINAR

by Prof. Georges Hübner

→ PREPARATION SESSION  
from 6-10 October 2008

### FINANCIAL RISK MANAGEMENT

by Prof. Philippe Jorion

→ PRINCIPAL SESSION  
from 13-17 October 2008

## VENUE

→ **Centre de Formation IFBL /  
Chambre de Commerce**  
7, rue Alcide de Gasperi  
L-1615 Luxembourg

## FEE

	<b>IFBL/PRiM/ GARP Members</b>	<b>Non- members</b>
Full Seminar	EUR 4.250,- (+ 3% VAT)	EUR 5.300,- (+ 3% VAT)
Preparation Session	EUR 1.500,- (+ 3% VAT)	EUR 1.875,- (+ 3% VAT)
Principal Session	EUR 2.750,- (+ 3% VAT)	EUR 3.425,- (+ 3% VAT)

## CONDITIONS FOR CANCELLATIONS

→ The request for cancellation has to be submitted in writing. For cancellations received less than 5 days before the beginning of the programme, the full fee will be charged. If a participation is cancelled before this deadline, a cancellation fee of EUR 50,- will be charged. In case a participant is unable to attend, another person of the same company may replace her/him.

## CONTACTS

→ **Luxembourg Institute for Training in Banking**  
7, rue Alcide de Gasperi  
L-1615 Luxembourg  
Customer Service (customer@ifbl.lu)  
Tel. +352 46 50 16, Fax 46 50 19  
e-mail: customer@ifbl.lu  
www.ifbl.lu

→ **PRiM - Luxembourg Risk Management Association**  
Alain Bastin (alain.bastin@dexia-bil.com)  
Tel. +352 4590 4406  
www.prim.lu

## DEADLINE FOR REGISTRATION

→ 1<sup>st</sup> September 2008

# International Training in Financial Risk Management

## Application form

	Date	Fees Members (+ VAT 3%)	Non-members (+ VAT 3%)
<input type="checkbox"/> FULL SEMINAR		EUR 4.250,-	EUR 5.300,-
<input type="checkbox"/> PREPARATION SESSION	6-10 October 2008	EUR 1.500,-	EUR 1.875,-
<input type="checkbox"/> PRINCIPAL SESSION	13-17 October 2008	EUR 2.750,-	EUR 3.425,-

### REGISTRATION

- PROFESSIONAL (Both sections to be completed (participant and employer))**
- PRIVATE (Non-members' price)**

Participants who do not register for the preparatory week are asked to provide a short Curriculum Vitae covering their academic background and work experience.

### PARTICIPANT

<b>Surname</b>	<b>First name</b>
<b>Date of birth</b>	
<b>Address</b>	
<b>Work phone</b>	<b>Home phone</b>
<b>E-mail</b>	<b>Fax</b>

(for notification of all details)

### EMPLOYER

- Member**       **Non-member**       **GARP or PRIM Member** (please attach proof)

<b>Name</b>	
<b>Surname of Training Manager</b>	<b>First name</b>
<b>E-mail</b> (obligatory)	

(for notification of all details)

<b>Billing address</b>	
<b>Tel</b>	<b>Fax</b>

By signing the registration form, the participant declares that s/he accepts the general terms and conditions set out overleaf.

<b>Date</b>	<b>Signature</b>
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(Employer's stamp is obligatory)

**Form to be returned before 1<sup>st</sup> September 2008 by mail or by fax to:**

IFBL | 7, rue Alcide de Gasperi | L-1615 Luxembourg | Fax: 46 50 19 | E-mail: customer@ifbl.



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