

3rd International and 1st Chinese Forum on Intelligent Finance

(IFIF-III & CFIF-I)

<<Financial Risks + Global Macro + Dynamic Portfolio + Exotic Options + Forex Trading>>

26.-28. February 2009, Siyuan Building, Chinese Academy of Science

No. 55 East Road, Zhongguancun, Beijing, China

Co-Organizers:

Center for Forecasting Science, Chinese Academy of Sciences

Chinese Institute of Intelligent Finance (CIIF)

Prediction Research Centre, University of Electronic Science & Technology of China (UESTC)

Finance Research Centre of China, Southwestern University of Finance & Economics (SWUFE)

Swingtum Institute of Intelligent Finance (SIIF), Australia & China

Since its initial emergence as the subprime mortgage crisis early 2007, the current U.S. financial crisis has already wreaked havoc on the lives of millions of American people, and it threatens to put the U.S. into a recession, and consequently dragging down the economies around the world, including the Chinese ones. Financial crises of such enormous scale raise overwhelming challenges to the modern financial theories, compelling financial economists and financial investment experts to re-examine and re-think on the various basic theories of financial economics and various technical tools of financial engineering.

Intelligent finance has emerged as a new paradigm of modern finance theory after an evolution from economic finance and quantitative finance, and it is becoming the mainstream science and technology of financial investment for the 21st century. Different from the dispersed research in the traditional finance and the empirical investigations in professional finance, intelligent finance has a duality of science and engineering(including art). As a science, intelligent finance aims to understand the global financial markets as the world most complicated social complex systems of intelligent agents – risk managers, investors, traders, speculators as well as market regulators and policy makers. As an engineering and also an art, intelligent finance aims to develop consistently and nontrivially profitable trading systems that are supposed to operate in the global financial markets.

The Third International Forum on Intelligent Finance (IFIF-III 2009) is a successor to the successful First and Second International Workshop on Intelligent Finance (IWIF-I, December 2004, Melbourne; IWIF-II, July 2007, Chengdu). The participants may include finance experts, money managers, traders, analysts.

This Forum provides a precious and timely opportunity to the Chinese and international financial investment communities - financiers, experts, scholars, commercial banks, investment banks, investment funds, security brokers, forex brokers, insurance companies, oil companies, market analysts, money managers, and individual investors - to exchange ideas, insights, research results and experiences, and to learn from each other. The participants have the privilege to come to the frontiers of Intelligent Finance science and technology, overlooking at the core technology and the state of the art of international financial investment and trading with risk management, and to establish all possible research and development collaborations.

There will be the Proceedings for this conference available at or after the Forum. High-quality papers will be selected for one or two special issues of one or two international journals on finance and economics. The Forum will be followed by an advanced training course for quantitative analysts, money managers and traders from banks, funds, and other financial institutions.

Forum Co-Chairs:

- **Prof PAN Heping**, Director, Chinese Institute of Intelligent Finance, UESTC, and SWUFE
- **Prof WANG Shouyang**, Director, Center for Forecasting Science, Chinese Academy of Sciences
- **Prof ZHANG Wei**, Vice Present, Tianjin University of Finance & Economics, and Tianjin University, Deputy Director of China National Natural Science Foundation

Scientific Advisers:

- **Academician WANG Yingluo**, Chinese Academy of Science - Division of Management, School of Management, Xi'an Jiaotong University
- **Academician LU Ruqian**, Chinese Academy of Science - Division of Information Sciences, Academy of Mathematics and System Science

Forum Secretariat:

First Chinese Forum on Intelligent Finance (CFIF-I)

Chinese Institute of Intelligent Finance (CIIF)

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First Chinese Forum on Intelligent Finance - Program

26.-28. February 2009, Siyuan Building, Chinese Academy of Sciences, Beijing, China

08:00 – 09:00 Reception and Registration, Great Lecture Hall, Siyuan Building

09:00 – 12:30 Session 1 **Complex System Models of Financial Markets**

Chair: Prof PAN Heping, Opening Speech: Academician WANG Yingluo & LU Ruqian

1.1 A Complex System View on the Financial and Economic Crisis

Prof Didier Sornette, Department of Management, Technology and Economics, ETH Zurich, Switzerland, Professor of Finance, Chair of Entrepreneurial Risks, Member of the Swiss Finance Institute, Co-Founder of the Competence Center for Coping with Crises in Socio-Economic Systems

1.2 Agent-based Simulation Models of Financial Markets

Prof Shu-Heng Chen, Director, Artificial Intelligence Economic Research Center, National Chengchi University, Taiwan

1.3 Financial Management and Control Based on ACP Approach: An Adaptive Complex System Mechanism

Prof WANG Feiyue, Institute of Automation, Chinese Academy of Sciences

1.4 Complexity and Asset Pricing: A View from Agent-based Computational Finance

Prof ZHANG Wei, Vice President, Tianjin University of Finance & Economics, Tianjin University, Deputy Director of China National Natural Science Foundation

12:30 – 14:00 Lunch

14:00 – 18:30 Session 2 **Intelligent Decision Analysis of Financial Investment**

Chair: Prof ZHANG Wei

2.1 TEI@I - A Methodology for Economic and Financial Prediction

Prof WANG Shouyang, Director, Center for Forecasting Science, Key Laboratory for Management, Decision and Information Systems, Chinese Academy of Sciences

2.2 An Intelligent Dynamic Portfolio Theory – Unification of Value and Strength Investing

Prof PAN Heping, Director, Chinese Institute of Intelligent Finance, Prediction Research Center of the University of Electronic Science & Technology of China (UESTC)

2.3 Exotic Options Pricing and Effective Hedging

Dr Zili Zhu, Exotic Option Pricing Manager, CSIRO Mathematical and Information Sciences, Australia

2.4 Pricing Capability of Financial Derivatives and Relations to Financial Risk Management with Reflections on the Subprime Mortgage Financial Crisis

Prof George Yuan, Director Transaction Services, Deloitte & Touche Financial Advisory Services Ltd, USA

2.5 Crude Oil Prices and Current Financial Crisis: an Intelligent Finance View

Prof Serge Hayward, Écoles Supérieures de Commerce (ESC) Dijon, France

Day 2 Friday, 27. February 2009, Great Lecture Hall, Siyuan Building

09:00 – 12:30 Session 3 **Macro and Micro Finance**

Chair: Prof WANG Shouyang

3.1 Mechanisms behind Ultra-High Frequency Trading

Prof Yi-Cheng Zhang, Director, Institute of Econophysics, Fribourg University, Switzerland
Co-Founder of Minority Game - a major part of Econophysics

3.2 On the Risk of De-globalization

Prof PAN Yingli, Antai School of Economics and Management, Shanghai Jiaotong University

3.3 A Theoretical Framework of Financial Information and Practical Challenges

Dr LI Dapeng, CIO of Shanghai Futures Exchange

3.4 Analysis of Financial Accounting Risk and Trustworthiness

Prof LIU Shiping, President, Global Business Intelligence Consulting Co. Ltd. (GBICC)

3.5 International capital reversal, economic development and domestic economic structure

Dr YIN Yuming, School of Economics & Management, UESTC

12:30 – 14:00 Lunch

14:00 – 18:00 Session 4 **Value and Strength Investing**

Chair: Prof PAN Heping

Speakers: **Chinese Institute of Intelligent Finance**

Prediction Research Center

University of Electronic Science & Technology of China (UESTC)

4.1 Non-Linear Forecasts with Parametric Modellings and Dynamical Systems: Applications in Economics and Finance

Prof. Dominique Guegan, Department of Mathematics, University of Paris1 Panthéon – Sorbonne, France

4.2 Value Investing – Financial Theory and Financial Engineering Systems

4.3 Strength Investing – Financial Theory and Financial Engineering Systems

4.4 Multilevel Trend Analysis of Stock Indexes based on Macro-Economic Indicators

4.5 Multilevel Trend Prediction of Stock Indexes based on Multilevel Process Analysis

4.6 Direct Dynamic Portfolio Theory based on Nonlinear Return Prediction

4.7 Dynamic Portfolio Optimization based on Sector Rotation Prediction

Day 3 Saturday, 28. February 2009, Great Lecture Hall, Siyuan Building

09:00 – 12:30 Session 5 **Option Pricing and Dynamic Hedging**

Chair: Prof PAN Heping

- 5.1 Semi-parametric Measurement of Risk from Non-linear and Multiple Risk Factors**
Prof Rodney Wolff, School of Mathematical Sciences, Faculty of Business, Queensland University of Technology, Australia, Program Chair Non-linear and Complex Systems Analysis, National Centre for Econometric Research
- 5.2 Option Pricing under GARCH models with Generalized Hyperbolic Innovations : A new approach with applications**
Prof. Dominique Guegan, Department of Mathematics, University of Paris1 Panthéon – Sorbonne, France
- 5.3 Optimal Selection of Hedging Instruments**
Dr T. Tarnopolskaya and Dr Z. Zhu, CSIRO Mathematical and Information Sciences, Australia
- 5.4 A Robust Hedging Strategy via CVaR Minimization**
Dr T. Tarnopolskaya and Dr Z. Zhu, CSIRO Mathematical and Information Sciences, Australia
- 5.5 The effects of Crude Oil Shocks on Stock Market Shifts Behavior: A Regime Switching Approach**
Prof Chaker Aloui & Jammazi Rania, Director, International Finance Group Tunisia, University Unis – El Manar Tunisia

12:30 – 14:00 Lunch

14:00 – 18:00 Session 6 **Forecasting of Forex Rates and Crude Oil Prices**

Chair: Prof WANG Shouyang

Speakers: Center for Forecasting Science, Chinese Academy of Sciences

- 6.1 Historical Evolution of International Exchange Rate Systems & Crude Oil Markets**
- 6.2 Bio-Inspired Business Intelligence and Its Applications**
A/Prof YU Lean, Center for Forecasting Science, Chinese Academy of Sciences
- 6.3 Integrative Forecasting Models of International Exchange Rates**
- 6.4 Forex Technical Trading Systems with or without Forecasting**
- 6.5 Integrative Forecasting Models of International Crude Oil Prices**
- 6.6 Crude Oil Spot and Futures Technical Trading System with Forecasting**
- 6.7 Risk Management of Crude Oil Products with Derivative Securities and Financial Strategies**