Advances in FinTech & Applications to Investment Solutions for Individuals

Four-University Rotating FinTech Conference
### Tuesday, April 2nd, 2019 - Palais Brongniart, Paris - France

Mass Production, Mass Customisation and Mass Distribution of Improved Retirement Solutions with Digital GBI Technology
Lionel Martellini, Professor of Finance, EDHEC Business School, and Director, EDHEC-Risk Institute

After several decades of relative inertia, a much-needed move toward dedicated investment solutions, as opposed to one-size-fits-all manager-centric investment products, has finally started. In his talk, Professor Martellini will provide news insights on the application of goal-based investing principles to the development of improved retirement solutions for individuals at various stages of their life-cycle. Lionel will also discuss the benefits and challenges related to the industrialisation of the production, customisation and distribution of these solutions via digital platforms.
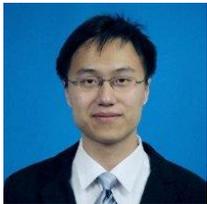
**Modelling Investor Behaviour Based on Micro-level Big Data and AI Systems**
Changle Lin, Adjunct Professor, Tsinghua University

Providing Wealth Management Solutions through KODEX ETFs and GBI Technology
Junghwan Lee, Head of ETF Solution Division, Samsung Asset Management

As the leading ETF issuer in Korea with over 100 ETFs, Samsung Asset Management is the pioneer of passive portfolio management in Korea. Samsung Asset Management is preparing wealth management solutions utilizing ETFs for institutional and retail investors. The presentation will introduce strategy building block concepts utilizing ETFs to achieve investment objectives and provide insights to GBI solutions through collaboration between the academic community and the asset management industry.
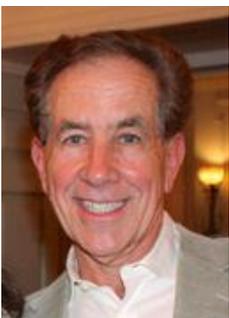
Decentralised Enterprise Risk Management: Optimal Capital Allocation for Global Diverse FinTech Organisations
John Mulvey, Professor of Operations Research and Financial Engineering, ORFE Department, Princeton University

Capital allocation has become a central issue for the fastest-growing global firms. These Tech and FinTech enterprises are taking advantage of data, machine learning/AI, and efficiencies of scale to expand geographically and business-wise. Prominent examples include Amazon's purchase of Whole Foods in the U.S. and Alibaba's growth outside China. Building on recent advances in bank stress testing and factor investing, they develop a systematic framework for capital allocation and related investment decisions. The approach possesses strong convergence properties to optimality and provides information on coincident risks and related spanning issues via state prices, driven by a set of macro and micro factors across the firm's diverse activities. The focus is to improve the probability of achieving the firm's goals, along with maximising risk-adjusted value.

What Do Large Datasets Reveal about Household Financial Decisions?
Laurent Calvet, Professor of Finance, EDHEC Business School

Over the past decade, researchers have gained access to large datasets containing highly detailed information on the finances of every household in a country. Empirical studies based on a wealth of household-level data, such as demographics, income, taxes, pensions, financial assets, real estate, and private equity holdings, are providing an increasingly detailed understanding of financial decision-making. This talk will review what we have learned about diversification, risk-taking, portfolio rebalancing, saving behavior, the risk and return characteristics of household balance sheets, and their implications for the dynamics of the distribution of wealth in society.

A Case Study on Enhancing Income Security via Financial Technologies: Fully Personalised GBI-Based Life-Time Financial planning Service for Every Korean Citizen by National Pension Service
Woo Chang Kim, Associate Professor, Industrial and Systems Engineering Department, and Head, KAIST Center for Wealth Management Technologies, Korea Advanced Institute of Science and Technology (KAIST)
Min Jeong Kim, Deputy Research Fellow, National Pension Research Institute (NPRI)
Chong-Hyun Won, Head of the Pension Management Policy Division, NPS
Joohwan Hong, Research Scientist, Veranos

FinTech represents the main changes driven by new technologies in financial sector. One of the most notable changes is that the personalised life-time wealth management services that only high-net-worth individuals were accessible are now being available for everyone by reducing the costs of services with new technologies. More importantly, it has a meaningful impact on the social welfare, or the income security. As if the universal healthcare system has significantly contributed toward longer life expectancy of South Korea, enabling personalised life-time financial planning service for everyone will allow every single citizen to be actively prepared for their financial goals including the retirement needs.

In this talk, they will illustrate how to provide fully personalised life-time financial planning service for every Korean citizen. With a vision to enhance income security at the national level, they conduct a pilot study with National Pension Service (NPS). NPS, the third largest pension plan in the world, has more than 20 million participants, covering more than 90% of economically-active Koreans. To this end, they utilise goal based investing (GBI) technology. Their GBI model is suitable for personalised wealth management, which only requires a few intuitive inputs from individuals such as wealth, investment, and consumption goals. In particular, priority levels can be assigned to consumption goals and their model assures maximum probability of achieving higher priority goals in a holistic approach. Furthermore, their model, which combines multi-stage stochastic programming and goal programming, is formulated as a linear programming problem that efficiently finds the theoretical optimal investment decision. With its simplicity, flexibility, and computational efficiency, the proposed goal-based investing model provides a new framework for automated investment management services.

FinTech: Machine Learning in the Portfolio Management Workflow
Bruno Taillardat, Global Head of Smart Beta and Factor Investing, Amundi
Giacomo Sarchioni, Data Scientist, Amundi

Machine Learning (ML) has gained a lot of traction. Significant progress has been achieved in fields such as Computer Vision and Natural Language Processing. However, is there a way to adapt these techniques and introduce them into the world of finance? During this workshop we will provide intuitive explanations of key concepts in machine learning, explain where such techniques can be applied in a traditional portfolio management workflow, and we will conclude with a live demonstration of a real-life application.

Roundtable: The Rise of Robo-Advisors: A Threat or an Opportunity for the Wealth Management Industry?

- *Robo-advisors: A threat or opportunity for investment managers?*
- *Robo-advisors and the development of investment solutions for individuals*
- *Robo-advisors and the new regulatory landscape*
- *Privacy issues and personal data: health status, purchasing patterns*
- *Educational elements*

Yuri Bender
Editor-in-Chief, Professional Wealth Management,
Financial Times

Patrick Armstrong
Senior Officer, Financial Innovation,
ESMA

Paolo Sironi
FinTech Thought Leader and Elective Member,
IBM Industry Academy

Zakaria Laguel
Founder and CEO,
WeSave

Christophe Donay
Head of Asset Allocation and Macroeconomic Research,
Pictet Wealth Management