

PROGRAM INAUGURAL CONFERENCE

June 7 & 8, 2016

Risks, uncertainty and models for Economy and Finance

Tuesday, June 7, 2016

**Location : Lecture theater, Mercure building UFR Droit-Economie-Gestion,
Université du Maine**

08:30-09:00 Welcome coffee (Mercure building)

SESSION 09:00 - 10:30

1. Michel JUILLARD, Banque de France (09:00 - 9:30)

Title : New method to solve DSGE models with occasionally binding constraints: the extended path method

Abstract:

2. Luciano CAMPI, London School of Economics (09:30 – 10:00)

Title: N-player games and mean field games with absorption

Abstract: We consider an N-player games with weakly interacting diffusions and an absorbing set. We study the existence of Nash equilibria of the corresponding mean-field game and we establish, under a non-degeneracy condition on the diffusion coefficient, that the latter provide nearly optimal strategies for the N-player games. Moreover, we provide an example of a mean-field game with absorption whose Nash equilibrium is not a good approximation of the pre-limit game. This is based on joint work with Markus Fisher.

3. Lioudmila VOSTRIKOVA, Université d'Angers (10:00 – 10:30)

Title: Lévy processes and their applications in Mathematical Finance

Abstract:

10:30-11:00 Coffee break (Mercure building)

SESSION 11:00 - 12:30

4. Abdel Malik OLA, Université d'Angers (11:00 – 11:30)

Title: L'investissement à la phase d'amorçage des start-up : une lecture psycho-cognitive de l'incertitude

Abstract:

5. Peter TANKOV, Université Paris VII (11:30 – 12:00)

Title: Optimal trading policies for wind energy producer

Abstract: We study the optimal trading policies for a wind energy producer who aims to sell the future production in the open forward, spot, intraday and adjustment markets, and who has access to imperfect dynamically updated forecasts of the future production. We construct a stochastic model for the forecast evolution and determine the optimal trading policies which are updated dynamically as new forecast information becomes available. Our results allow to quantify the expected future gain of the wind producer and to determine the economic value of the forecasts.

Peter Tankov and Zongjun Tan

6. Zacharia MOUSSA, Université de Nantes (12:00 – 12:30)

Title: Commodity returns co-movements: Fundamentals or « style » effect ?

Abstract: This paper investigates dynamic correlations both across commodities and between commodities and traditional assets, such as equities and government bonds, using the Regime Switching Dynamic Correlation (RSDC) model. There are three major findings. First, results from correlations both across commodities and between them and equities and bonds are in line with the effect theoretical findings. Before the recent financial crisis, while correlations across In-index commodities started to increase from mid-2005, correlations between them and equities and bonds remained at low level. Second, all correlations increased markedly with a regime change which coincides exactly with the demise of Lehman Brothers on September 15, 2008. We therefore suggest that the low correlation between In-index commodities and equities and bonds detected before the financial crisis should not be interpreted as a weak integration between commodity and financial markets. Integration was actually high, as revealed by the financial crisis, but was masked by the « style » effect. Finally, the new and original finding here is the temporary nature detected of the financial crisis effect on correlations which reverted to their pre-crisis level from April 2013. This highlights the impact of the financial-based factors on commodity price movements.

12:30-02:00 : Lunch reception (Mercure building)

SESSION 02:00 - 04:00

7. Stéphane CREPEY, Université d'Evry (02:00 – 02:30)**Title: *Capital Valuation Adjustment and Funding Valuation Adjustment***

Abstract: In the aftermath of the financial crisis, regulators launched in a major banking reform effort aimed at securing the financial system by raising collateralisation and capital requirements, as if the costs of capital and of funding for collateral were immaterial. The quantification by banks of market incompleteness based on various XVA metrics, in particular KVA (capital valuation adjustment) and FVA (funding valuation adjustment), is emerging as the unintended consequence of the banking reform. In this paper we reconsider XVAs in the light of a structural model of the bank. The fact that banks are intrinsically leveraged entities invalidates several of the conclusions of Modigliani-Miller theory but not all. We introduce a cost of capital framework for assessing KVA, pass it on to the bank's clients and distribute it gradually to the bank's shareholders through a dividend policy which would be sustainable even in the limit case of a portfolio held on a run-off basis, with no new trades ever entered in the future. Our FVA is defined asymmetrically since in no way we can recognise, even approximately, a positive funding benefit to excess capital at hand in the future. The fungibility of capital as a source of funding for variation margin leads to a significant FVA reduction.

8. Julien MATHERON, Banque de France (02:30 – 03:00)**Title:**

Abstract:

9. Sébastien VILLEMOT, Sciences Po-Paris & OFCE (03:00 – 03:30)**Title: *The Eurozone Debt Crisis: A New-Keynesian DSGE model with default risk***

Abstract:

10. Jean-Marc TALLON, Paris School of Economics (03:30 – 04:00)**Title: *Ambiguity and the historical equity premium***

Abstract: This paper assesses the quantitative impact of ambiguity on historically observed financial asset returns and growth rates. The single agent, in a dynamic exchange economy, treats the conditional uncertainty about the consumption and dividends next period as ambiguous. We calibrate the agent's ambiguity aversion to match *only* the first moment of the risk-free rate in data and measure the uncertainty each period on the actual, observed history of (U.S.) macroeconomic growth outcomes. Ambiguity aversion accentuates the conditional uncertainty endogenously in a dynamic way, depending on the history; e.g., it increases during recessions. We show the model implied time series of asset returns

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substantially match the first and second conditional moments of observed return dynamics. In particular, we find the time-series properties of our model generated equity premium, which may be regarded as an index measure of revealed uncertainty, relates closely to those of the macroeconomic uncertainty index recently developed in Jurado, Ludvigson, and Ng (2013).

04:00-04:30 Coffee break (Mercure building)

PLENARY SESSION 04:30 - 05:30

Nicolas BOULEAU, Ecole Nationale des Ponts et Chaussées
Risque, Hayek, Hotelling, Ito

08:00 PM : Dinner reception at Concordia Hotel Le Mans

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Wednesday, June 8, 2016

**Location : Lecture theater, Mercure building UFR Droit-Economie-Gestion,
Université du Maine**

08:30-09:00 Welcome coffee (Mercure building)

SESSION 09:00 - 10:30

1. Fabien TRIPIER, Université Lille 1 (09:00 - 9:30)

*Title : **Uncertainty, financial frictions and agents beliefs***

Abstract:

2. Caroline HILLAIRET, ENSAE (09:30 – 10:00)

*Title: **Optimal Contract with Moral Hazard for Public Private Partnerships***

Abstract: Public-Private Partnership (PPP) is a contract between a public entity and a consortium, in which the public outsources the construction and the maintenance of an equipment (hospital, university, prison...). One drawback of this contract is that the public may not be able to observe the effort of the consortium but only its impact on the social welfare of the project.

We aim to characterize the optimal contract for a PPP in this setting of asymmetric information between the two parties. This leads to a principal-agent problem with moral hazard. Considering a wider set of information for the public and using martingale arguments in the spirit of Sannikov, the maximisation problem can be reduced to a classic stochastic control problem, that is solved numerically. We then prove that for the optimal contract, the effort of the consortium is explicitly characterized. In particular, it is shown that the optimal rent is not a linear function of the effort, contrary to some models of the economic literature on PPP contracts.

This is a joint work with I. Hajjej, M. Mnif and M.Pontier

3. Thibaut MASTROLIA, Université Paris Dauphine/CMAP Ecole Polytechnique (10:00 – 10:30)
Title: Moral Hazard and Ambiguity

Abstract: Contract Theory consists in studying classical problems in Microeconomics, so-called Principal-Agent problems, having applications in many area of Economics and Finance. After an overview of this theory, we will extend the classical Holmström and Milgrom problem by adding uncertainty about the

SESSION 11:00 - 12:30

4. Amélie CHARLES, AUDENCIA Nantes (11:00 – 11:30)
Title: International Stock Return Predictability

Abstract: We investigate whether stock returns of international markets are predictable from a range of fundamentals including key financial ratios (dividend-price ratio, dividend-yield, earnings-price ratio, dividend-payout ratio), technical indicators (price pressure, change in volume), and short-term interest rates. We adopt two new alternative testing and estimation methods: the improved augmented regression method and wild bootstrapping of predictive model based on a restricted VAR form. Both methods take explicit account of endogeneity of predictors, providing bias-reduced estimation and improved statistical inference in small samples. From monthly data of 16 Asia-Pacific (including U.S.) and 21 European stock markets from 2000 to 2014, we find that the financial ratios show weak predictive ability with small effect sizes and poor out-of-sample forecasting performances. In contrast, the price pressure and interest rate are found to be strong predictors for stock return with large effect sizes and satisfactory out-of-sample forecasting performance.

5. Patrick BEISSNER, Australian National University (11:30 – 12:00)
Title: Non-Implementability of Arrow-Debreu Equilibria by Continuous Trading under Volatility Uncertainty

Abstract: In diffusion models, few suitably chosen financial securities allow to complete the market. As a consequence, the efficient allocations of static Arrow-Debreu equilibria can be attained in Radner equilibria by dynamic trading. We show that this celebrated result generically fails if there is Knightian uncertainty about volatility. A Radner equilibrium with the same efficient allocation as in an Arrow-Debreu equilibrium exists if and only if the discounted net trades of the equilibrium allocation display no ambiguity in the mean. This property is violated generically in endowments, and thus Arrow-Debreu equilibrium allocations are generically unattainable by dynamically trading few long-lived assets.

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6. Christophe DUTANG, Université du Maine (12:00 – 12:30)
Title: A unified approach of ruin theory and claim reserving

Abstract: Insurance reserving is a well-known topic for both actuaries and academics, whereas the ruin theory remains mainly the field of academics. The computation of insurance reserves being mandatory whereas ruin-related indicators are not is one of the main reasons to explain why practitioners neglect the use of ruin theory in their daily business. In the present paper, we present an efficient way to compute all the key indicators in a unified approach of ruin theory and claim reserving

12:30-02:00 : Lunch (Mercure building)

SESSION 02:00 - 03:30

7. Thomas BRAND, Cepremap (02:00 – 02:30)
Title: Risk shocks and divergence between the Euro area and the US

Abstract:

8. Waël LOUHICHI, ESSCA Angers (02:30 – 03:00)
Title: Volatility and jump spillover between crude oil market and dollar exchange rate: An intraday analysis

Abstract:

9. Frédéric KARAME, Université du Maine (03:00 – 03:30)
Title: New method to estimate DSGE models with occasionally binding constraints

Abstract:

03:30-04:00 Coffee break (Mercure building)

PLENARY SESSION 04:00 - 05:00

Rafael WOUTERS (Banque Nationale de Belgique)

Financial crisis ans DSGE models

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