Axe thématique du GdRE *« Monnaie, Banque, Finance »*
et *Cluster « Risques Financiers »*

« Des risques factoriels aux mesures de risque systémique »

Lundi 8 avril 2013
Faculté de Droit, d'Economie et de Gestion d'Orléans
(*Salle des thèses*)

9h00 - Enregistrement et accueil

9h20 - Mot de bienvenue de la Directrice du LEO : Raphaëlle BELLANDO (*Université d'Orléans et LEO*)

Session I - « Exposition aux risques et crises »

Introduction : Georges GALLAIS-HAMONNO *(Université d'Orléans et LEO*)

Président : Christian GOURIÉROUX (*CREST, Laboratoire de Finance-Assurance et Université de Toronto*)

9h30 - 10h15

- **Alain MONFORT** (*CREST, Laboratoire de Finance-Assurance, Banque de France – Financial Economics Research Service et Université de Maastricht*)

« Regime Switching and Bond Pricing »
en collaboration avec Christian GOURIÉROUX (*CREST et Université de Toronto*), Fulvio PEGORARO (*Banque de France, CREST et HEC-Lausanne*) et Jean-Paul RENNE (*Banque de France)*

10h15 - 10h45

- **Monica BILLIO** (*Université de Venise et SSAV*)

« Sovereign, Bank and Insurance Credit Spreads: Connectedness and System Networks »
en collaboration avec Mila GETMANSKY (*Université du Massachusetts*), Dale GRAY (*IMF*), Andrew W. LO (*MIT Sloan School of Management*), Robert MERTON (*MIT Sloan School of Management*) et Loriana PELIZZON (*Université de Venise, SSAV et MIT Sloan School of Management*)

10h45 - 11h00 *Pause café*

Session II - « Liquidité et (Hauts) Co-mouvements »

Présidente : Marie BRIÈRE (*AMUNDI et Université de Paris Dauphine, Université Libre de Bruxelles*)

11h00 - 11h30

- **Thierry RONCALLI** (*Lyxor Asset Management et Université d'Evry*)

« Measuring Performance of Exchange Traded Funds »
en collaboration avec Marlène HASSINE (*Lyxor Asset Management*)
Discutant : **Laurent DEVILLE** (*EDHEC, Université de Nice Sophia-Antipolis - CREDEG*)

11h30 - 12h00

- **Benjamin KLAUS** (*Banque de France*)

« Commonality in Hedge Fund Returns: Driving Factors and Implications »
en collaboration avec Matthieu BUSSIÈRE (*Banque de France*) et Marie HOEROVA *(European Central Bank)*
Discutant : **Serge DAROLLES** (*Université Paris Dauphine et CREST*)

12h00 - 12h30

- **Georges HÜBNER** (*HEC - Management School de l'Université de Liège, Université de Maastricht, et Gambit Financial Solutions*)

« Higher-moment Risk Exposures in Hedge Funds »
en collaboration avec Marie LAMBERT (*HEC - Management School de l'Université de Liège, Université de Maastricht et Solvay Brussels School of Economics and Management*) et Nicolas A. PAPAGEORGIOU (*HEC - Montréal*)
Discutant : **Yannick MALEVERGNE** (*Université de Saint-Etienne et EM-Lyon*)

☺ « **De l'idée à l'implémentation** » - **Le coin des initiatives**

12h30 - 12h50

- **André de PALMA** (*ENS Cachan, IUF et RiskDesign*) et **Nathalie PICARD** (*Université de Cergy, et RiskDesign*)

« Risque versus Perte : comparaison de produits et optimisation de portefeuille ; l'apport des solutions RiskDesign »
en collaboration avec Ruirui GUO (*RiskDesign*), Charles MAURIN (*Université de Columbia* et *RiskDesign*) et Jiali MEI (*RiskDesign*)

13h00 - 14h30 *Déjeuner au restaurant « l'Agora »*

Session III - « Risque Systémique »

Introduction : Bertrand MAILLET (*Université d'Orléans, LEO et ABN AMRO*)

Président : Christophe BOUCHER (*Université de Lorraine, CREFIGE et ABN-AMRO*)

14h30 - 15h00

- **Michaël ROCKINGER** (*SFI, HEC – Lausanne et CEPR*)

« Systemic Risk in Europe »
en collaboration avec Eric JONDEAU (*SFI et HEC Lausanne*) et Robert ENGLE (*Université de New-York*)
Discutant : **Christophe HURLIN** (*Université d'Orléans et LEO*)

15h00 - 15h30

- **Christophe PÉRIGNON** (*HEC - Paris*)

« Learning about Banks' Trading Behavior from their Risk Disclosures »
en collaboration avec Sylvain BENOIT (*Université d'Orléans et LEO*) et Christophe HURLIN (*Université d'Orléans et LEO*)
Discutant : **Sessi TOKPAVI** (*Université de Paris Ouest Nanterre La Défense et EconomiX*)

15h30 - 15h45 *Pause café*

15h45 - 16h15

- **Areski COUSIN** (*Université de Lyon 1 et ISFA*)

« On Multivariate Extensions of Value-at-Risk »
en collaboration avec Elena DI BERNARDINO (*CNAM*)
Discutant : **Christian GOURIÉROUX** (*CREST, Laboratoire de Finance-Assurance et Université de Toronto*)

16h15 - 16h45

- **Rogier QUAEDVLIEG** (*Université de Maastricht*)

« Ranking of Systemic Risk Measures »
en collaboration avec Christophe HURLIN (*Université d'Orléans et LEO*), Sébastien LAURENT (*Université de Maastricht et Université Catholique de Louvain, CORE*) et Stephan SMEEKES (*Université de Maastricht*)
Discutant : **Sylvain BENOIT** (*Université d'Orléans et LEO*)

16h45 - Le (petit) mot de la fin : Bertrand MAILLET
(Université d'Orléans, LEO et ABN AMRO)

Comité d'organisation :
Christophe BOUCHER (Université de Lorraine, CEREFIGE et ABN AMRO)
Georges GALLAIS-HAMONNO (Université d'Orléans et LEO)
Bertrand MAILLET (Université d'Orléans, LEO et ABN AMRO)
Renée-Hélène SALIÈGE (Université d'Orléans et LEO)

Responsable du Cluster « Risques financiers » : **Raphaëlle BELLANDO** (Université d'Orléans et LEO), avec le soutien de la Région Centre, du GdRE « *Monnaie, Banque*, *Finance* », d'ABN AMRO et le soutien de la Chaire "Les particuliers face au risque" de la Fondation du Risque (Dauphine-ENSAE-Groupama).

REGIME SWITCHING AND BOND PRICING

Christian GOURIEROUX, Alain MONFORT, Fulvio PEGORARO et Jean-Paul RENNE

November, 2012

ABSTRACT :

In this paper we propose an overview of the usefulness of the regime switching approach for building various kinds of bond pricing models and of the roles played by the regimes in these models. Both default-free and defaultable bonds are considered. The roles of the regimes can be to capture stochastic drifts and/or volatilities, to represent discrete values of a target rate, to incorporate business cycle or crises effects, to introduce contagion effects, to reproduce zero lower bound spells, or to evaluate the impact of standard or non-standard monetary policies. From a technical point of view, we stress the key role of Markov chains, Compound Autoregressive (Car) processes, Regime Switching Car processes and multi-horizon Laplace transforms.

Keywords : Term Structure, Regime Switching, Affine Models, Car Process, Multi-horizon Laplace Transform, Contagion, Default Risk, Monetary Policy.

JEL classification : E43, G12.

ON A NEW APPROACH FOR ANALYZING AND MANAGING MACROFINANCIAL RISKS

Robert C. MERTON, Monica BILLIO, Mila GETMANSKY, Dale GRAY, Andrew W. LO, and Loriana PELIZZON

At the fifth annual CFA Institute European Investment Conference on 19 October 2012 in Prague, Robert C. Merton gave a presentation on analyzing and managing macrofinancial risk. This article is based on his talk and on research he carried out with his coauthors.

Abstract :

Analyzing and managing macrofinancial risk has become increasingly important over time as global markets have become increasingly more connected. Specifically, analyzing and managing sovereign risk, the risks of financial institutions, and the interactions among sovereigns and financial institutions are important for investors and those responsible for financial stability. This topic is also important for those who are responsible for the traditional areas of monetary and fiscal policies because, as we see in a number of cases, monetary and fiscal policies designed to deal with things like stimulus or consumption demand can actually have unintended consequences of some magnitude for financial stability and markets. Therefore, I am going to make the case for why we need an integration of monetary, fiscal, and financial stability policies.

In light of the 1997 Asian crisis, the financial crisis of 2008–2009, and the most recent European banking and sovereign debt crisis, we know the focus of those crises was really in credit, money markets, and, to some extent, the plumbing (structure of the systems). I am going to focus my discussion on credit. One particular item of interest that many have concerns about is the accumulation of debt, particularly in Europe and the United States.

I would like to point out another class of government liabilities that do not appear on balance sheets but are real liabilities—government guarantees. These guarantees are significant; for example, in the United States, the Fed guaranteed trillions of dollars of bank and money market fund assets, including guaranteeing $360 billion of assets for a single bank, Citigroup. It is important to note that these guarantees are insurance policies that have value and are real liabilities of the government, yet they are not on the balance sheet.

MEASURING PERFORMANCE OF EXCHANGE TRADED FUNDS

Marlène HASSINE et Thierry RONCALLI

February 2013

Abstract :

Fund selection is an important issue for investors. This topic has spawned abundant academic literature. Nonetheless, most of the time, these works concern only active management, whereas many investors, such as institutional investors, prefer to invest in index funds. The tools developed in the case of active management are also not suitable for evaluating the performance of these index funds. This explains why information ratios are usually used to compare the performance of passive funds. However, we show that this measure is not pertinent, especially when the tracking error volatility of the index fund is small. The objective of an exchange traded fund (ETF) is precisely to offer an investment vehicle that presents a very low tracking error compared to its benchmark. In this paper, we propose a performance measure based on the value-at-risk framework, which is perfectly adapted to passive management and ETFs. Depending on three parameters (performance difference, tracking error volatility and liquidity spread), this efficiency measure is easy to compute and may help investors in their fund selection process. We provide some examples, and show how liquidity is more of an issue for institutional investors than retail investors.

Keywords : Passive management, index fund, ETF, information ratio, tracking error, liquidity, spread, value-at-risk.

JEL classification : G11.

COMMONALITY IN HEDGE FUND RETURNS : DRIVING FACTORS AND IMPLICATIONS

Matthieu BUSSIERE, Marie HOEROVA et Benjamin KLAUS

August 2012

Abstract :

We measure the commonality in hedge fund returns, identify its main driving factor and analyze its implications for financial stability. We find that hedge funds' commonality increased significantly from 2003 until 2006. We attribute this rise mainly to the increase in hedge funds' exposure to emerging market equities, which we identify as a common factor in hedge fund returns over this period. Our results show that funds with a high commonality were affected disproportionately by illiquidity and exhibited negative returns during the subsequent financial crisis, thereby providing little diversification benefits to the financial system and to investors.

Keywords : Hedge funds, Commonality, Risk factors, Liquidity, Financial crisis

JEL Classification : G01, G10, G11, G23

HIGHER-MOMENT RISK EXPOSURES IN HEDGE FUNDS

G. HÜBNER, M. LAMBERT and N. PAPAGEORGIOU

Abstract :

The paper singles out the key roles of US equity skewness and kurtosis in the hedge fund return generating process. We propose a conditional higher-moment model with location, trading and higher-moment factors to describe the dynamics of the Equity Hedge, Event Driven, Relative Value, and Funds of Funds styles. If the volatility, skewness and kurtosis implied in US options are used by fund managers as instruments to anticipate market movements, managers should adjust their market exposure in response to variations in these moments. We indeed show that higher-moment premia improve the conditional asset pricing model across all hedge fund styles.

Keywords : Hedge funds; Implied higher-moments; Conditioning factors

JEL classification : *G10; G12*

RISQUE VS PERTE : COMPARAISON DE PRODUITS ET OPTIMISATION DE PORTEFEUILLE : L'APPORT DES SOLUTIONS RISKDESIGN

André de PALMA, Nathalie PICARD, Ruirui GUO, Charles MAURIN, Jiali MEI

Abstract :

Plan de l'exposé

- La société RiskDesign
  - L'équipe
  - Les produits
- Le jeu des 7 erreurs
- Optimisation de portefeuille
  - Définition
  - Une indice entropique
  - Résultats
- Conclusions

SYSTEMIC RISK IN EUROPE

Robert ENGLE, Eric JONDEAU, and Michaël ROCKINGER

December 2012

Abstract :

Systemic risk may be defined as the propensity of a financial institution to be undercapitalized when the financial system as a whole is undercapitalized. Systemic risk is related to the market capitalization of the firm, its financial leverage, and the sensitivity of its equity return to market shocks. In this paper, we investigate European financial institutions and describe an econometric approach designed to measure systemic risk for non-U.S. institutions. We expand the approach developed by Brownlees and Engle (2010) to the case with several factors explaining the dynamics of financial firms returns with asynchronicity of time zones. We apply this methodology to the 196 largest European financial firms and estimate their systemic risk over the 2000-2012 period. We find that banks and insurance companies bear approximately 80 % and 20 % of the systemic risk in Europe, respectively. Over the period of our study, the countries with the highest levels of systemic risk are the U.K. and France, and the firms with the highest levels of systemic risk are Deutsche Bank and Barclays.

Keywords : Systemic Risk, Marginal Expected Shortfall, Multi-factorModel, Volatility, Correlation.

JEL Classification : C22, C23, C53.

LEARNING ABOUT BANKS' TRADING BEHAVIOR FROM THEIR RISK DISCLOSURES

Sylvain BENOIT, Christophe HURLIN et Christophe PERIGNON

April 3, 2013

Abstract :

Bank risk disclosures, such as Value-at-Risk (VaR), are affected by both changes in market volatility and bank's risk exposures. While the latter is typically unknown to the public, we show how to estimate it from public data on VaR and volatility. We propose a methodology, which we call Factor Implied Risk Exposure (FIRE), that breakdowns a change in risk disclosure into an exogenous volatility component and an endogenous risk exposure component. In a study of large US and international banks, we show that (1) the main driving force of bank risk disclosures is the shifts in risk exposures, (2) changes in risk exposure are negatively correlated with volatility changes, which suggests that banks reduce risk taking when volatility increases, and that (3) changes in risk exposures are positively correlated among banks, which is direct evidence that banks exhibit herding behavior in trading.

JEL Classification : G21, G28, G32

Keywords : Herding in Trading, (Stressed) Value-at-Risk, Regulatory Capital

ON MULTIVARIATE EXTENSIONS OF VALUE-AT-RISK

Areski COUSIN, Elena DI BERNARDINO

Abstract :

In this paper, we introduce two alternative extensions of the classical univariate Value-at-Risk (VaR) in a multivariate setting. The two proposed multivariate VaR are vector-valued measures with the same dimension as the underlying risk portfolio. The lower-orthant VaR is constructed from level sets of multivariate distribution functions whereas the upper-orthant VaR is constructed from level sets of multivariate survival functions. Several properties have been derived. In particular, we show that these risk measures both satisfy the positive homogeneity and the translation invariance property. Comparison between univariate risk measures and components of multivariate VaR are provided. We also analyze how these measures are impacted by a change in marginal distributions, by a change in dependence structure and by a change in risk level. Illustrations are given in the class of Archimedean copulas.

Keywords : Multivariate risk measures, Level sets of distribution functions, Multivariate probability integral transformation, Stochastic orders, Copulas and dependence.

RANKING OF SYSTEMIC RISK MEASURES

Christophe HURLIN, Sebastian LAURENT, Rogier QUAEDVLIEG, Stephan SMEEKES

November 9, 2012

Abstract :

We propose a bootstrap procedure that allows to test whether two firms' Systemic Risk Measures (SRMs) are equal. The test can be applied to any market-based measure. In an iterative procedure, we can identify clusters of equally systemically risky firms. We thus obtain a complete ranking of all the firms under consideration. An extensive Monte Carlo Simulation shows desirable properties. We provide an application on a sample of 60 U.S. financial institutions and show that not all fims can be disentangled.