T.G. Andersen (Northwestern, USA)
“Jump Robust Volatility Estimation” (with Dobrislav Dobrev and Ernst Schaumburg)
Abstract. “We propose a new jump robust estimator of integrated volatility as an alternative to the prevailing bipower variation estimator. The new estimator has better jump robustness properties, both theoretically and in practice, and can be made robust to “zero” returns often found in actual data. Moreover, the asymptotic theory can be derived under both the “no-jump” null as well as the “jump” alternative thereby facilitating inference about the presence of jumps.”

S. Laurent (University of Namur and CORE, Belgium)
“Robust Estimation of the Periodicity in Intraday Volatility and Intraday Jump Detection” (with Kris Boudt and Christophe Croux)
Abstract. Opening, lunch and closing of financial markets induce a periodic component in the intraday variation of volatility. We introduce non-parametric and parametric estimators for the periodic component in intraday volatility that are robust to price jumps. We show that these robust periodicity estimates can be used to increase the accuracy of intraday jump detection methods. We compare the classical and robust estimation and jump detection methods for the 5-minute EUR/USD returns. The robust periodicity estimates are lower than the classical ones on Tuesday-Friday 8:30-8:35 EST and Monday-Friday 10:00-10:05 EST. These higher values for the non-robust estimates are likely to be due to jumps. Accounting for the periodicity in intraday volatility is especially important to detect the relatively small jumps occurring at intraday times for which volatility is periodically low and to reduce the number of spurious jump detections at intraday times of periodically high volatility.

H. Zhou (Federal Reserve Board, Washington, USA)
“Bond Risk Premia and Realized Jump Risk” (with Jonathan Wright).
Abstract. We find that augmenting a regression of excess bond returns on the term structure of forward rates with a rolling estimate of the mean realized jump size identified from high-frequency bond returns using the bi-power variation technique substantially increases the R2 of the regression. This result is consistent with the setting of an unspanned risk factor in which the conditional distribution of excess bond returns is affected by a state variable that does not lie in the span of the term structure of yields or forward rates. The return predictability from augmenting the regression of excess bond returns on forward rates with the jump mean easily dominates the return predictability offered by instead augmenting the regression with options-implied volatility or realized volatility from high frequency data. The significant enhancement of bond return predictability is robust to different forecasting horizons, to using non-overlapping returns and to the choice of different window sizes in computing the jump risk measures. In an out-of-sample forecasting exercise, inclusion of the jump mean reduces the root mean square prediction error by about 40 percent.

O. Bondarenko (University of Illinois at Chicago, USA)
"Nonparametric Test of Affine Option Models"
Abstract. Affine option models are popular among both academics and practitioners, because these models are flexible, analytically tractable, and relatively easy to estimate. In this paper, we develop a novel methodology which can determine whether or not option prices are consistent with the class of affine models and, if yes, how many state variable are needed. The methodology is model-free and computationally very simple. It also allows one to extract latent state variables without need to estimate model parameters and independent of any particular specification. In the empirical application, the new methodology is implemented on the S&P 500 index options. We find that the whole class of 2-factor affine models is too restrictive for explaining the historical option prices. This rejects many canonical models, including the state-of-the-art model of Duffie, Pan, and Singleton (2000) with stochastic volatility and jumps in both price and volatility, as well as various generalizations. We argue that it might be warranted to extend affine models to three and more factors.

O. Linton (London School of Economics, UK)
“Consistent Estimation of the Risk-Return Tradeoff in the Presence of Measurement Error” (with Anish Ghosh)
Abstract. Variants of the prominent "long run risks" asset pricing models imply a linear, time-invariant relation between the equity premium and its conditional variance. We propose an approach to estimating this relation that overcomes some of the limitations of the existing literature. First, we do not require any functional form assumptions about the conditional moments. Second, the GMM approach is used to overcome the endogeneity problem inherent in the regression. Third, we correct for
the measurement error arising because of using a proxy for the latent variance. The empirical findings reveal significant time-variation in the relation that coincide with structural break dates in the market-wide price-dividend ratio.

G. Urga (Cass Business School, London, UK)
“Testing for Instability in Factor Structure of Yield Curves” (With C. Kao and D. Philip)
Abstract. A widely relied upon but a formally untested consideration is the issue of stability in factors underlying the term structure of interest rates. In testing for stability, practitioners as well as academics have employed ad-hoc techniques such as splitting the sample into a few sub-periods and determining whether the factor loadings have appeared to be similar over all sub-periods. Various authors have found mixed evidence on stability in the factors. In this paper we develop formal tests in order to evaluate the factor structure stability of the US zero coupon yield term structure. We find the factor structure of level to be unstable over the sample period considered. The slope and curvature factor structures are however found to be stable. We corroborate the literature that variances (volatility) explained by the level, slope, and curvature factors are unstable over time. We find evidence of the presence of common economic shocks affecting the level and slope factors, unlike slope and curvature factors that responded differently to economic shocks and were unaffected by any common instabilities.

F. Capie (Cass Business School and Bank of England, UK)
“Financial Crises and Their Solutions from the Past”
Abstract. Financial crises were regular features of times past. In England a solution gradually evolved in a well-behaved banking system and a lender of last resort. This all took place in a period of deregulation. There then followed a long period of remarkable stability. But then lessons were forgotten, regulation disappeared, and crises returned.

M. S. Sundaresan (Columbia University, USA)
“Credit Crunch, Actions of Central Banks & Treasury and Welfare Consequences”
Abstract. The credit crisis, which began in August 2007 is still working its way through the global economy. Initially the crisis was diagnosed as one of illiquidity, and measures were taken by central banks to deal with the perceived illiquidity crisis. These measures included: a) steep cuts in target rates, b) steep cuts in penalty rates at the discount window, c) establishment of term lending facilities, and d) broadening of collateral including mortgage-related collateral. The failure of Bear Stearns led to the Fed directly guaranteeing unprecedented levels of “problem assets” to forestall insolvency. These measures did little to ease the difficult money market conditions as exemplified by the unparalleled levels of spreads of LIBOR over overnight index swap rates. These spreads manifested the possibility of insolvency risks of some participating banks in addition to illiquidity. Despite the access to discount window at these lax terms, Lehman Brothers failed and hasty mergers were arranged to forestall further insolvencies (Merrill Lynch, Wachovia, Washington Mutual, etc.). Since August 2008, measures taken have reflected that the crisis is one about insolvency in addition to illiquidity. These later actions, which included the “conservatorship” of some GSEs, access to discount window for GSEs, money market guarantees, increased deposit insurance, recapitalization of banks, TARP actions of Treasury and highly coordinated efforts by central banks to flood liquidity into money markets have eased the pressures on LIBOR somewhat. The talk will outline the actions, their implications and the potential impact on tax payers.

B. Hafeez (Deutsche Bank, Global Head of FX Strategy, London, UK)
“When the Fabric of Markets is Torn: Trading in a Non-normal World”
Abstract. How the past year compares to previous market crises. Why the standard model has failed to work. How to trade in an extreme market.

N. Jenkinson (Executive Director, Financial Stability, Bank of England, UK)
“Lowering banks' funding risk: an analytical and policy framework”
Abstract. The presentation will focus on the following issues. (1) Build up and crystallisation of liquidity risk in the recent crisis. (2) Policy options to strengthen financial system resilience against this risk (would mention issues such as Special Liquidity Scheme/recent bank recapitalisation schemes). (3) Developing the analytical toolkit: An illustrative framework for understanding systemic funding risk - addressing the analytical and modelling challenges using a quantitative model of systemic stability. The first two points would cover the crisis and policy options adopted, the third would talk about how the development of systemic risk models can help to illustrate some of the key policy issues, using a model that we are developing in the Bank.
G. De Rossi (UBS Bank, UK)
“Tracking Changes in the Shape of the Portfolio Returns Distribution”
Abstract. In the past eighteen months, active quantitative strategies to manage equity portfolios have experienced unprecedented difficulties, stemming from the inability to measure risk and the apparent breakdown of common return forecasting models. Through a signal extraction procedure, we analyse the changes in the shape of the portfolio returns distribution for some of the traditional quantitative strategies. In the light of our empirical results, we assess whether the recent difficulties can be ascribed, as is widely perceived, to failures in mean variance optimisation.

E. Sentana (CEMFI, Spain)
“Multivariate Location-Scale Mixtures of Normals and Mean-Variance-Skewness Portfolio Allocation” (with Javier Mencia)
Abstract. We show that the distribution of any portfolio whose components jointly follow a location-scale mixture of normals can be characterised solely by its mean, variance and skewness. Under this distributional assumption, we derive the mean-variance-skewness frontier in closed form, and show that it can be spanned by three funds. For practical purposes, we derive a standardised distribution, provide analytical expressions for the log-likelihood score and explain how to evaluate the information matrix. Finally, we present an empirical application in which we obtain the mean-variance-skewness frontier generated by the ten Datastream US sectoral indices, and conduct spanning tests.

P. Zaffaroni (Tanaka Business School, London, UK)
“Optimal Asset Allocation with Factor Models for Large Portfolios” (with M. Hashem Pesaran).
Abstract. This paper characterizes the asymptotic behaviour, as the number of assets gets arbitrarily large, of the portfolio weights for the class of tangency portfolios belonging to the Markowitz paradigm. It is assumed that the joint distribution of asset returns is characterized by a general factor model, with possibly heteroskedastic components. Under these conditions, we establish that a set of appealing properties, so far unnoticed, characterize traditional Markowitz portfolio trading strategies. First, we show that the tangency portfolios fully diversify the risk associated with the factor component of asset return innovations. Second, with respect to determination of the portfolio weights, the conditional distribution of the factors is of second-order importance as compared to the distribution of the factor loadings and that of the idiosyncratic components. Third, although of crucial importance in forecasting asset returns, current and lagged factors cannot be exploited to forecast the limit portfolio returns. These properties follow since tangency portfolios are asymptotically beta-neutral as the number of assets gets large. Our theoretical results also shed light on a number of issues discussed in the literature regarding the limiting properties of portfolio weights such as the diversification property and the number of dominant factors.

F. Bandi (Graduate School of Business of University of Chicago, USA)
“The Joint Pricing of Volatility and Liquidity” (with Claudia Moise and Jeff Russell)
Abstract. The cross-sectional pricing of either market volatility or market liquidity has drawn considerable attention in recent years. Despite well-documented contemporaneous correlations in their innovations, their joint pricing has hardly been investigated. The joint pricing of aggregate volatility and aggregate liquidity is the subject of this paper. Specifically, we utilize recent advances in high-frequency econometrics and classical no-arbitrage arguments to extract novel proxies for (innovations in) market variance and (innovations in) market illiquidity from a time series of high-frequency SPIDERS transaction prices. We show that both proxies are jointly negatively priced in the cross-section of daily and monthly 25 size- and value-sorted Fama-French portfolios. For our sample, we find the performance of a 3-factor model with market returns, (innovations in) market variance and (innovations in) market illiquidity to be similar to the performance of the classical Fama-French 3-factor model when pricing these portfolios.

M. Rockinger (HEC Lausanne, CH)
“The Economic Value of Distributional Timing” (with Eric Jondeau)
Abstract. It is well known that there is a significant value for investors to allocate their wealth using return and volatility forecasts, phenomena usually called market and volatility timing. In this paper, we show that distribution timing, i.e. the ability to use distribution forecasts for asset allocation, also yields a significant economic value. Considering the weekly asset allocation among the three largest international stock markets, distributional timing yields around 140 basis points per year, to be compared with an economic value of volatility timing of around 55 basis points. To control for
parameter uncertainty of the model, we cast the model into a Bayesian setting, also considering alternative samples, datasets, frequencies, as well as preference structures. In all cases, the value of distributional timing remains highly significant. Investors with a preference for skewness rationally put more weight on positively skewed assets and under-diversify their portfolio relative to mean-variance investors. Hence they will benefit from distributional timing, if they are able to predict the subsequent returns' distribution.

V. Corradi (Warwick, UK)
“Bandwidth Selection for Continuous-Time Markov Processes” (with Federico Bandi and Guillermo Moloche)

Abstract. We propose a theoretical approach to automated bandwidth choice for continuous-time Markov processes. We do so in the context of stationary and nonstationary processes of the recurrent kind. Because the rate of divergence of the process local time affects the rate of convergence of the functional estimates of the process moments, the nonstationary case, for which local time diverges at a generally unknown rate lower than T, is particularly delicate. The procedure consists of two steps. In the first stage, by invoking local gaussianity, we suggest an automated bandwidth selection method which maximizes the probability that the standardized data are a collection of normal draws. In the case of diffusions, for instance, this procedure selects a bandwidth which ensures consistency of the infinitesimal variance estimator but does not identify the drift function. Additionally, it does not ensure that the necessary rate conditions for asymptotic normality of the infinitesimal variance are violated. In the second stage, we propose tests of the hypothesis that the bandwidth is either “too small” or “too big” to satisfy all rate conditions. The suggested statistics rely on a simple randomized procedure based on the idea of conditional inference. Importantly, if the null is rejected, then the first-stage bandwidths are kept. Otherwise, the outcomes of the tests indicate whether we should select larger or smaller bandwidths. We study diffusion processes, jump-diffusion processes, as well as processes measured with error as is the case for stochastic volatility modelling by virtue of preliminary high-frequency spot variance estimates, for instance. The finite sample joint behavior of our automated bandwidth selection method, as well as that of the associated (second-step) randomized procedure, are studied via Monte Carlo simulation.

J. Russell (Graduate School of Business of University of Chicago, USA)
“Realized Volatility Forecasting in the Presence of Time-varying Noise” (with Federico M. Bandi and Chen Yang).

Abstract. Observed high-frequency financial prices can be considered as comprising two components, a true price and a market microstructure noise perturbation. It is an empirical fact that the second moment of market microstructure noise is time-varying. We study the optimal design of nonparametric variance estimators in linear forecasting models with time-varying market microstructure noise. Specifically, we discuss optimal frequency selection in the case of the classical realized variance estimator and optimal bandwidth selection in the case of kernel-type integrated variance estimators. In this setting, we show that the sampling frequencies are generally considerably lower (the bandwidths are generally considerably larger) than those that would be optimally chosen in linear forecasting models when time-variation in the second moment of the noise is unaccounted for. Conditional and unconditional frequency/bandwidth choices are discussed.

G. M. Gallo (University of Florence, Italy)
“Intra-daily Volume Modelling and Prediction for Algorithmic Trading” (with CT Brownlees and FC Cipollini)

Abstract. The explosion of algorithmic trading has been one the most recent innovations in the financial industry. Many of these algorithms consist of automated trading strategies that attempt to minimize transaction costs by optimally placing transactions orders. The key ingredient of many of these strategies is intra-daily volume forecasts. This work proposes a dynamic model for intraday volume forecasting that captures salient features of the series such a intra-daily periodicity and volume asymmetry. Results show that the proposed methodology is able to significantly outperform some of the common volume forecasting methods.

N. Shephard (Oxford, UK)
“Measuring Downside Risk - Realised Semivariance” (with Ole E Barndorff-Nielsen and Silja Kinnebrouck)

Abstract. Models of time-varying covariances are important in financial econometrics for they a the key drivers behind asset allocation, risk management and some derivative pricing problems, as well as
being a key input for hedge funds as to the degree of leverage to prudently deploy. We develop novel ways of testing vastly large dimensional models, assessing whether various commonly used constraints are empirically necessary.