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Detecting and dating possibly distinct structural breaks in the covariance structure of financial assets

Farah Daniela Mugrabi

This paper aims to identify and date contagion by accounting for possibly distinct structural breaks among the covariance structure of financial assets. We propose an efficient three-steps procedure that applies the Lagrange Multiplier test, in particular the SupLM statistic, among the DCC-GARCH model parameters. Monte Carlo experiments show that our procedure possess good power and accurately detects the location of the true breaking points. We explore contagion between the government bond and stock markets of advanced and emerging economies. Evidence of common shifts in the covariance structure coincides with the European Sovereign Debt Crisis, the Taper Tantrum originated in United States in mid-2013 and the Covid-19 pandemic.

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Oil Price Shocks and Bond Risk Premia: Evidence from a Panel of 15 Countries

Leonardo Iania, Marco Lyrio, Liana Nersisyan

We study the effect of oil price shocks on bond risk premia. Based on Baumeister and Hamilton (2019), we identify the different sources of oil price shocks using a structural vector autoregressive (SVAR) model of the global market for crude oil. These structural factors are then used as unspanned factors in an affine term structure model based on the representation of Joslin et al. (2014). This is done for a total of 15 countries. Bond risk premia of net oil-exporting countries show a reaction to the structural shocks which is often statistically significant and in line with the expectation. For oil-importing developed countries, mainly the reaction to economic activity shocks is statistically significant and with the expected sign. The results for oil-importing developing countries are most of the time not statistically significant or run counter what one would expect. Among the unspanned factors, global economic activity explains most of the variability in bond risk premia. Finally, a historical decomposition around the outbreak of the COVID-19 crisis shows a variety of patterns in the evolution of bond risk premia.

2023 / 03

Macroeconomic drivers of Inflation Expectations and Inflation Risk Premia

Jef Boeckx, Leonardo Iania, Joris Wauters

We propose a new model to decompose inflation swaps into genuine inflation expectations and risk premiums. We develop a no-arbitrage term structure model with stochastic endpoints, separating macroeconomic variables into transitory parts and long-run, economically-grounded, determinants, such as the equilibrium real interest rate and the inflation target. Our estimations deliver new insights as to how macroeconomic variables affect market-based inflation expectation measures.

2023 / 04

Message in a Bottle: Forecasting wine prices

Bernardina Algieri, Leonardo Iania, Arturo Leccadito, Giulia Meloni

Can we predict fine wine and alcohol prices? Yes, but it depends on the forecasting horizon you choose. We make this point by considering the Liv-ex Fine Wine 100 and 50 Indices, the retail and wholesale alcohol prices in the US for the period going from January 1992 to March 2022. We use rich and multifaceted datasets of economic, survey and financial variables as potential price drivers and adopt several combination/dimension reduction techniques to extract the most relevant determinants. We build a comprehensive set of models and compare forecast performances across different selling levels and alcohol categories. We show that it is possible to predict fine wine prices for horizons of twelve months and retail/wholesale alcohol prices at horizons ranging from one month to two years. Our findings stress the importance of including consumer survey data and macroeconomic factors (international factors and mature market equity risk factors) to sharpen predictions of retail/wholesale (fine wine) prices.

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What Makes Econometric Ideas Popular: The Role of Connectivity

Bertrand Candelon, Marc Joëts, Valérie Mignon

This paper aims to identify the factors contributing to the diffusion of ideas in econometrics by paying particular attention to connectivity in content and social networks. Considering a sample of 17,260 research papers in econometrics over the 1980-2020 period, we rely on Structural Topic Models to extract and categorize topics relevant to key domains in the discipline. Using a hurdle count model, we show that both content and social connectivity among the authors (i.e., social connectivity) enhance the likelihood of non-zero citation counts and play a key role in shaping the diffusion of econometric ideas. We also find that high topic connectivity augmented by robust social connectivity among authors or authoring teams further enhances econometric ideas' diffusion success.

2023 / 06

The distribution of sample mean-variance portfolio weights

Raymond Kan, Nathan Lassance, Xiaolu Wang

We present a simple stochastic representation for the joint distribution of sample estimates of three scalar parameters and two vectors of portfolio weights that characterize the minimum-variance frontier. This stochastic representation is useful for sampling observations efficiently, deriving moments in closed-form, and studying the distribution and performance of many portfolio strategies that are functions of these five variables. We also present the asymptotic joint distributions of these five variables for both the standard regime and the high-dimensional regime. Both asymptotic distributions are simpler than the finite-sample one, and the one for the high-dimensional regime, i.e., when the number of assets and the sample size go together to infinity at a constant rate, reveals the high-dimensional properties of the considered estimators. Our results extend upon [T. Bodnar, H. Dette, N. Parolya and E. Thorst ´en, Sampling distributions of optimal portfolio weights and characteristics in low and large dimensions, Random Matrices: Theory Appl. 11 (2022)].

2023 / 07

Business cycle and realized losses in the consumer credit industry

Walter Distaso, Francesco Roccazzella, Frédéric Vrins

We study the determinants of the loss given default (LGD) of consumer credit. Exploiting a dataset including more than 6 million of Italian consumer loans from 2007 to 2019, we find that macroeco- nomic and social variables significantly enhance forecasting performance both at the individual and portfolio levels, by up to 10 percentage points in terms of R2. This result is robust across forecasting exercises and model specifications. In particular, non-linear forecast combination schemes relying on neural networks are among the best performers in terms of mean absolute error, RMSE, R2, and model confidence set in every considered exercise. The relationship between the expected LGD and the macro predictors unveiled by accumulated local effects plots confirms the intuition that lower real activity, increasing cost-of-debt to GDP ratio, and greater economic uncertainty are associated with a greater LGD for consumer credit.