PROFESSIONAL INFORMATION

Aix-Marseille University
Aix-Marseille School of Economics (AMSE)
CNRS & EHESS, GREQAM (UMR-CNRS 7316)
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CURRENT POSITION

2011 – (2 Dec. 2014) ***Ph.D.*** **Fellow in Economics** , Aix-Marseille University.
Title: **Multivariate heteroskedastic modelling and financial transmission**
Supervisor: Anne PÉGUIN-FEISSOLLE
Jury: Luc BAUWENS, René GARCIA, Christophe HURLIN and Sébastien LAURENT.
Research area: Nonlinear time series econometrics and volatility models and modelling.

2014 – 2015 ***ATER***, Aix-Marseille University

VISITING

2013 (Spring) Visiting *Ph.D.* Fellow, Aarhus University (Denmark), CREATES.
Host: Timo TERÄSVIRTA.

EDUCATION

2011 ***Master of Arts*** **in Economic Analysis and Econometrics** (*honours*)
École des Hautes Études en Sciences Sociales (EHESS), GREQAM

2011 ***University Diploma***: **Methods for Research in Economics**
Aix-Marseille University, GREQAM

2006 ***Master of Arts*** **in Financial Macroeconomics and Development** (*honours*)
University of Toulon, LEAD

2004 ***Bachelor*** **of Economics**
University of Toulon

TEACHING EXPERIENCE

Teaching Assistant, Aix-Marseille University

2014 – 2015 Econometrics – Graduate

2013 – 2014 – 2015 Statistics – Undergraduate

2012 – 2013 – 2014 Artificial Neural Networks (Mini Lecture) – Graduate

2012 – 2013 Economic Analysis (Macroeconomics) – Undergraduate

2011 – 2012 Microeconomics and Principles of Economics – Undergraduate

NON-ACADEMIC EXPERIENCE

2007 – 2009 Forex Analyst – Banking Executive
Société Générale Corporate & Investment Banking, La Défense (France)
– Valuation of foreign exchange
– Spots, Swaps, Forwards, NDFs and Options
– Workshop designed to improve controls and efficiency

RESEARCH

Testing for nonlinearity in conditional (co)variances, (submit: Journal of Business & Economic Statistics).

Volatility spillovers across daytime and overnight information between China and world equity markets, with Jian HUA, (submit).

Testing the constancy of conditional correlations in multivariate GARCH-type models, with Anne PÉGUIN–FEISSOLLE, (revise and resubmit: Econometric Reviews).

Volatility transmission between US and Latin America, (submit).

CONFERENCES AND SEMINARS

2014

10th CIREQ Ph.D. Students' Conference, Montreal – Canada.

21st International Conference "Forecasting Financial Markets", Marseille – France.

31st International French Finance Association Conference, Aix-en-Provence – France.

13th International Workshop of Spatial Econometrics and Statistics, Toulon – France.

3rd International Symposium in Computational Economics and Finance, Paris – France.

Groupe de Travail en Économètrie de la Finance, Aix-en-Provence – France.

AMSE-GREQAM PhD Seminar, Marseille – France.

2013

7th International Conference on Computational and Financial Econometrics, London – UK. (Invited talk, CS75: Financial volatility and covariance modelling).

The R User Conference 2013, Albacete – Spain (declined).

CREATES – Lunch Seminar, Aarhus – Denmark.

21th Annual Symposium of the Society for Nonlinear Dynamics and Econometrics, Milan – Italy.

2012

6th International Conference on Computational and Financial Econometrics, Oviedo – Spain.

5th PhD Conference in Economics, Athens – Greece.

International Workshop on "Nonlinear and Asymmetric Models in Applied Economics", Paris – France.

AMSE-GREQAM PhD Seminar, Marseille – France.

2011

10ème Journée d'économétrie : développements récents de l'économétrie appliquée à la finance, Paris Ouest, Nanterre la Défense – France.

AMSE-GREQAM PhD Seminar, Marseille – France.

MISC. RESEARCH

Une ou des opinions publiques à l'Ouest, 2012 (in French)
with Sarra BEN-YAHMED and Aurélia TISON, under the supervision of Alain TRANNOY. Junior contribution to the 11ème rencontres économiques du cercle des économistes d'Aix-en-Provence – France.

ORGANISATION

2012 June | 11th Journées Louis-André Gérard-Varet AMSE, Marseille – France. Staff conference

SKILLS

Math & Stats : Mathematica, Matlab, Ox, R.

Other : LaTeX, MS, OSX, VBA

Languages : Français, English, Español.

REFEREE ACTIVITY

Journal of Time Series Analysis, Revue d'Économie Politique

AFFILIATION

Econometric society, AFFI, AFSE, *ims* and CFEnetwork: ET, FE and TSE

AWARDS

2011 - 2014 Doctoral Grant, French Ministry of Research

2013 Visiting PhD scholarship from Aix-Marseille School of Economics (AMSE).

RESEARCH SUMMARIES

Testing for nonlinearity in conditional (co)variances

Abstract

In this paper, we propose two Lagrange multiplier tests for nonlinearity of conditional variances and covariances in multivariate GARCH models. The null hypothesis is the scalar BEKK model in which covolatilities of time series are driven by a linear function of their own lags and lagged squared innovations. The alternative hypothesis is an extension of that model in which covolatilities are modelled by a nonlinear function in the lagged squared innovations. Moreover, we develop on the same basis two other tests robust to leverage effects. The nonlinearity is represented by an exponential or a logistic transition function. We define the asymptotic properties of the scalar BEKK and provide analytical expressions of the test statistics. We investigate the size and the power of these tests through Monte Carlo experiments, and we show empirical illustrations where in numerous cases these tests are in favour of nonlinearity in conditional covariances.

Keywords: Lagrange multiplier test, nonlinearity test, smooth transition function, scalar BEKK, multivariate GARCH.

JEL: C12, C32, C52, C58.

Testing the constancy of conditional correlations in multivariate GARCH-type models with Anne PÉGUIN-FEISSOLLE

Abstract

We introduce two multivariate constant conditional correlation tests that require little knowledge of the functional relationship determining the conditional correlations. The first test is based on artificial neural networks whose interest is that they are universal approximators. The second one is based on a Taylor expansion of each conditional correlation around a given point in a sample space. These new tests are easy to implement and can be seen as general misspecification tests of a large set of GARCH-type multivariate models. We investigate the size and the power of these tests by Monte Carlo experiments by comparing them to other constant conditional correlation tests. Moreover, we study the robustness of these tests to nonnormality by simulating some models like the $GARCH-t$ and $Beta-t-EGARCH$ models. Finally, we show some illustrative empirical examples using financial data.

Keywords: Multivariate GARCH, neural network, Taylor expansion, conditional correlation

JEL: C12, C32, C45, C52, C58

Volatility spillovers across trading and non-trading information between China and world equity markets with Jian HUA

Abstract

This paper explores the transmission of daytime trading and overnight non-trading information in terms of returns and volatilities between China and Asia, Europe and North America main stock markets. We propose a bivariate analysis with China as benchmark. By testing the constancy of the conditional correlations, we use an extended constant or dynamic conditional correlation GARCH model. The empirical findings show that across the trading information transmissions the relationships between China and Asian markets are closer than China and non-Asian markets, while through the non-trading information transmissions these relationships are inverse. The analysis provides, before the crisis, evidence of daytime volatility spillovers from Singapore and Canada to China, whereas the overnight volatility spillover effects are from China to Hong Kong, Taiwan, US and UK. During the crisis, China is clearly affected by the effect of the global financial crisis in terms of volatility spillovers. After the crisis, the China's daytime volatility spillovers are from China to Korea, from Taiwan and Singapore to China and bidirectional with Hong Kong and UK, whereas the overnight spillover effects indicate volatility spillovers from China to Hong Kong, US, Canada and UK.

Keywords: Global financial crisis, daytime returns, overnight returns, volatility spillovers, MGARCH
JEL: C32, G15.

REFERENCES

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