Virginie Terraza

Associate Professor in Financial Economics
Department of Economics and Management (DEM)
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Associate Researcher in Finance
Montpellier Recherche en Economie (MRE), University of Montpellier I, France

Education

2002 PhD in Economics: “Modélisations de la Value at Risk : une évaluation de l’approche RISKMETRICS”, University Panthéon-Assas, Paris 2.

Current and past positions

- Associate Professor, Department of Economics and Management (DEM), University of Luxembourg
- Associate Researcher and lecturer in Financial Economics, MRE University of Montpellier I (France):
  - Portfolio and Risk Management (Master 2 Finance)
  - Programming in R (Master 2 Finance)
- Lecturer Pôle Universitaire Léonard de Vinci, ESILV, Paris la défense (France)
  - Empirical Finance (Master)
- Academic Director, Professional Bachelor’s degree in Management, University of Luxembourg (2009-2012)
- Co-director CREFI-LSF (2006-2008)

Research Supervisions

- Dr. C. Toque (AFR, Post-doc 2007-2009) “the link between the rating and future performance of investment funds”
- F. Laube (AFR, PhD), (thesis defended :2011), university of Luxembourg: “An alternative approach to extreme risk management”
- M. Boissaux**, (**AFR, Ph.D. Thesis scientific member, university of Luxembourg (thesis defended: 2013): “A new optimal control formulation for conditioned portfolio optimization problems”
- F. Diogoye, Ph.D. Thesis scientific member university of Montpellier (thesis defended: 2014): “Modélisation Espace d'Etats de la Value-at-Risk
- R. Hennani, co-supervision with university Montpellier 1 (thesis defended : 2015): “Modélisations Chaos Stochastiques avec changements de régimes de la VaR : une évaluation en termes de Backtesting »
- M.A Limam, co-supervision with university Montpellier 1 (thesis defended : 2015): “Modélisation de la dynamique des rentabilités des hedge funds : dépendance, effets de persistance et problèmes d’illiquidité »
- Maria Correira (Stagiaire Master2, university of Lorraine) “analyse de données financières » (2019)
- Simon Petijean. Thesis scientific member, university of Luxembourg, “Spotting Accounting Errors in the External Audit of Investment Funds” (2019-2023)
- Mahdi Rounaghi, Research Scientist, DEM, university of Luxembourg: “Review of the Bitcoin, gold and Financial Markets during the Covid 19” (2021-2022)

Teaching

Statistics, Financial Econometrics, Financial Risk Management, Portfolio Management, Empirical Finance, programming in R.

Private/Public collaborations

- Fortis Investment Society (2004-2006): “Timing inconsistencies in the calculation of Funds of funds Net Asset Value”
- Lux Investment Advisors and Fundclass Society (2007): “the link between the rating and future performance of funds”
- BGL-BNP-Paribas (2014) : ”Les déterminants de la performance bancaire- Analyse Descriptive et Modélisation Econométrique”
- Complexité des produits et concentration des risques, Newspaper the Land, September 2011
- Comportement des banques européennes face à la crise, Newspaper, the Land, January 2015

Research Interests

Financial Econometrics, Risk Management, Banking, and financial institutions, Fund Industry.

Research Projects

- Méthodes quantitatives des risques financiers (2005-2007), UL project
- Mutual fund rating (2007) with Lux Investment society and fundclass society
- Volatilité, diversification des risques, et coûts de transaction (2007-2009), UL Project
- Banques, marchés et législations, interdépendances et mesures comparées des performances (PLAFILOI) FNR project (2007-2010), with P.H Conac and R.Blazy
- Relative performance and efficiency of investment funds (2011), with R. Razafitombo, university of Lorraine
- Analyse de données financières, with M. Clausel, university of Lorraine (2019)

Publication-Journal

- The multi-scale analysis of dynamic transmission volatility of carbon prices, with A. Nsouadi Ange, (2022) in ***Economics Bulletin***, forthcoming
- Financial ratios analysis in determination of bank performance in the German banking sector, with S. Lardic (2019) in ***International journal of economics and financial issues*** vol. 9(3), pages 22-47.
- Hedge Fund Return Dynamics: Long Memory and Regime Switching, with M. Limam and M. Terraza, (2017) in ***International journal of financial research***, vol 8, n°4
- Histogram valued data on Value at Risk measures: a symbolic approach for risk attribution with C. Toque (2014), in ***Applied Economics Letters***, vol 21, issue 17, pp 1243-1251
- A structural analysis of mutual fund performance: a comparative study for domiciliation places with H. Razafitombo (2011), *in* ***Journal of Index Investing****, vol1 n4 pp 81-91*
- The fund Synthetic Index: An alternative benchmark for mutual funds, with H. Razafitombo (2011), *in* ***Bankers Markets and Investors*** *n° 114 - September-October*
- On the efficiency of Risk measures for Funds of Hedge Funds, with F. Laube and J. Schlitz (2011), **in the *journal of derivatives and hedge funds***, *vol 17, pp 63-84*
- Time series factorial models with uncertainty measures: applications to ARMA processes and financial data, ***Communication in Statistics: Theory and methods***, with C. Toque, (2011) Volume 40, Issue 9, Pages 1533 – 1544
- The predictive power of Fund Ratings with a novel approach using uncertainty measures to analyzing risk, ***Decisions in Economics and Finance***, vol 32 issue 2, with C. Toque, (2009)

- Funds Rating: the predictive power***, Euro-Mediterranean Economics, and Finance Review***, vol 4 n4, with C. Toque, (2009)
- The Shapley decomposition for portfolio risk, ***Applied Economics Letter***, with S. Mussard, vol 15 issue 9 pp 713-715, (2008)
- New trading risk indexes: application of the Shapley value in finance, with S. Mussard, ***Economics Bulletin***, n°25 vol 3 pp 1-7, June 2007
- Time Lags in Funds of funds, ***Journal of derivatives and hedge funds*** with L. Neuberg and C. Louargant, vol 12 issue 3 Nov 2006 pp190-199 (2006)
- Parametric and Non-Parametric Measures of Volatility: Risk Estimation via the Gini decomposition and comparison with the Value-at-Risk, with S. Mussard, ***Frontiers in Finance and Economics***, vol 1 n° 2, (2004)
- Mesures de décomposition de la volatilité : une nouvelle mesure du risque par l'indice de Gini, with S. Mussard, ***Revue d'Economie Politique***, vol 4 juillet-août (2004).
- Evidence for mixed non-linearity in daily stock exchange series » with C. Kyrtsou ***Political Economy*** vol 13 pp 71-99 2003
- Volatility behavior in emerging markets: a case study of the Athens Stock Exchange, using daily and intra-daily data », with C Kyrtsou, ***European Research Studies Journal***, special issue on finance and European Integration, vol 2, n° 3-4, (2000)

Publication-Book Chapter

- Cluster Analysis for Investment funds portfolio optimization: A symbolic data approach, with C. Toque, in ***Financial Risk management and modeling, Springer,*** (2021)
- The effect of bank size on risk ratios: Implications of banks' performance, ***Procedia Economics, and Finance, Elsevier***, (2015)
- The Hazard-Adjusted Portfolio: A New Capital Allocation Scheme from an Extreme-Risk Management Perspective, with F. Laube, in Understanding investment funds: insights from performance and risk analysis ***Palgrave,*** (2013)
- VaR ranking compared to fund ratings: A symbolic data approach, with C. Toque in Understanding investment funds: insights from performance and risk analysis ***Palgrave***, (2013)
- Value at Risk, Outliers and Chaotic dynamics, ***Computational finance, and its applications***, WIT press, with C Kyrtsou (2008)
- Timing inconsistencies in the calculation of Funds Net Asset Value, ***Computational finance and its applications***, WIT press 2006 and fund expert, 1st quarter 2006, fortis investment society with L. Neuberg and C. Louargant, (2006)
- Seasonal Asymmetric persistence in volatility: an extension of GARCH models, ***Computational finance and its applications***, WIT press (2004)
- Modeling asymmetric and Seasonal effects in CAC 40 Volatility, WSEAS ***Transactions on Business and Economics***, vol. 1, pp. 162-168, (2004)

- Value at Risk: une note, Economie 1998, Revue des ***Presses Universitaires de Perpignan***, n° Economie et Econométrie des marchés financiers

Publication-Book

- Analyse des séries temporelles, 5ième édition, with R. Bourbonnais, (April, 2022), ed. **Dunod**
- Analyse Statistique pour la gestion bancaire et financière : applications avec R, with C. Toque, July 2013 ed. **De Boeck**
- Understanding Investment funds: insights from performance analysis, with H. Razafitombo, May 2013 ed. **Palgrave**
- Exchange Rates and Macroeconomics Dynamics edited in collaboration with P. Karadelouglou, February 2008, ed. **Palgrave**
- Modélisation de la Value at Risk, une évaluation du modèle Riskmetrics, octobre 2010, PhD thesis (University of Panthéon Assas, Paris) and **Editions Universitaires Européennes**.

Research Papers

- Investigating the nexus between Volatilities of Bitcoin, Gold, and American Stock Markets during the COVID-19 Pandemic: Evidence from ARMA-DCC- GARCH and NAR-NN Models , with M. Rounaghi, Aslı Boru İpek, 2022.
- Modeling and Forecasting of Multifractal Stock Market Volatility with an Elitist Evolutionary Algorithm, with S. Bekiros, M.Rounaghi, C.Salloum, M.Zadeh, 2021
- Developing sustainable cost management systems for manufacturing companies by analysis of management accounting strategies, with H Jarrar, M. Rounaghi, 2021
- Analysis of structural changes of systemically important banks, with S. Lardic, 2021
- Wavelet Dynamic Conditional Correlation GARCH model: WDCC-GARCH With A. Nsouadi, 2016
- Multiscale hedge ratio between the spot and future prices of carbon: Wavelet-based approach With A. Nsouadi, 2016
- Performance analysis of nonlinear models in risk modeling: Application to fund indices, with R Hennani and M Terraza, 2013
- On Characteristics of Regime Dynamics of Bull and Bear Markets Using High-Frequency Data, 2011, with F. Laube
- Long memory and Regime Switching Beta model For hedge fund dynamics, 2013, With M. Limam and M. Terraza, 2013
- Vers une classification objective des fonds d'investissement par une analyse symbolique d'indicateurs financiers, 2011, with C. Toque
- De la performance de la modélisation non linéaire du risqué lié aux indices de fonds, WP 2012, with R. Hennani and M. Terraza

- Mesure des risques et classification des titres d'un portefeuille à l'aide de la Valeur de Shapley, WP 2006, University of Luxembourg with S. Mussard
- Exchange rates and the steel market (with A. Sadler), WP 2005 university of Luxembourg
- VaR non-linéaire chaotique : application à la série des rentabilités de l'indice Nikkei, (with C Kyrtsou) WP 2004, university of Luxembourg
- Modélisation de la Value at Risk du CAC 40. Un essai d'amélioration de l'approche Riskmetrics par la modélisation hétéroscédastique saisonnière, WP 2003, university of Luxembourg
- Modélisation hétéroscédastique saisonnière : la Value at Risk comme critère de choix de portefeuille (with A Charles) WP 2002, LAMETA, university of Montpellier I

International conferences and seminars

- 2de Econometrics Day, MRE University of Montpellier I, June 2023 (forthcoming)
- 1st Econometrics Day, MRE, University of Montpellier I, May 2022
- 34th symposium on money, banking, and finance, Paris 5-6 July 2017
- 3 rd International Conference in Economics and Finance (IISES), Rome 14-17 April 2015: "The effect of bank size on risk ratios: Implications of banks performance".
- Les déterminants de la performance bancaire, BGL BNP PARIBAS, seminar march 2014
- 7th CSDA International Conference on COMPUTATIONAL AND FINANCIAL ECONOMETRICS (CFE'13). Senate House, University of London, UK, 14-16 December 2013: "Long memory and regime-switching Beta model for hedge fund dynamics"
- Journée d'économétrie, le 21 novembre 2012, EconomiX, université Paris 10 : "Hedge Fund Return Dynamics: Long Memory and Regime Switching"
- May 2011 International Conference, Forecasting Financial Markets, advances for exchange rates, interest rates, and asset management, Marseille May 25-27 2011. "The Hazard-Adjusted Portfolio: A New Capital Allocation Scheme from an Extreme-Risk Management Perspective"
- March 2009 IFC5 (international Finance conference), Hammamet," The fund Synthetic Index: An alternative benchmark for mutual funds"
- April 2009, EFM symposium (European Financial Management), Nantes," The fund Synthetic Index: An alternative benchmark for mutual funds"
- 15th Participation au forum de la recherche à Luxembourg avec T. Neugebaeur (UL), Luxinnovation : « présentation du CREFI et atelier sur le risk management»
- October 2008 International Conference, Forecasting Financial Markets, advances for exchange rates, interest rates, and asset management, Marseille May 22-25 2008, « Can ratings forecast fund's performance?"
- Computational Finance and its Applications, Cadix may 27-29 2008 "Value at Risk, Outliers and Chaotic dynamics"
- 28th International Symposium on Forecasting, Nice, France June, 22-25 2008, « Can ratings forecast fund's performance?"

- Sicav-Expo « le rating est-il un indicateur de la performance future ? » bourse de Paris, 29-30 mars 2007
- Applied Econometrics Association (AEA): Risk modeling, October 19-20 2006 Athens
- Computational Finance and its Applications, London June 27-29 2006, timing inconsistencies in the fund of funds Net Asset Value
- International conference, Finance Research Unit, University of Copenhagen, Copenhagen, September 1-5 2005. The Shapley decomposition for portfolio risk
- 12th International Conference, Forecasting Financial Markets, advances for exchange rates, interest rates, and asset management, Marseille 1-2-3 Juin 2005, Timing inconsistencies in the calculation of Funds Net Asset Value
- Applied Econometrics Association (AEA): Exchange rates Econometrics, Luxembourg 7 and 8 April 2005: « Exchange rates and the steel market »
- Research Seminar in Applied Economics and Management, Solvay Business School, Université Libre de Bruxelles, October 21, 2004, « Risk trading indexes: application of the Shapley value in finance,
- Conférence internationale de l'Association Française de finance (AFFI), 24-26 juin 2004 « Chaos and Non-linear Value at Risk »
- Forecasting Financial Markets advances for exchange rates, interest rates, and asset management, Paris 2-3-4 Juin 2004 «Value at Risk, Outliers and Chaotic dynamics»
- Computational Finance and its Applications, Bologne 23-26 April 2004 « Seasonal Asymmetric persistence in volatility: an extension of GARCH models »
- Association d'Econométrie Appliquée (AEA): Econometrics of stock Markets : Analysis and Prediction, Paris 1-2 avril 2004, « VaR non linéaire chaotique : Application à la série des rentabilités de l'indice NIKKEI »,
- International conference WSEAS, Vouliagmeni, Greece, December 2003, «Modelling asymmetric and Seasonal effects in CAC 40 Volatility »
- Journée d'économétrie de Paris X Nanterre, novembre 2003, « Mesures de décomposition de la volatilité : une nouvelle mesure du risque par l'indice de Gini»
- Journée d'économétrie de Paris X Nanterre, avril 2002. « Modélisations de la Value at Risk du CAC 40. Un essai d'amélioration de l'approche RISKMETRICS par la modélisation hétéroscédastique saisonnière ».
- French Association of Finance (AFFI), Strasbourg 24-25- 26 juin 2002. Modélisation hétéroscédastique saisonnière : la Value at Risk comme critère de choix de portefeuille
- Research Seminar, GEREM, University of Perpignan January 27, 1999, « La Value at Risk, une note »

Other Activities

- Co-organizer of the Econometrics Days, MRE University of Montpellier (May 2022, forthcoming June 2023)
- Member of the scientific committee and co-organizer of the Applied Econometrics Association (AEA)- Econometrics of exchange rates, April 2005, Luxembourg

- President of the scientific committee for AEA in Risk Econometrics, October 2006 Athens.
- Organizer of the Workshop Advances in theory and applied finance, CREFI-LSF, 28th April 2008
- Co-organizer of the international conference: Forecasting Financial Markets, May 27-29, 2009, Luxembourg
- Co-organizer of the Workshop on Investment Funds march 18 2011, Luxembourg
- Member of recruitment for Assistant Professors in management sciences at the University of Metz (France)

Leisures

First prize in classic guitar at the conservatory of Luxembourg, and First Prize in classic guitar at the conservatory of Montpellier, France.
Teaching activities (1996-2002): music school of Saint Vincent de Barbeyrargues, music school of Le CRES, music school of Vailhauqués.
Awards 1989: 2nd prize of the 4th international competition-guitar duos and the first prize of the public (Montélimar-France), 1er prize of the musical youths of France.

Karate (black belt)
Dance (Conservatory of Montpellier, France)