HEC. LIÈGE
Management School - Liège Université

HEC Liège offers a position as
a research and teaching assistant (PhD student)
in
quantitative methods applied to Finance (F/M)

The **Department of Finance, Accounting and Law at HEC® Liège** (Management school of the University of Liège. Belgium) is searching for a **research and teaching assistant (PhD student)** to strengthen its team in the field of **quantitative methods applied to finance**. Aside from teaching duties for advanced financial modelling classes, the successful applicant is expected to conduct a research project and write a PhD thesis on a topic related to **Regression Models for Extremes in Finance**.

Regression Models for Extremes are statistical techniques that have seen enormous developments in the past years. Today, they allow us to study the dependence structure among extreme events that are of interest for regulators, policy makers and the financial sector at large (e.g. cyber-attacks, multimillion frauds, financial crises and contagion, etc.). However, numerous **methodological challenges** are still unsolved, making it hard for practitioners to rely on these tools. Therefore, the first goal of this PhD thesis will be to tackle some of these issues, in particular model selection, dimension reduction, non-stationarity and causality questions. Extensions of techniques like the LASSO, neural-networks, copula, GLM will be considered to solve these problems. The second objective consists in applying these findings to the study of **systemic and cyber risks.** The Great Financial Crisis as well as the advent of the Internet of Things highlighted the increasing interconnections between economic agents. Thus, the proper design of related risk measures and the identification of their determinants have become crucial tasks to monitor the financial system and prevent its collapse. In conducting empirical studies on these problematics, we aim at answering to these preoccupations. Banks, hedge funds and insurance companies are the kinds of institutions studied.

The PhD project is part of a series of ongoing research projects in collaboration with researchers from ESSEC (France), HEC Montréal (Canada) and University of Goettingen (Germany). It offers multiple opportunities for collaborations and research stays in these institutions. Data for the project are made available through national security agencies and professional databases like HFR or CRSP. The project will be further refined and can be adapted once the PhD student has started. Other fields of applications like insurance, energy economics, climate change or economic inequalities can be considered.

WHAT DO WE OFFER?

- **A full-time position, up to 6 years** (one year, then two-year renewable contracts after receiving positive evaluations). The salary will be set according to the doctoral student salary scale of the University of Liège (i.e. approximately 2.000 € net per month).

- A starting date **on 1 October 2019**, **open to discussion**.

- **A stimulating and flexible research environment**, as a member of the research unit *Asset and Risk Management* **(ARM)**.

- An access to a **global research network** in statistics, econometrics and finance, as well as to **industrial and governmental collaborations**.
- **A doctoral training program** in collaboration (a.o.) with Solvay Brussels Schools of Management (ULB) and linked to Maastricht University.

WHAT DO WE EXPECT FROM YOU?

- **Conducting a research project** related to the description made above, with the aim to write a PhD thesis in the field of statistics/ quantitative methods applied to Finance, under the supervision of **Prof. Julien Hambuckers**.
- **Successfully attending the doctoral training program**.
- **Being in charge of practical sessions for advanced finance classes** (Financial Data Modelling, International Finance, Applied Financial instruments), equivalent to around 3h of teaching per week.
- **Contributing to a positive research and teaching environment** by attending seminars, workshops and events of the department, as well as **participating to the services to the community.**

YOUR PROFILE

- You have a **Master's degree (120 ECTS)** in **applied statistics/mathematics, business engineering, econometrics or a related quantitative subject (e.g. finance, quantitative economics, applied science, physics)**.
- You have an interest for financial and economic applications, related to risk, market finance and banking.
- You have a keen interest in statistics, and ideally knowledge in methods/models like **GLM, LASSO** or **Extreme Value Theory**.
- You have a good knowledge of **R**, **MATLAB and/or Python**, and the willingness to extend it.
- You are fluent in English. Knowledge of French and/or German is a plus.
- You are persistent, work independently and have good communication skills.
- Prior experience in the financial industry (risk department, hedge funds) is a plus.

APPLICATION PACKAGE

- Cover letter showing your motivation and eligibility for the position.
- CV showing your past experiences, your relevant expertise for the position and two references.
- An example of your written academic work (e.g. master thesis).
- A copy of your undergraduate and postgraduate degrees.

Interested candidates should send their application by email to Prof. Julien HAMBUCKERS (jhambuckers@uliege.be) before **15 August 2019 or until the position is filled**. Incomplete applications will be automatically rejected. Further information can be obtained by sending an email to Prof. Julien HAMBUCKERS. HEC® Liège is an equal opportunity employer favoring an inclusive and friendly academic culture. We particularly encourage women to apply**.**

ABOUT HEC LIEGE

HEC® Liège is the management school of the University of Liège. HEC® Liège is one of the leading Belgian university business schools for graduate and postgraduate programs with more than 115 full-time faculty members and researchers and more than 2500 students. The international vision of HEC® Liège translates into multiple research activities in management and economics, numerous partnerships with worldwide companies and universities, and growing internationalization of its programs and faculty.

The school's commitment to, and continuing investment in, quality improvement has been recognized through prestigious international accreditations: HEC® Liège has become the 1st complete Belgian business school hold both AACSB and EQUIS institutional accreditations. HEC® Liège also holds the EPAS award for each of its three main programs: the Master in Management, the Master in Business Engineering, and the Doctoral Program. The specialization "Banking and Asset Management" of the Master in Management has recently been accepted into the CFA Institute University Recognition Program. HEC® Liège is also a member of the Conférence des Grandes Ecoles

HEC® Liège is located in Liège, Belgium's third largest city, and the largest agglomeration of the French-speaking Walloon region. At the heart of Europe, Liège is the third inland port of Europe and the seventh freight airport in Europe. Recognized for its quality of life and its rich historical heritage, Liège is ideally situated within the Meuse-Rhin Euregio, 30 km from Maastricht (the Netherlands) and 60 km from Aachen (Germany). It is less than 1.5 hours away from Cologne, 1.5 hours from Paris and 3 hours from London by high-speed train (TGV).

A thorough description of the management school and its work environment can be found at: http://www.hec.ulg.ac.be/en/home. More information regarding the research unit Asset and Risk Management (ARM) can be found at http://www.hec.uliege.be/fr/faculty-recherche/domaines-strategiques-recherche/asset-risk-management.