Traineeships at Risk Dynamics

2013-2014

Who are we?

Risk Dynamics is a consultancy company specialised in the model validation, independent review and assessment of the risk management in banking, insurance and asset management industries. His activities are not limited to Belgium but are expanded all over Europe as well as in the United States, Canada, Australia and in the Middle East

Please visit our website for more details: www.riskdynamics.eu

Where are we located?

We are located in the earth of Brussels close to Arts-Loi Metro station.

Who are we looking for?

We are looking for students with a strong quantitative background (Math, Physics, Stat, Econometrics, Actuarial science, etc.) and with a strong interest in the risk management of financial institutions (Banks and Insurances). Finally, the candidates are expected to fluently speak and write in English.

The Traineeships:

The selected candidates are expected to work on one of the following topics:

1. **Time-Varying Dependence Modelling and Aggregation in Risk Management**

Context: Aggregation in Risk Management refers to the problem of pooling together risks modelled at a more granular level. Taking into account the dependence between these risks is essential if one wants an accurate modeling of the risk at an aggregate level.

Currently, in most financial institutions (Banks and Insurances), a static approach is used to model the dependence structure between risks (e.g. a Gaussian or a Student copula is usually assumed). However, it has been observed that for some risks, dependence is not always stable over time. Accordingly, it is important to develop and implement methods that allow for time-varying dependence structures.

Objective of the traineeship: The aim of the traineeship is to perform a literature review on the latest research and developments on time-varying dependence modelling in Risk Management for banks and insurance companies and to identify possible underlying drivers of dependence for different risk types. A second objective would then be to implement these time-varying dependence structures and study the best tests to assess their quality.

Duration: 4 months part-time.

2. **Market Risk: EMIR Regulation and OTC derivatives**

Context: The European Market Infrastructure Regulation (EMIR) is the new European regulation regarding Over-The-Counter (OTC) derivatives. EMIR was published on July 2012 with the main objective to regulate the Over-The-Counter derivatives market through an increase of the transparency and a reduction of counterparty risks. For this purpose, different obligations as the clearing of eligible OTC derivatives through a Central Counterparty Clearing House (CCP) are imposed.

Objective of the traineeship: The aim of the traineeship is to perform a literature review on the latest research and developments on EMIR and CCPs: regulatory requirements, CCPs structure, clearing approaches and core risks (Liquidity risk, Guarantee fund risk, CCP default risk, etc.). A second objective would be to present the main margin models defined in EMIR regulation (e.g. SPAN) and to implement (VBA, Matlab, R or SAS) the Standard formula or Internal model.

Duration: 1 month full time to 4 months part-time.

3. **The Risk Equalization system for Health Insurance in the Netherlands**

Context: A new system has been put in place in the Netherlands in 2006 to improve the affordability of health insurance contracts for the population. Part of this system is the so-called Risk Equalization system (Risicovereveningsmodel). This Risk Equalization system relies on a model that aims at equalizing the risks that an insurance company has due to the obligation to accept by law, all clients that opt for a health insurance contract. This model is owned by the government and is generally seen as a black-box, due to the high number of parameters, assumptions and uncertainties. Annually the model is adjusted for taking into account the changes in the political environment.

Objective of the traineeship: The aim of the traineeships is here to make a review of the literature on this risk equalization model, followed by a critical assessment of the model and of the way the annual adjustments are made.

Duration: 4 months part-time.

If you are interested by one of these topics, please send your curriculum vitae, a short motivation letter and your availability for this traineeship to the following addresses:

jobs@riskdynamics.eu.

jbarbarin@riskdynamics.eu

ybigah@riskdynamics.eu

bkabuta@riskdynamics.eu

Deadline: Please submit your application before July 15th 2013