Risk Measures				
Hours		Status	Term	Audience
Lectures	Tutorials			
18	0	Fondamentale	8	M1 IES
Lecturer		Evaluation	Weight	ECTS
Ali Skalli		Project	2	3

Abstract:

This course is an introduction to the econometrics of financial risk. It first recalls the main features of financial returns that makes it almost unlikely that their probability distribution be Gaussian. It then discusses the appropriateness of the variance as a risk measure in a non-normal context. Alternative risk measures are then introduced (e.g. Target semi-variance, Value at Risk, etc) and their statistical properties, discussed. In contrast to the variance, such measures are asymmetric but are still sensitive to excess kurtosis. Hence the importance of resorting to appropriate modelling strategies likely to result in reliable risk measures. Two of such strategies are then presented, based on either the generalized Pareto distribution or on Gaussian mixtures.

Description :

- The Variance as a Risk Measure
  - Financial returns distributions
  - Symmetry
  - Variance and kurtosis
- Alternative Risk Mesures
  - Index Tracking
  - Target Semi-Variance
  - Value at Risk
  - Expected Shortfall
  - Other measures
- Estimation of the *Value at Risk* in a context of fat tails
  - The Generalized Pareto Distribution
  - Measuring *Value at Risk*
  - Gaussian Mixtures

Teaching method:

- Lectures and illustrations based on using the SAS software

Prerequisites:

- Probability distributions, Linear and non-linear time series analysis.

Reference (*Textbooks only*) :

- Campbell, J. Y., A. W. Lo et A. C. MacKinley (1997), *The Econometrics of Financial Markets*, Princeton University Press, Princeton, New Jersey.