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Portfolio Optimization (5AF2023)

Filières concernées	Nombre d'heures	Validation	Crédits ECTS
Master en finance	**Cours: 2 ph**	**Voir ci-dessous**	3
Master en statistique	**Cours: 2 ph**	**Voir ci-dessous**	3

ph=période hebdomadaire, pg=période globale, j=jour, dj=demi-jour, h=heure, min=minute

Période d'enseignement:

- Semestre Automne

Equipe enseignante

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Contenu

1. Markowitz Mean-Variance Theory
2. How Well Does Markowitz Work in Practice?
3. A First Step Towards Practical Implementation: Factor Models and Averaging Techniques
4. Robust Estimation: the Variance-Covariance Matrix
5. Robust Estimation: the Vector of Expected Returns
6. Michaud: "Efficient Asset Management"
7. The Black-Litterman Asset Allocation Model.
8. Heuristics and Risk-Based Investing

Forme de l'évaluation

Project: 80%, exercises: 20%.
Re-take session: 2-hour written exam (100%) during the session.

Neither documents nor connected devices are permitted during the exams.

In case of violation of these rules, the students are in a situation of fraud and the unauthorized items will be removed. The exam could be deemed as failed.

Documentation

Reilley F. and K. Brown, Investment Analysis and Portfolio Management, 10th edition, Thomson.
Elton E., M. Gruber, S. Brown and W. Goetzmann, Modern Portfolio Theory and Investment Analysis, 9th edition, Wiley.

Pré-requis

None. However, basic knowledge of Matlab and Excel is compulsory.

Forme de l'enseignement

Lectures: 2 hours per week.

Objectifs d'apprentissage

Au terme de la formation l'étudiant-e doit être capable de :

- Synthesise Appraise output given the approach
- Compute Build optimal portfolio and backtest investment strategies
- Define Name state-of-the art portfolio construction methodologies
- Identify List the main drawbacks of portfolio optimization techniques
- Communicate Discuss the pros and cons of portfolio optimization

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- Evaluate Assess performance, diversification and overall quality of investment portfolios
- Distinguish Compare portfolio allocation methodologies and identify different approaches to estimating portfolio construction input parameters
- Assimilate Select appropriate portfolio optimization technique depending on specific needs and setup