UNIVERSITÀ DEGLI STUDI DI MILANO-BICOCCA

SYLLABUS DEL CORSO

Risk Management

2021-2-F8204B036-F8204B036M

Learning objectives

The purpose of the course is introducing students to the modern theory of financial risk and to the main risk measures, with special emphasis on numerical applications.

Contents

Introduction to risk and uncertainty; the efficient frontier; risk measures; backtests.

Detailed program

1. Risk and return;
2. The mean-variance model;
3. Efficient frontier and the CAPM;
4. Efficient frontier with portfolio constraints;
5. Definitions of risk measures;
6. Main risk measures: Value-at-Risk and Expected Shortfall;
7. Numerical implementation;
8. Backtests;
9. Copulas.

Prerequisites

Courses on R programming, Financial theory and Statistics.

Teaching methods

Traditional lectures, computer aided lessons and classes.

Assessment methods

Numerical exercises with PC. The student is presented a list of 5/6 problems covering all topics of the course and which require to answer with numerical elaborations at the PC. The student may be required to write an ad hoc new function in R in order to solve some of the problems.

Textbooks and Reading Materials

Teaching notes

Semester

First semester

Teaching language

Italian