The term structure of interest rates: Definitions, models and applications.

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February 2010

1 Outline

The course is scheduled in five lessons of two teaching hours each lesson. The material is divided in six topics: topics 1 and 2 cover the first lesson, the other topics are presented in the remaining lessons.

WEEK I

1. **Topic 1:** *Term structure of interest rates.*
   (a) Spot, discount, and forward curve.
   (b) Stylized facts of the yield curve.
   (c) Principal component analysis of the yield curve.

2. **Topic 2:** *Yield curve modelling.*
   (a) VAR models.
   (b) Nelson-Siegel models.

3. **Topic 3:** *No-arbitrage theory.*
   (a) Expectation hypothesis.
   (b) No-arbitrage/Pricing kernel.
   (c) One Factor Affine Models: Vasicek.
   (d) Multifactor affine models.

4. **Topic 4:** *Computer session I: European yield curve.*
(a) Constructing, modelling and forecasting the European yield curve.
(b) VAR, Nelson-Siegel, Affine models.

WEEK II

5. **Topic 5:** Moving on from the yield curve.
   (a) Yield curve and macroeconomic variables.
   (b) Treasury Bills/Bonds portfolio.

6. **Topic 6:** Computer session II: empirical applications.
   (a) Yield curve and GDP.
   (b) Risk analysis for a Treasury portfolio.
Literature


