

# Finanzökonometrisches Seminar für MA-Studierende: Themenliste

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## 1 Yield curve modeling

*General references:*

- D. Ruppert (2010) *Statistics and Data Analysis for Financial Engineering*. Springer texts in statistics (Springer). Available at <http://ebooks.uni-muenchen.de/28539/>.
- D. Brigo & F. Mercurio (2001) *Interest Rate Models - Theory and Practice*. Springer finance (Springer). Available at <http://books.google.de/books?id=nmmAZLwtQywC>.
- [Financial Engineering and Risk Management Part I](#)

### 1.1 Modeling the yield curve: Diebold-Li

- F. X. Diebold & C. Li (October 2003) *Forecasting the Term Structure of Government Bond Yields*. Working paper series (National Bureau of Economic Research). Available at <http://www.nber.org/papers/w10048>.
- Matlab Demo: Stochastic State-Space Modeling of Financial Time-Series Data, [Video](#), [Files](#)

### 1.2 State-space modeling of the yield curve

- F. X. Diebold, G. D. Rudebusch & S. B. Aruoba (July 2004) *The Macroeconomy and the Yield Curve: a Dynamic Latent Factor Approach*. Working paper series (National Bureau of Economic Research). Available at <http://www.nber.org/papers/w10616>.
- Matlab Demo: Stochastic State-Space Modeling of Financial Time-Series Data, [Video](#), [Files](#)

### 1.3 Cox-Ingersoll-Ross model

- J. C. Cox, J. Ingersoll Jonathan E & S. A. Ross (1985) A Theory of the Term Structure of Interest Rates, *Econometrica*, 53(2), pp. 385–407. Available at <http://ideas.repec.org/a/ecm/emetrp/v53y1985i2p385-407.html>.
- Maximum likelihood estimation of the Cox-Ingersoll-Ross process: the Matlab implementation. <http://www.mathworks.com/matlabcentral/fileexchange/37297-maximum-likelihood-estimation-of-the-cox-ingersoll-ross-process-the-matlab-implementation>

## 2 Financial derivatives

### 2.1 Option pricing in the binomial model

- J. Hull (2009) *Options, Futures and Other Derivatives*. Options, futures and other derivatives (Pearson/Prentice Hall). Available at <http://books.google.de/books?id=sEmQZoHoJCcC>.
- [Financial Engineering and Risk Management Part I](#)
- [Financial Engineering and Risk Management Part II](#)

## 3 Market risk

### 3.1 Machine learning trading strategy

- B. Moritz & T. Zimmermann (Working Paper) *Deep Conditional Portfolio Sorts: the Relation Between Past and Future Stock Returns (Job Market Paper)* (Harvard University). Available at <https://dl.dropboxusercontent.com/u/776860/Draft.pdf>.
- W. F. Sharpe (1964) Capital Asset Prices: a Theory of Market Equilibrium Under Conditions of Risk, *The Journal of Finance*, 19(3), pp. 425–442. Available at <http://dx.doi.org/10.1111/j.1540-6261.1964.tb02865.x>.
- E. F. Fama & K. R. French (1993) Common Risk Factors in the Returns on Stocks and Bonds, *Journal of Financial Economics*, 33, pp. 3–56.
- R. Israel et al. (2014) Fact, Fiction and Momentum Investing, *Working Paper*.

### 3.2 Using Bootstrapping and Filtered Historical Simulation to Evaluate Market Risk

Based on [Matlab demo](#)

### **3.3 Using Extreme Value Theory and Copulas to Evaluate Market Risk**

Based on [Matlab demo](#)

### **3.4 Using Extreme Value Theory, Realized Volatility and Copulas to Evaluate Market Risk**

- T. G. Andersen et al. (2001) The Distribution of Realized Exchange Rate Volatility, *Journal of the American Statistical Association*, pp. 42–55.
- T. G. Andersen et al. (2000) Great Realisations, *Risk Magazine*, pp. 105–108.