

## Undervisningsportfolio

### 1. Undervisnings-CV: Oversigt over undervisnings- og vejledningsopgaver med angivelse af fagområder, omfang, niveau (BA, kandidat, EVU, Ph.d) samt evt. censoropgaver.

#### 1. TEACHING CV: TEACHING AND SUPERVISION TASKS.

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I am responsible for teaching undergraduate and graduate finance and econometrics courses in the Economics program (MSc Econ) as well as in the finance specialization in the Business Administration program at Aalborg University Business School. Since August 2011, I have taught 7 different courses. Four of these are completely new courses of 5 or 10 ECTS and have been developed by me whereas I have revised and/or expanded the last three courses. Moreover, the supervision of bachelor and master student's projects/theses amounts to more than 70 students.

Exercises are important in learning finance theory as well as econometrics, I believe. Therefore, I usually lecture for two hours with build-in breaks and then I proceed with a two-hour exercise session. In addition, I provide podcasts as a supplementary source of learning. I am in a fortunate situation to teach undergraduate students at their second and third year but also graduate students in their fourth year. This way, I have a good feeling about the course progress and academic progress of the students. The following table provides an overview of the courses that I have taught:

##### **Commodity Economics (MSc in Economics/Business administration)**

Topics: Major Commodity markets. Futures and options. Gas and Electricity Markets

Literature: Burger et al. "Managing energy risk : an integrated view on power and other energy markets". Wiley.

##### **Introduction to Finance (students in Business Administration)**

Topics: Time value of Money. Interest rates, Bonds. Stock valuation. Investment decisions. Capital budgeting. Risk and return. Systemic risk and equity risk premium. Cost of capital.

Berk, Demarzo and Harford. Berk, Demarzo and Harford. Berk, Demarzo and Harford. Fundamentals of Corporate Finance". Pearson Global ed

##### **Time Series Econometrics (MSc in Economics students)**

Fall 2013-2019

Topics: ARCH/GARCH, VAR models, Cointegration, Simultaneous Equation Models, Paneldata models, Factor-Augmented VAR (FAVAR) models.

Main literature: Enders, "Applied Econometric Time Series", Wiley. Heij, de Boer, Franses, Kloek and van Dijk, 'Econometric Methods with Applications in Business and Economics', Oxford University Press.

##### **Fixed income and their derivatives (MSc in Economics students)**

Fall 2011-2020

Topics: Bond markets and bond pricing. Term structure of interest rate theory. Risk management including value-at-risk. Fixed income derivatives. Inflation, expectations and monetary policy. Mortgage backed securities. Monte Carlo simulation. Term structure models: Binomial trees and continuous time models.

Main literature: Pietro Veronesi (2010), 'Fixed Income Securities: Valuation, Risk, and Risk Management', John Wiley & Sons.

##### **Introduction to Financial Engineering and Computational Finance (students in Mathematics-Economics)**

Spring 2012-2015

Topics: Introduction to stochastic calculus, quadratic variation, stochastic integrals and PDEs. Itô's Lemma. Black-Scholes, the greeks and hedging. Finite difference methods including Crank-Nicolson. Monte Carlo simulation. Numerical Integration. Exotics and path dependency. Barrier options. Asian options. ARCH/Garch models. Heston stochastic vol. model.

Main literature: Paul Wilmott (2007), 'Paul Wilmott introduces quantitative finance', John Wiley & Sons.

##### **Investment science and introductory finance (students in Mathematics-Economics)**

Spring 2011- 2013

Topics: Investment science. The bond market and bond pricing. The term structure of interest rates. The stock market and models for stock price dynamics. Portfolio theory. CAPM. APT. Options. Black-Scholes option pricing formula. Itô's Lemma.

Main literature: David G. Luenberger: 'Investment Science', Oxford 2009.

##### **Financial Markets (students in Economics)**

Spring 2011-2019

Topics: Mean-Variance (Markowitz). CAPM. The relation between Mean-Variance and CAPM. Arbitrage Pricing theory (APT). Derivatives: Forwards, Futures and options. The bond market and bond pricing.

Main literature: Grinblatt M. og S. Titman: 'Financial Markets and Corporate Strategy'. McGraw-Hill.

##### **Inflation and optimal monetary policy: theory and applications (students in Economics)**

Spring 2016

Main topics: Empirical evidence of the effectiveness of monetary policy. Micro foundation of the role of money (money in the utility function). Money in the short run and price/wage rigidities. Discretionary policy and time inconsistency. Monetary policy operating procedures including unconventional initiatives.

Main literature: Carl E. Walsh, "Monetary Policy and Theory". In addition a number of papers from leading journals.

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## 2. Studieadministration: Oversigt over studieadministrative opgaver, eksemplis medlem af studienævn, studieleder, semesterkoordinator, fagkoordinator, akkreditering m.v.

### 2. STUDY ADMINISTRATIVE TASKS

Head of the program Master in Finance, from the startup in 2019 and until 2021.

**3. Universitetspædagogiske kvalifikationsforløb: Oversigt over gennemførte universitetspædagogiske kursusforløb, PBL-kurser, workshops, udviklingsprojekter, kollegial supervision o.l.**

**3. UNIVERSITY PEDAGOGIC TRAINING.**

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October 2012 – February 2014: University Pedagogy for Assistant Professors., Aalborg University.

**4. Anden form for kvalificering: Konferencedeltagelse, debatindlæg, oplæg m.v. i relation til uddannelse, "Undervisningens dag", o.l.**

**4. CONFERENCES AND OTHER DISSEMINATION**

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Conference presentations in Austria, Belgium, Denmark, France, Norway, Sweden, Switzerland, US, and UK. Presentations for high-school students during "study internships".

**5. Undervisningsudviklingsforløb og undervisningsmateriale: Oversigt over medvirken til udvikling af nye moduler, undervisningsmateriale, uddannelser, e-learning, samarbejde med eksterne samarbejdspartnere o.l.**

**5. COURSE DEVELOPMENT AND TEACHING MATERIAL AND E-LEARNING.**

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Production of numerous podcasts (> 4 hours) for the students. Involved models in the advanced course "Fixed income and their derivatives" are explained using podcasts. The use of software in econometrics is explained in 8 podcasts. An introduction to Excel/VBA is also explained in a few podcasts.

**6. Nominering til og/eller modtagelse af undervisningspriser.**

**6. TEACHING AWARDS**

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Elected as Teacher of the Year 2015, *Faculty of Social Sciences, Aalborg University*. Nominated to the University-wide prize 'Teacher of the Year' at Aalborg University.

**7. Evt. personlige refleksioner og initiativer: Personlige overvejelser knyttet til undervisning og vejledning, ønsker til og planer for pædagogisk videreudvikling, planer for opfølgning på undervisningsevalueringer m.v.**

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**8. Andet.**

**PROFESSIONAL SERVICES=====****PhD supervision**Co-supervision of a PhD students ( project within electricity markets and option theory) **PhD assessment committees**Member of PhD assessment committees: University of Aarhus in Denmark and University of Namur in Belgium. **Journal referee:** Journal of Empirical Finance, International Journal of Forecasting, Empirical Economics, Real Estate Economic, Quarterly Review of Economics and Finance, International Review of Financial Analysis, Bulletin of Economic Research, Applied Stochastic Models in Business