## Personal Information

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## Working Experience

| | | |
|---|---|---|
| Principal Economist | Financial Stability, European Insurance and Occupational Pension Authority | 2011– present |
| Principal Economist<br>Senior Economist<br>Economist<br>Analyst | Risk Management, European Central Bank | 2001 – 2011 |
| Economist | Cowi Consulting A/S | 2000 – 2001 |
| Assistant Professor | Dept of Finance, Aarhus Business School | 1998 – 2000 |

## Education

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|---|---|---|
| Ph.D., Finance | Aarhus School of Business, Denmark | 1998 |
| M.Sc., Finance | Aarhus School of Business, Denmark | 1995 |
| BA., Business Adm. | Copenhagen School of Business, Denmark | 1993 |

## Refereed Publications

- Nelson-Siegel, Affine and Quadratic Yield Curve Specifications: Which one is better at forecasting? (with R. Vidova-Koleva), ECB working paper series, *Journal of Forecasting, forthcoming*.
- How arbitrage-free is the Nelson-Siegel model? (with L. Coroneo and R. Vidova-Koleva), *Journal of Empirical Finance,* 2011, Vol. 18(3), 393 - 407.
- Long horizon yield curve forecasts: comparison of parametric and semi-parametric approaches (with R. Rebonato), *Applied Financial Economics*, 2008, Vol. 18(20), 1597-1611.
- The yield curve and macro fundamentals in forecasting exchange rates (with M. Koivu and J. Stromberg), *Journal of Financial Forecasting*, 2007, Vol. 1(2), 63-83.
- A new approach to predicting recessions, *Economic Notes*, 2007, Vol. 36, 27-42.
- Evolving yield curves in the real-world measure: a semi-parametric approach, *Journal of Risk,* 2005, Vol. 7(3), 29-61, (with R. Rebonato, S. Mahal, M. Joshi, L.-D. Bucholz).
- Inferring the private information content of trades: a regime switching approach, *Journal*

*of Applied Econometrics*, 2003, Vol. 18, 457-470.

- Estimating the probability of informed trading, *Journal of Financial Research*, 2002, Vol. 25(4), 485-505.
- Regime shifts in the Danish term structure of interest rates, *Empirical Economics*, 2000, 25(1), 1-13, (with T. Engsted).
- Estimation of the effective bid-ask spread on high frequency Danish bond data, *European Journal of Finance*, 1999, 5, 109-122.
- Estimation of the bid/ask spread on Danish stocks, and evaluation of Roll's estimator, *Applied Financial Economics*, 1997, 7, 605-610.

## Books and contributions to books

- Portfolio and Risk Management for Central Banks and Sovereign Wealth Funds, Palgrave Macmillan, 2010, (co-editors G. Petre and J. Coche)
- Central Bank Reserves and Sovereign Wealth Management, Palgrave Macmillan, 2009, (co-editors A. Berkelaar and J. Coche).
- Interest Rate Models, Asset Allocation and Quantitative Techniques for Central Banks and Sovereign Wealth Funds, Palgrave Macmillan, 2009, (co-editors A. Berkelaar and J. Coche).
- Risk Management for Central Banks and Other Public Investors, Cambridge University Press, 2008, (Ch. 2: Strategic Asset Allocation for Fixed Income Investors, with M. Koivu and F. Monar).
- Strategic Asset Allocation in Fixed Income Markets: A Matlab Based User's Guide, Wiley, 2008.

## Dissertations

- Essays on empirical market microstructure (Ph.D.).
- Estimating the components of the spread on Danish stocks (M.Sc., in Danish).

## Working Papers

- Insurance and Banking Interconnectedness in Europe: the Opinion of Equity Markets.
- The Use of Portfolio Credit Risk Models in Central Banks, (with U. Bindseil, H. Van der Hoorn, H. Schwartzlose), ECB Occasional Paper No. 64, July 2007.
- Yield curve prediction for the strategic investor (with C. Bernadell and J. Coche), ECB working paper no 472, April 2005.
- Foreign reserve management subject to a policy objective (with J. Coche, M. Koivu and V. Poikonen), ECB working paper no 624, May 2006.

- A factor risk model with reference returns (with C. Bernadell and J. Coche), ECB working paper no 641, June 2006.
- Trade classification by switching regressions (with C. Tanggaard).
- Reducing the minimum price variation in Finland: evidence of an optimal tick size.
- Trade data, market timing and transaction costs of Danish government bonds, Monthly report of the Copenhagen Stock Exchange (in Danish), 1995, no 283 (with C. Tanggaard).

## Work in Progress

- A discrete-time arbitrage free Nelson-Siegel model for nominal and real yield curves (with A. Berkelaar).
- Ensuring positivity when projecting yield curves (with C.Tanggaard, R. Vidova-Koleva and F. Monar).

## Teaching Experience

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|---|---|---|
| Strategic Asset Allocation | M.Sc. Course, Frankfurt University | 2006, 2008, 2009, 2010 |
| Investment Science | B.Sc. Course, University of Aarhus | 1999, 2000 |
| Corporate Finance | M.Sc. Course, Aarhus School of Business | 1998, 1999, 2000 |
| Corporate Finance | M.Sc. Course, University of Southern Denmark | 2000 |
| Quantitative Econometric methods | M.Sc. Course, Aarhus School of Business (teaching assistant) | 1995 |

## Current Research Interests

- Applied financial econometrics.
- Modeling and forecasting the joint behavior of macroeconomic variables and the yield curve in single and multi-currency settings.
- Macro factors, financial markets and the soundness of financial intermediaries.
- Early detection of financial fragility in financial markets with links to the real economy.
- Asset and liability modeling for Insurance undertakings and pension plans
- Reserves management, including strategic and tactical asset allocation.

## Presentations

- Seminar on portfolio optimisation and ALM techniques, Luxembourg, May 2011.
- Seminar on Financial Analysis and Related Tools, London, May 2011.
- MATLAB user seminar, Frankfurt am Main, September 2009, October 2010.
- Central Bank of Peru, planned and presented a three-day course on yield curve modeling and portfolio optimisation, Lima, February 2010
- Central Bank of Brazil and Bank for International Settlements, Risk Conference, Brasilia, September 2009.
- GARP Conference, Kuwait City, Kuwait, June 2009.
- Frankfurt University, Department of Finance, Frankfurt am Main, May 2009.
- Institutional Investors Institutional Investor Americas Sovereign Funds Roundtable, Miami, 2009.
- MATLAB user seminar, Zurich, 2008.
- Bank of Canada, conference on fixed income markets, Ottawa, 2008.
- Central Bank of Egypt, planned and presented a two-day course on Yield Curve Modeling, Cairo, 2008.
- Eastern Finance Association Annual Meeting, Florida, 2008.
- Central Bank of Italy, contributing to a course on “The Econometrics of Asset Allocation”, Rome, 2008.
- World Bank, Workshop on Multi-Asset Class Strategic Asset Allocation, Seoul, 2008.
- CREATES, Aarhus University, Aarhus, 2008.
- ABN Amro, Risk and Capital Management Summit, Cairo, 2008.
- AFFi, French Finance Association International Meeting, Paris, 2007.
- World Bank Workshop on Strategic Asset Allocation, Izmir, 2007.
- MATLAB user seminar, Munich, 2007.
- European Investment Bank, Portfolio Management Conference for Public Institutions, Luxembourg, 2007.
- Marcus Evens conference on credit risk and its integration with market risk, London, 2006.
- Bank for International Settlements, Seminar series on strategic benchmark construction, Basel, 2006.
- Derivatives and Risk Management, Risk Conference, Monaco, 2006.
- The evolution of credit risk, conference at the Bank of Greece, Athens, 2006.
- Society for Non-linear Dynamics and Econometrics, Annual Conference, St. Louis, USA, 2006.
- Finance seminars, University of Pireaus, Athens, 2006.

- Fondo Latinoamericano de Reserves and HSBC, Reserves management conference, Cartagena, 2005.
- Quant Congress Europe, London, 2005.
- Southwestern Finance Association Meeting, Dallas, 2005.
- Fixed Income Workshop, Bank of Canada, Montreal, 2004.
- National Central Bank of Poland, 2003.
- NTU international conference of finance, Taipei, 2000.
- European finance association, Annual meeting, Helsinki, 1999.
- Symposium on microstructure and high frequency data, Paris, 1998.
- European finance association, Annual meeting, Fontainebleau, 1998.
- Symposium on applied statistics, University of Aarhus, 1998.
- Finance seminars, Vanderbilt University, Owen School, Nashville, 1997.
- Symposium on applied statistics, University of Odense, 1996.

## Other Activities

- Member of the Danish econometric society.
- Member of a Ph.D. evaluation committee at the Aarhus University for Lasse Bork, 2010.
- Co-organiser of the BIS/World Bank/ECB conference on Strategic Asset Allocation, 2008, 2009, 2010.
- Referee for:

  Journal of Empirical Finance; Spanish Economic Review; Journal of Money, Credit and Banking; Applied Financial Economics; European Journal of Finance; The Working Paper Series at the European Central Bank; Software Practice and Experience.
- Paper Discussions:

  Eastern Finance Association, 2008; Southwestern Finance Association, 2005; European Finance Association 1999; European Finance Association, 1998.
- Visiting Ph.D. student at the Owen School, Vanderbilt University, USA, 1996-1997.