Jakob Jan Bosma

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(click underlined items for hyperlink)

Profile

Hands-on **quantitative analyst** with experience in model development and validations in market and credit risk with a focus on quantitative finance and econometric methods. Has carried out single-handed validations of Vanilla and Exotic interest rate and inflation derivatives with the implementation of associated payoffs and pricing engines in benchmark libraries. Developed a quantitative model to assess the non-modellable risk charge for banks in accordance with the standards of the Fundamental Review of the Trading Book (FRTB). Contributed to the development of various credit risk models in accordance with the International Financial Reporting Standards 9 (IFRS9). Independently set up an investment fund and filed for its registration with the AFM. Engages in academic research with publications in top-tier journals in the fields economics and econometrics. Current research interests comprise modelling yield curve dynamics. Dutch native speaker and fluent in English. Core capabilities and strengths include:

◇ Quantitative Finance
◇ Financial Econometrics
◇ Credit Risk Models
◇ Model Development/Validation

◇ Banking Regulation (Market and Credit Risk)
◇ Machine Learning (Information Theory)
◇ Numerical Methods
◇ Stochastic Calculus

Experience

- **Bosma Quantitative Services B.V.**   Utrecht, NL
  Quantitative Analyst — Self Employed   *Jan. 2020 – present*

  As an independent consultant mainly involved in market risk model development and validation projects for financial institutions. Constructed an investment fund around a fundamental value/growth oriented trading strategy and developed proprietary tools.

  – Independently constructed 2 investment partnerships acting as family office (2021-2022):
    * The registered fund is based on long-term growth strategy and relies on proprietary fundamental cash flow growth estimates and a pricing library featuring updated interest rate conventions (transition from IBOR to risk-free rates).
  – At a large Dutch bank, market risk model validation (2020-2022):
    * Developed validation standards and a validation benchmark library for the Risk-Not-In-Model (RNIME) framework.
    * Validated a number of RNIME cases which mainly pertain to pricing model discrepancies between the end-of-day price calculation and the price calculations used to compute risk numbers such as Value at Risk and the Incremental Risk Charge.
    * Acted as team lead/project manager for other RNIME validation projects by guiding junior/medior team members in other RNIME validation projects.
    * Setting up validation standards for Fair Value Adjustment quantification methodologies and trading model reserves.
  – European Investment Bank, market risk model validation (Q3 & Q4 2021):
    * Succeeded in securing an RFP on various validation projects in the domain of banking book risk.

- **University of Groningen**   Groningen, NL
  Asst. Professor in Finance, parttime since Nov. 2015 (Tenure Track before) Aug. 2014 – present

  At the Economics, Econometrics and Finance department (12 Fridays per year).

  – **Teaching,** Econometrics MSc level: Asset pricing and portfolio management. Course rated in the top 5 faculty wide in 2019.
  – **Research:** Asset pricing, yield curve dynamics.

- **Triple A - Risk Finance**   Amsterdam, NL
  Quantitative Risk Consultant   *Aug. 2018 – Dec. 2019*

  Main activities comprise development of various credit risk models in banking. Additional activities: development of consulting/research propositions and provide methodology training for junior consultants. Developed a proxy methodology for missing risk factors in a market risk context.

- At a large Dutch bank, credit risk model development, IFRS9:
  * Developed an econometric loss model to infer the expected credit loss values for contracts in a default state with panel data. The estimated model is used to compute the Loss Given Loss with contract-specific data and macroeconomic variables.

- **ING Bank** — Amsterdam, NL
  Quantitative Analyst — *Sep. 2015 – Jul. 2018*

  At the Financial Risk, FI/FM Quants department. Activities included the replication and validation of front office derivative pricing systems for exotic interest rate instruments and their pricing engines in C++:
  - **Main activities:**
    * Implemented a benchmark pricer for the validation of total return swaps associated with asset-backed securities and covered bonds.
    * Implemented the forward CPI curve construction routines required to price inflation derivatives.
    * Assisted in the implementation of the multiple-curve pricing framework for interest-rate derivatives.
    * Implemented a monte-carlo routine with the Longstaff-Schwarz algorithm for the validation of Steepeners, Bermudan swaptions and callable range accruals.
    * Designed and implemented a non-modelable risk factor shift methodology for interest rate risk factors in accordance with the internal model requirements for the FRTB.

Education

- **University of Groningen** — Groningen, NL
  PhD in Economics — *Sep. 2010 – Jul. 2014*
  - Title On systemic risk formation, Research areas: Financial econometrics, asset pricing, signalling games.
    * Research visit at Deutsche Bundesbank (German central bank), Frankfurt a.M. (DE), 2011.
    * Awards: Faculty-wide Best PhD Dissertation Award of 2014.

- **University of Groningen** — Groningen, NL
  MSc Econometrics, DPhil in Economics and Econometrics; cum laude — *Sep. 2008 – Aug. 2010*
  - Main topics: Theoretical and applied econometrics, mathematics, information theory, game theory, quantitative finance, macroeconomics.

- **University of Groningen** — Groningen, NL
  BSc in Economics (honors program); cum laude — *Sep. 2005 – Aug. 2008*
  - International MBA exchange program Fudan University, Shanghai (CN), joint with MIT Sloan (US), 2008.

Skills

Programming: C++, C#, Python, Git version control, Mex (Matlab), Mata (Stata).

Software/packages: GCC, Visual Studio, quantlib, boost, armadillo, R, Matlab, SAS, MS Excel (incl. VBA).

Institutional software: Various in-house trading software for financial markets, Summit FT 5.6, Intex (RMBS, ABS and Covered Bonds valuation tool), Kondor+.

Courses: Programming in C/C++, part I – III, University of Groningen, 2012; Adjoint Algorithmic Differentiation, Global Derivatives (now QuantMinds International) Conference, 2016.

Soft skills: Awarded lecturing experience in university finance/econometrics master programs, 2010 - present. Various courses in consultative selling and writing, Amsterdam 2019. Experience in Agile Working, 2017 - present.

Peer-reviewed publications

Bosma, J. J., M. Koetter and M. Wedow (2019). Too connected to fail? Inferring network ties from price co-movements *Journal of Business Economics and statistics 37*(1), pp. 67-80

Bosma, J. J. (2016). Dueling policies: Why systemic risk taxation can fail. *European Economic Review 87*(3), pp. 132–147