

JOSHA A. DEKKER

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EDUCATION

PhD candidate in Mathematical Finance, University of Amsterdam 2022 - present
Faculty of Economics and Business, Quantitative Economics Department Scheduled end date: August 2025
Actuarial Science and Mathematical Finance Group

Topic: “Pricing stochastically constrained derivatives with two-way feedback between the constraints and underlying dynamics.”

Advisors: Prof. dr. R.J.A. Laeven, Prof. dr. ir. M.H. Vellekoop

MPhil Economics, Economics & Finance, University of Amsterdam - Tinbergen Institute 2020 - 2022
Finance Specialisation, GPA: 8.97, thesis: 8.50. Cum laude distinction.

Thesis Title: “Valuation of Optimal Stopping Problems with HOST Feedback”

Supervisors: Prof. dr. R.J.A. Laeven, Prof. dr. ir. M.H. Vellekoop

MSc Econometrics, University of Amsterdam 2019 - 2020
Complexity and Economic Behaviour Specialisation, GPA: 8.32, thesis: 9.00. Cum laude distinction.

Thesis Title: “On the welfare enhancing potential of trade frictions: a stabilising mechanism for expectation dynamics”

Supervisor: Prof. dr. C.H. Hommes

Honours Programme, University of Amsterdam 2017 - 2019
Various Economics, Mathematics and Statistics related courses, GPA: 8.40

BSc Econometrics, University of Amsterdam 2016 - 2019
Econometrics Specialisation, GPA: 8.32, thesis: 8.80.

Thesis Title: “Introducing a Bayesian approach to explaining price expectation formations”

Supervisor: Dhr. dr. ir. F.O.O. Wagener

RESEARCH PAPERS

Research interests

My research interests include (stochastically constrained) option pricing, optimal stopping on random times, option pricing on Hawkes processes, probability theory, (integro-)partial differential equations and non-linear dynamics.

Work in progress

- *Title:* Optimal Stopping with Stochastic Exercise Opportunities (2023+). Joint work with R.J.A. Laeven, J.G.M. Schoenmakers and M.H. Vellekoop.
- *Title:* Stochastic Exercise Opportunities with HOST-feedback: Hawkes Optional Stopping Times (2022+). Joint work with R.J.A. Laeven and M.H. Vellekoop.

As a research assistant

- *Paper:* Beetsma, R., X. Debrun, and R. Sloof (2022): “*The political economy of fiscal transparency and independent fiscal councils,*” *European economic review*
Role: Coding and assisting with the numerical analysis.

TEACHING EXPERIENCE

Tutorial Teacher (3 courses) 2021 - Present
Tinbergen Institute *Amsterdam, NL*

- Measure Theory and Asymptotic Statistics [2022-2023]
- Asset Pricing [2022]

Tutorial Teacher (9 courses)

University of Amsterdam

2018 - Present
Amsterdam, NL

- MSc Econometrics: Theory of Markets [2021]
- BSc Econometrics:
 - Mathematics 1: Calculus [2019]
 - Mathematics 4: Multivariate Calculus & Optimisation [2018]
 - Probability Theory and Statistics 2 [2020]
 - Probability Theory and Statistics 3 [2019]
 - Microeconomics for Actuarial Science & Econometrics [2019]
 - Introduction Data Science: Data Preprocessing [2023]
- BSc Economics: Statistics 1 [2019]
- BSc Business Administration: Quantitative Data Analysis 1 [2019]

KNOWLEDGE AREAS

- Proficient: Asset Pricing, Economics Dynamics, Fourier Theory, Measure Theory, Multivariate Analysis, ODE Theory, Optimal Stopping, Optional Stopping, PDE Theory, Probability Theory, Stochastic Analysis
- Working knowledge: Abstract Algebra, Bayesian Statistics, Behavioural Macro/Micro-Economics, Calculus of Variations, Complex Analysis, Contract Theory, Differential Geometry, DSGEs, Extreme Value Theory, Game Theory, Topology
- Basic: Category Theory, Number Theory

SOFTWARE SKILLS

- Proficient: Python, R, MatLab, L^AT_EX
- Working knowledge: Sage

LANGUAGE SKILLS

- C2, Proficient: Dutch, English
- B2, Upper-intermediate: French
- B1, Intermediate: German

CONFERENCES

- 20th Winter School on Mathematical Finance. Soesterberg, Netherlands, January 2023.
- SIAM Conference on Financial Mathematics and Engineering 2023. Philadelphia PA, United States, June 2023. Contributed Presentation: "Optimal Stopping on Random Times".
- 26th International Congress on Insurance: Mathematics and Economics. Edinburgh, Scotland, July 2023. Contributed Presentation on "Optimal Stopping on Random Times".

SUPERVISION

- 2023: I supervised 3 theses for the University of Amsterdam MSc program Actuarial Science and Mathematical Finance, which were centered on (option pricing in the face of) default risk and catastrophe derivatives.
- 2023: I supervised 3 theses for the University of Amsterdam BSc program Actuarial Science, which were centered on optimal portfolio selection using GAN-based approximate simulation.

REFERENCES

BEETSMA, R., X. DEBRUN, AND R. SLOOF (2022): "The political economy of fiscal transparency and independent fiscal councils," *European economic review*, 145, 104118–.