Terri van der Zwan

Erasmus University Rotterdam
Erasmus School of Economics, Econometric Institute; Tinbergen Institute

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Research interests: time series econometrics, asset pricing, finance, empirical macroeconomics, machine learning.

Education

Erasmus University Rotterdam   Sept. 2019 – Present
Ph.D. candidate in Financial Econometrics   Rotterdam, The Netherlands

Topic: Time series econometrics.
Academic advisors: Prof. Dr. Michel van der Wel and Prof. Dr. Erik Kole.

University of California San Diego   Sept. 2022 – Dec. 2022
Research visit   San Diego, CA, United States

Funded by a ***Fulbright Award***, hosted by Prof. Dr. Allan Timmermann.
Project: "Free Range: How important is the space of hyperparameters to the forecasting performance of ML models?",
with Prof. Dr. Allan Timmermann and Yanki Kalfa.

Fudan University   Sept. 2018 – Aug. 2019
Advanced Language and Culture Program in Mandarin Chinese   Shanghai, People's Republic of China

Funded by a ***Sino-Dutch Scholarship***.

Erasmus University Rotterdam   Sept. 2016 – Feb. 2018
M.Sc. Econometrics and Management Science   Rotterdam, The Netherlands

Cum laude distinction, Majoring in Quantitative Finance, GPA: 8.4/10.
Thesis: "Macro or Fundamental? Comparing the Drivers of Equity Returns" (Graded: 9.2/10).

Erasmus University Rotterdam   Sept. 2013 – Aug. 2016
B.Sc. Econometrics and Operations Research   Rotterdam, The Netherlands

Majoring in Quantitative Finance, GPA: 7.7/10.
Thesis: "Macroeconomic, Demographic, and Geographic Factors Impacting Mortgage Credit Risk" (Graded: 8.5/10).
Exchange semester: Shanghai University of Finance and Economics (Fall 2015).

Research

Heterogeneous Macro and Financial Effects of ECB Asset Purchase Programs
jointly with Erik Kole and Michel van der Wel (2023) – Tinbergen Institute Discussion Paper 2021-109/III
(R&R at Journal of International Money and Finance)

Best Paper (with co-authors) Award at the Early-Career Scholars Conference of the Society for Financial Econometrics (SoFiE) (2022)

Like other central banks, the ECB resorted to asset purchase programs (APPs) to replace conventional policy measures. We examine their impact on the Euro area with a focus on the heterogeneity among its constituents and across financial markets. Our analysis combines a Bayesian structural VAR with an identification scheme based on market surprises at the announcement time, effectively capturing structural dynamics. At the Euro area level, APPs stimulate the economy, lower government bond yields, elevate stock prices, and reduce corporate and sovereign stress. The impact shows heterogeneity in the stock market with a widened value-growth spread in stocks and varying sector impacts, particularly favoring

financial stocks, and across countries with stronger effects on southern Euro area countries. Our results show strong spillover effects between countries, indicating challenges in the precise targeting of APPs.

Equity Risk Factors for the Long and Short Run: Pricing and Performance at Different Frequencies

jointly with Erik Hennink and Patrick Tuijp (2023) – Tinbergen Institute Discussion Paper 2021-062/III (submitted)

This paper introduces a general linear multifactor asset pricing methodology that integrates systematic risk measured at different frequencies into a single pricing equation. Our setup allows investors with different investment horizons to experience varying levels of systematic risk, potentially due to delayed stock price reactions to systematic factor news. We find that the outperformance of Fama-French factors compared to macroeconomic factors in the cross-sectional fit of expected returns disappears when accounting for these horizon effects. The results show that different factors are priced at different horizons and that optimal portfolio compositions are horizon-dependent.

Multiple Shock Impulse Response Functions

Terri van der Zwan

Winner Ph.D. Paper Competition of the European Central Bank Conference on Forecasting Techniques (2023)

This paper introduces multiple shock impulse response functions, which consider the cumulative effects of simultaneous shocks within one period. The concept generalizes individual shock impulse response functions, accounts for the dependence between shocks, and is applicable to various multivariate time series models. It is relevant for identifying underlying primitive structural shocks and using regional shocks as global structural proxies. Simulation studies highlight its necessity for accurately interpreting the total effect of shocks and mitigating potential temporal aggregation issues. Applied to a global vector autoregression framework for France, Germany, Italy, and Spain, multiple shock impulse response functions offer insights into monetary policy dynamics during uncertainty spikes and serve as a stress test. For area-wide equity shocks, they align more closely with long-term theoretical expectations than the traditional GDP-weighted method, highlighting their ability in capturing economic dynamics.

Work in progress

Free Range: How important is the space of hyperparameters to the forecasting performance of machine learning models?

jointly with Yanki S. Kalfa and Allan Timmermann

Presentations

Invited talks: Fall Macro Seminar of University of Houston, November 14, 2022.

Given talks at international conferences and seminars, poster session marked with *.

2023	*European Winter Meeting of the Econometric Society*, Manchester, UK
	*Lustrum event of TopQuants**, Amsterdam
	*12th European Central Bank Conference on Forecasting Techniques**, Frankfurt, Germany
	ASSA Annual meeting (AFA)*, New Orleans, Louisiana, US
2022	*Midwest Econometrics Group 2022 Conference*, Lansing, Michigan, US
	Seminar at Rady School of Management, San Diego, California, US
	Annual Congress of the European Economic Association (EEA-ESEM), Milan, Italy
	Annual Meeting of the Society for Financial Econometrics (SoFiE),
	Young Scholar Post-Conference, Cambridge, UK
	8th Annual Conference of the International Association of Applied Econometrics (IAAE), London, UK
	4th International Conference Quantitative Finance and Financial Econometrics (QFFE), Marseilles, France
	Annual Society of Non-linear Dynamics Symposium (SNDE), hosted online
	Econometric Institute PhD conference, Rotterdam

2021 *8th Annual Conference of the International Association for Applied Econometrics* (IAAE), hosted online
European Meeting of the Econometric Society (EEA-ESEM), ESEM part, hosted online
ESE Female Network Event of Erasmus University Rotterdam, hosted online
Econometric Institute seminar, hosted online

2018-2021 *11th Financial Risks International Forum of the Louis Bachelier Institute*, Paris, France
2nd International Conference on Econometrics and Statistics (EcoSta), Hong Kong
Netspar International Pension workshop, Leiden
Finance seminar University of Amsterdam, Amsterdam
ERIM Seminar, Rotterdam

Professional Experience

ABN AMRO Bank   Jan. 2018 – June 2018
Global Markets Intern (27 hrs/wk) – C&IB, Trading and Quantitative Analysis dept.   Amsterdam, The Netherlands
- Quantitative analyst working with Trading and Quantitative Analysis department to enhance Credit Value Adjustments (CVA) for equity derivatives.
- Came up with a model that exploits industry-specific counterparty risk in Python, adhering to Basel III requirements, resulting in more accurate default risk assessments.
- Analyzed PNL risk sensitivity to counterparty default metrics, and briefed Global Capital Markets stakeholders.

Ortec Finance   Apr. 2017 – June 2018
Quantitative Research Intern (9 mo. fulltime, 6 mo. 18 hrs/wk)   Rotterdam, The Netherlands
- Derived and implemented a spectral framework to identify the drivers of equity returns in factor models on varying investment horizons.
- Methods used: principal component analysis, dynamic factor models.

Awards, Grants and Achievements

Winner Ph.D. Paper Competition of the European Central Bank Conference   2023
Fulbright Doctoral Award *(selected by NWO and Fulbright Commission)*   2022
SoFiE Early-Career Scholars Prize, runner-up *(paper joint with Van der Wel and Kole)*   2022
Travel Scholarship Awards *(AFA, IAAE, Society of Financial Econometrics; SoFiE)*   2022
STOER Trust Fund *(funding for summer school and research visit)*   2021, 2022
Econometric Game, finalist and team captain *(University of Amsterdam, VSAE)*   2021
Sino-Dutch Scholarship of NUFFIC's Excellence and Exchange Program   2018

Teaching

2022: *Seminar in Applied Econometrics* (M.Sc. Econometrics).
Supervising 4 groups of 3-5 students working for 12 weeks on an empirical econometric problem.

2021 – 2022: *Introductory Seminar Case Studies Econometrics and Operations Research* (B.Sc. Econometrics).
Supervising 20+ groups of 3-5 students working for 2 weeks on a financial case.

2019 – present: *Thesis supervision and co-reading* (B.Sc. and M.Sc. Econometrics).

2019 – 2021: *Seminar in Financial Econometrics* (B.Sc. Econometrics).
Supervising 4 groups of 3-5 students working for 8 weeks on an empirical econometric problem

2019 – 2021: *Asset Pricing* (M.Sc. Econometrics/Financial Economics).

2019 – 2020: *Academic Skills* (B.Sc. Econometrics).

2016 – 2017: *Teaching assistant Mathematics 2* (B.Sc. Economics and Business Economics).

2016 – 2017: *Teaching assistant Statistics* (B.Sc. Econometrics).

2016 – 2017: *Teaching assistant Operations Management* (B.Sc. International Business Administration).

Proficiencies

Programming Languages and Cloud: Python, Matlab, R, Bash, SQL, Java, SLURM (distributed computing).
Data Gathering: Eikon/Datastream, Bloomberg, various APIs.
Software: LaTeX, MS Office, Adobe Illustrator
Languages: Dutch (native), English (fluent), Mandarin Chinese (B2), German (B2).

Extracurricular activities

Member of the ESE School Council   Sept. 2021 – Aug. 2023
- Elected staff member of the Erasmus School of Economics School Council.

13th Board Chinese Student Association EUR   July 2016 – Aug. 2017
Board Member, Internal Relations Manager and Head of Cultural Events (16 hrs/wk)
- Managed 35 active members, secured funding, and executed events on a limited budget.
- Founded the Cultural Events committee (5 members), organized 8 events + a city trip for 40 students.

Professional activities

Refereeing: International Journal of Forecasting.
Organizing: Co-organisor TI Econometrics Lecture Series (2023).

References

Prof. Michel van der Wel. (*Email*: vanderwel@ese.eur.nl).
Professor Econometrics of Macro-Finance and Vice Dean of Education at the Econometric Institute, Erasmus School of Economics, Erasmus University Rotterdam.

Prof. Robin L. Lumsdaine. (*Email*: robin.lumsdaine@american.edu).
Crown Prince of Bahrain Chair in International Finance at Kogod School of Business, American University.
Professor of Applied Econometrics at Erasmus University Rotterdam.

Prof. Allan Timmermann. (*Email*: atimmermann@ucsd.edu).
Distinguished Professor of Finance at University of California, San Diego.
Dr. Harry M. Markowitz Endowed Chair in Finance and Investing.

Prof. Erik Kole. (*Email*: kole@ese.eur.nl).
Assistant Professor at the Econometric Institute, Erasmus School of Economics, Erasmus University Rotterdam.