

Curriculum Vitae

Rickard Sandberg

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Appointments

- Head of Center for Data Analytics, SSE, 2018 (present)
- Head of Center for Forecasting and Data Analytics (CFDA, a SIR center), 2018 (present)
- Adjunct Associate Professor at the Graduate School of Global Food Resources. Faculty member for agricultural economics and econometrics, Hokkaido University, Japan, 2017-2021
- Head of Center for Economic Statistics, SSE, 2015-2018
- Affiliation with the Economics Department, SSE, 2012-2019
- Associate Professor (tenured) in Economic Statistics, Center for Economic Statistics, SSE, 2012 (current title)
- Docent in Economic Statistics, Center for Economic Statistics, SSE, 2012
- Assistant Professor, Center for Economic Statistics, SSE, 2006-2011

Education

- PhD in Econometrics. Supervisor: Changli He. Second supervisor: Timo Teräsvirta. Thesis: "Testing the unit root hypothesis in nonlinear time series and panel models," SSE, 2005
- MSc in Mathematics. Thesis: "The mathematics behind the Black and Scholes differential equation," University of Karlstad, 1999
- MSc in Economics. Thesis: "Prediction of the OMX-forward with weighted implied volatility and historic forward movements," University of Karlstad, 1999
- BSc in Statistics. Thesis: "Stochastic differential equations," University of Karlstad, 1999

Research Interests

- Machine Learning; Deep Learning; Data Analytics; Predictive Analytics; Business Forecasting; Nonlinear Time Series Modelling; Multivariate Time Series Modelling; Structural Economic Modelling; Econometrics; Statistics; Measuring and Modelling Sustainability

Selected Publications¹

- “Calculating the damage of a cartel subject to transition periods: The international uranium cartel in the 1970s,” *Energy Economics*, 2019 (rankings: A ABDC, 3 ABS)

Abstract: The theory about cartel pricing and descriptive price statistics suggests that the price path over a cartel life cycle can be subject to gradual, non-linear transitions where the price path moves from (to) the non-collusive to (from) the maximum collusive equilibrium. Ignoring such transitions can lead to biased estimates of the cartel and damage effects. Smooth transition regression (STR) models are a class of models well suited to capture such transitions, also under realistic conditions when the transition start and end dates are uncertain, and when the two transitions are asymmetric. We evaluate the international uranium cartel during the 1970s, using both the mainstream approach based on a linear specification with a dummy variable to capture the cartel, and an STR model. We are the first to use STR models in the evaluation of a cartel/damage effect. Using the STR model, we find that the damage effect is about 18 times higher as compared to the mainstream model.

- “Unit Root Testing in Multiple Smooth Break Models with Nonlinear Dynamics,” *Journal of Time Series Analysis*, 2018 (rankings: A ABDC, 3 ABS)

Abstract: This work builds a flexible model accommodating nonlinear dynamics around a trend function with multiple (up to m) gradual shifts. Such a model is suitable for capturing the behavior of many post World War II economic time-series subject to the onset of external causes such as oil crises, financial crises, technology changes and regulatory changes. Deriving unit root tests in this nonlinear model is of particular interest. In fact, the options of a general trend specification and nonlinear dynamics are critical to remedy unit root tests not being biased toward a non-rejection of a unit root hypothesis and prevents the first-differences of a series from being used too often. An asymptotic theory for the unit root tests is also established. The unit root tests are applied to G7 industrial production series, and evidence in favor of nonlinear trend ‘stationary’ models is found in a majority of the cases. The merits of the new model are further demonstrated in an estimation exercise for the US industrial production series, and evidence of four gradual shifts in the trend, different growth patterns for different periods, and business cycle asymmetries is found.

- “Sample Moments and Weak Convergence to Multivariate Stochastic Power Integrals,” *Journal of Time Series Analysis*, 2017 (rankings: A ABDC, 3 ABS)

Abstract: This work considers sample moments arising from least squares, least absolute deviation, and extremum estimators of linear and nonlinear systems with $I(1)$ regressors. The sample moments are shown to converge weakly to multivariate stochastic power integrals, and these results can be considered as a multivariate generalization of the univariate results by Sandberg (2009, *Econometric Theory*).

- “Testing for Unit Roots in Nonlinear Heterogeneous Panels with Smoothly Changing Trends: An Application to Scandinavian Unemployment Rates,” *Economic Modelling*, 2016 (rankings: A ABDC, 2 ABS)

Abstract: This paper derives panel unit root tests, based on the unit root tests in single time series by He and Sandberg (2006), in a nonlinear dynamic heterogeneous panel accommodating smooth structural changes in the

¹ Rankings in the ABS list were standardized as: 4* (a world elite journal); 4 (a top journal); 3 (a highly regarded journal); 2 (a well-regarded journal); and 1 (a recognized journal). The ABDC list groups the journals into A* (best or leading journal in its field); A (highly regarded journal in the field or subfield); B (well-regarded journal in the field or subfield); C (recognized journal).

intercepts, in the dynamics, and in the trends. The finite sample size properties of the tests are satisfactory, and the tests are conspicuously more powerful than the panel data unit root tests by Im, Pesaran, and Shin (2003), Im, Lee, and Tieslau (2005), and Pesaran (2007) in panels subject to structural changes. To accommodate panels with cross-section dependent idiosyncratic errors, a bootstrap version of the tests is considered. The tests are applied to unemployment rates in Scandinavia, and strong evidence against the hysteresis hypothesis is found. This is not the case if panel unit root tests based on a linear panel or a nonlinear panel with a break in the intercept are applied.

- “Trends, Unit Roots, Structural Changes, and Time-varying Asymmetries in U.S. Macro-economic Data: The Stock and Watson Data Re-examined,” *Empirical Economics*, 2015 (rankings: A ABDC, 2 ABS)

Abstract: *This article considers simple least squares based unit root tests in time series models accommodating nonlinear trends and time-varying deepness and steepness in the dynamic law. The unit root tests are applied to 214 U.S. post-war macroeconomic time series (the same data set as in Stock and Watson, 1999 and Lundbergh, Teräsvirta, and van Dijk, 2003), and the overall rejection rate allowing for a linear (nonlinear) trend specification is 50% (67%). The highest rejection rate by an individual test is 40% (53%) and it arises from a time-varying steepness model. The lowest rejection rate of an individual test is the one by the ADF test and equals 12% (19%). The steps of unit root testing and model building are illustrated in more detail for U.S. unemployment rates. The unit root hypothesis is rejected for this series, and successive specification tests and estimation results yield evidence in favor of a stable TV-MSTAR model with more momentum in unemployments increases than in unemployment decreases.*

- “Inside the black box of outcome additionality: Effects of early-stage government subsidies on resource accumulation and new venture performance,” (joint with Anna Söderblom, Mikael Samuelsson and Johan Wiklund) *Research Policy*, 2015 (rankings: A* ABDC, 4* ABS)

Abstract: *This paper examines the outcome additionality of prestigious early-stage government subsidies. Drawing on arguments from liabilities of newness and certification literatures we develop a mediated model that unpacks the outcome additionality of the subsidy. We hypothesize that subsidized new ventures attract more human and financial capital than their non-subsidized counterparts because the association with a prestigious government organization signals legitimacy of the new venture. Such legitimacy is crucial for attracting qualified employees and financiers. The effect of the access to human and financial capital in turn, has long-term and substantial influence on performance, whereas the effect of the subsidy itself is marginal and short-lived. Applying a novel matching approach, we compare 130 approved applicants of a prestigious government subsidy with a control group of 154 applications rejected at the very last stage, thereby overcoming some of the selection and endogeneity biases associated with similar studies. The hypothesized model receives strong support by the data. These findings have several implications for government support of new ventures as well as scholars in the field.*

- “Testing for a Unit Root in Noncausal Autoregressive Models,” (joint with Pentti Saikkonen) *Journal of Time Series Analysis*, 2015 (ranking: A ABDC, 3 ABS)

Abstract: *This work develops likelihood-based unit root tests in the noncausal autoregressive (NCAR) model formulated by Lanne and Saikkonen (2011, *Journal of Time Series Econometrics* 3, Iss. 3, Article 2). The possible unit root is assumed to appear in the causal autoregressive polynomial and for reasons of identification the error term of the model is supposed to be non-Gaussian. In order to derive the tests, asymptotic properties of the maximum likelihood estimators are established under the unit root hypothesis. When the error term of the model is symmetric the limiting distributions of the proposed tests depend on a single nuisance parameter, and a simple procedure to handle this difficulty in applications is proposed. In the case of skewed errors a bootstrap*

procedure to the nuisance parameter problem is discussed. Finite sample properties of the tests are examined by means of Monte Carlo simulations. The results show that the size properties of the tests are satisfactory and that clear power gains against correctly specified stationary NCAR alternatives can be achieved in comparison with conventional Dickey-Fuller tests, the M-tests of Lucas (1995, *Econometric Theory* 11, 331-346), and the tests of Rothenberg and Stock (1997, *Journal of Econometrics* 80, 269-286). In an empirical application to a Finnish interest rate series evidence in favour of a stationary NCAR model with leptokurtic errors is found.

- “M-Estimator Based Unit Root Tests in the ESTAR framework,” *Statistical Papers*, 2014

(ranking: B ABDC)

Abstract: Building on work of Lucas (1995a) we derive the limiting distribution for M-estimator based unit root tests in the ESTAR model. This yields that the LS based unit root tests by Kapetanios, Shin, and Snell (2003) and Rothe and Sibbertsen (2006) are robustified in an outlier context. We also consider an LS based heteroscedasticity robust version (White’s) of one of our unit root tests as a “quick fix” solution to the problems of outliers. Finite sample properties of the tests are examined, and in the case of additive outliers it is shown that the LS based tests are grossly over-sized whereas the size of our tests is close to the nominal size. If an ESTAR model with innovation outliers is considered, significant power gains over the LS based tests are shown by using our robust tests.

- “Testing Parameter Constancy in Unit Root Autoregressive Models against Multiple Continuous Structural Changes,” (joint with Changli He) *Econometric Reviews*, 31, 34-59, 2012 (rankings: A ABDC, 3 ABS)

Abstract: This article considers tests for logistic smooth transition autoregressive (LSTAR) models accommodating multiple time dependent transitions between regimes when the data generating process is a random walk. The asymptotic null distributions of the tests, in contrast to the standard results in Lin and Teräsvirta (1994), are nonstandard. Monte Carlo experiments reveal that the tests have modest size distortions and satisfactory power against LSTAR models with multiple smooth breaks. The tests are applied to Swedish unemployment rates and the hysteresis hypothesis is over-turned in favour of an LSTAR model with two transitions between extreme regimes.

- “Convergence to stochastic power integrals for dependent heterogeneous processes,” *Econometric Theory*, 25, 739–748, 2009 (rankings: A* ABDC, 4 ABS)

Abstract: Building on work of Hansen (1992, *Econometric Theory* 8, 489–501), we show weak convergence for power transformations of integrated processes, with possibly serially correlated and heterogeneously distributed increments, to stochastic power integrals. The theory is applicable when testing the unit root or cointegration hypothesis in nonlinear systems by regression-based test statistics.

- “Critical values for linearity tests in time-varying smooth transition autoregressive models when data are highly persistent,” *Econometrics Journal*, 11, 638–647, 2008 (rankings: A ABDC, 3 ABS)

Abstract: In this paper, we derive asymptotic distributions for linearity tests in time-varying smooth transition autoregressive models in the presence of a unit root. The limiting distributions are non-standard because of the unit root assumption, and it is shown that the linearity hypothesis is rejected far too often (up to 30.9% of the times at a 5% significance level) when using critical values from a chi-square distribution.

- “Dickey-Fuller type of tests against nonlinear dynamic models,” (joint with Changli He) *Oxford Bulletin of Economics and Statistics*, 68, 835–861, 2006 (rankings: A ABDC, 3 ABS)

Abstract: In this paper, we introduce several test statistics testing the null hypothesis of a random walk (with or without drift) against models that accommodate a smooth nonlinear shift in the level, the dynamic structure and

the trend. We derive analytical limiting distributions for all the tests. The power performance of the tests is compared with that of the unit-root tests by Phillips and Perron [Biometrika (1988), Vol. 75, pp. 335–346], and Leybourne, Newbold and Vougas [Journal of Time Series Analysis (1998), Vol. 19, pp. 83–97]. In the presence of a gradual change in the deterministic and in the dynamics, our tests are superior in terms of power.

Book Chapters (peer reviewed)

- “Least Absolute Deviation Based Unit Root Tests in Smooth Transition Type of Models,” *Advances on Non-Linear Economic Modelling: Theory and Applications, Springer Series: Dynamic Modelling and Econometrics in Economics and Finance, 2013*

Abstract: Building on work by Phillips (1991), we derive LAD based unit root tests in a first-order ESTAR model with strong mixing innovations. Further theoretical results are derived and LAD based unit root tests in general nonlinear first-order dynamic models admitting a Taylor-series approximation are thereby easily obtained. Finite sample properties of the tests are explored using Monte Carlo experiments. The results show that the size properties of the tests are satisfactory, and the power against stationary ESTAR alternatives with innovational outliers is significantly higher than the power of the LS based unit root tests by Kapetanios, Shin, and Snell (2003) and Rothe and Sibbertsen (2006). In contrast, the LS based tests are more powerful than our tests in the case of stationary ESTAR models with Gaussian errors (no outliers). In an empirical application to eight real effective exchange rates (for major economies), evidence of the PPP hypothesis is supported for six of the countries using our tests. If LS based tests are instead used, the PPP hypothesis is supported for three countries only (countries for which the PPP hypothesis is also supported by our tests).

- “Linearity Testing for Trending Data with an Application of the Wild Bootstrap,” (joint with Robinson Kruse) *Essays in Nonlinear Time Series Econometrics: Festschrift in Honor of Timo Teräsvirta, Oxford University Press, 2013*

Abstract: Building upon the work of Vogelsang (1998) and Harvey and Leybourne (2007) we derive tests that are invariant to the order of integration when the null hypothesis of linearity is tested in time-varying smooth transition models. The asymptotic properties of the tests are studied. Our Monte Carlo simulations suggest that the newly proposed tests exhibit good size and competitive power properties. An empirical application to US inflation data from the Post-Bretton Woods period underlines the empirical usefulness of our tests.

Professional Activities

2020

- Lecture on Data Driven Decision Making, Executive Education, SSE
- FWF Young Independent Researcher Groups jury member, Vienna
- Head of recruitment team CDA and HOI (joint with Prof. Magnus Mähring; position: full time professor), SSE
- Visiting Adjunct Professor (faculty member for agricultural economics and econometrics) at the Graduate School of Global Food Resources, Hokkaido University (Japan), August

2019

- Responsible for course contents and development of Data Analytics courses for the new BSc-program (starting 2020) at SSE
- Arranging the 10th Nordic Econometric Meeting 2019 in Stockholm, SSE

- Coordinator for the new MSc Data Analytics track at SSE
- Opponent on Erik Linden's PhD thesis: "Competition Economics and Damage Estimation – Empirical Theory and Practice," Aarhus University (CREATES)
- Opponent on Juho Nyholm's PhD thesis: "Non-invertible ARMA Models," University of Helsinki
- Member of the Independent Research Fund Denmark (DFF) Committee on Digital Technologies
- Creating a Module on Data Driven Decision Making in the program Digital Innovation, Executive Education, SSE
- Lecture on Data Driven Decision Making, Executive Education, SSE
- Expert opinion on sampling customer data for ICA, Stockholm
- Best paper award committee for Vienna University of Economics and Business
- Workshop on "Forecasting" at TRINE, Gothenburg
- Workshop on "Predictive Analytics and Forecasting" at H&M, Stockholm
- External expert for the assessment of an assistant professor position in Statistics, Växjö University
- Visiting adjunct professor (faculty member for agricultural economics and econometrics) at the Graduate School of Global Food Resources, Hokkaido University (Japan), August

2018

- EMBA lecture on "Predictive Analytics", SSE
- Grading committee for PhD candidate Erik Sverdrup (PhD thesis entitled: "Essays in Financial Economics"), SSE
- Head of the recruitment team CDA (position: assistant professor/tenure track), SSE
- Organizing the Nordic Econometric Meeting (NEM 2019), SSE
- Workshop on "Forecasting", at ICA, Stockholm
- Visiting adjunct professor (faculty member for agricultural economics and econometrics) at the Graduate School of Global Food Resources, Hokkaido University (Japan), March and August

2017

- Stockholm Business Forecasting Group (SBFG) initiated (together with Professor Nikolaos Kourentzes, Lancaster University Management School and Skövde University), *ongoing initiative*
- Business Statistics Lecture for MBA students, Hanken School of Economics (Finland)
- Reviewer for papers at the Nordic Econometric Meeting in Tartu
- Grading committee for PhD candidate Simon Reese (PhD thesis entitled: "Estimation and Testing in Panel Data with Cross-Section Dependence"), Lund University
- Visiting adjunct associate professor (faculty member for agricultural economics and econometrics) at the Graduate School of Global Food Resources, Hokkaido University (Japan), March and August

2016

- Head of the recruitment team CDA (position: assistant professor/tenure track), SSE
- Best Paper Award Committee member for Vienna University of Economics and Business
- Visiting researcher, University of Gothenburg, Department of Economics
- Teaching evaluation Erik Lindqvist, SSE

2015

- Elected for the steering committee of the Nordic Econometric Network, **ongoing**
- Visiting researcher, University of Aarhus, Center for Research in Econometric Analysis of Time Series (CREATES)
- Discussant on Irina Andone's Licentiate thesis: "Exchange Rate Regimes and Inflation Performance," Uppsala University
- Teaching evaluation Juanna Joensen, SSE
- Best paper award committee member for Vienna University of Economics and Business
- Project evaluator, City University of Hong Kong
- External expert for the assessment of an Assistant Professor position in Statistics, Örebro University,
- Grading committee for PhD candidate Rafael Barros de Rezende (PhD thesis entitled: "Essays on Micro-Financial Linkages"), SSE
- Member of the PhD admission board, Economics Department, SSE, **2013-2015**

2014

- Developing the electronic application system for PhD studies at the Economics Department (later this system was adopted by the other departments at SSE), SSE
- Grading committee for PhD candidate Johannes Breckenfelder (PhD thesis entitled: "Empirical Essays in Financial Economics"), SSE
- Grading committee for PhD candidate Arna Vardar Dottir (PhD thesis entitled: "Essays in Applied Micro-Econometrics Using Spatial Data"), SSE
- Visiting researcher, University of Aarhus, Center for Research in Econometric Analysis of Time Series (CREATES)
- Best paper award committee, Vienna University of Economics and Business
- Grading committee for PhD candidate Abel Schumann (PhD thesis entitled: "Essays in Applied Micro-econometrics Using Spatial Data"), SSE

2014

- External expert for the assessment of Assistant Professor in Statistics, Uppsala University
- Grading committee for PhD candidate Feng Li (PhD thesis entitled: "Bayesian Modelling of Conditional Densities"), Stockholm University

- Visiting researcher, University of Aarhus, Center for Research in Econometric Analysis of Time Series (CREATES)
- Project evaluator, City University of Hong Kong
- Opponent on Yukai Yang's PhD thesis: "Modelling Nonlinear Vector Economic Time Series," Aarhus University (CREATES)
- Discussant on Martin Solberger's Licentiate thesis: "Likelihood based test for idiosyncratic unit roots in a dynamic factor model with integrated factors," Uppsala University

2005-2013

- Visiting researcher, University of Aarhus, Center for Research in Econometric Analysis of Time Series (CREATES)
- Discussant on Gustaf Sporrang Thesis Proposal (entitled: "Essays on co-movement in international stock markets"), Stockholm University
- Advisor in Econometric and Statistics at the Economics Department, SSE, 2009-2010
- Visiting researcher, University of Aarhus, Center for Research in Econometric Analysis of Time Series (CREATES), 2008
- Discussant on Daniel Preve's Licentiate thesis: "Estimation for a class of constrained ARMA processes," Uppsala University, 2007
- Guest researcher at the Research Department at the Swedish Central Bank, 2006-2007
- Member of the PhD admission board at the Center for Economic Statistics, SSE, 2005-2006
- Visiting scholar, Cambridge University, Faculty of Politics and Economics, 2005
- Visiting fellow, University of Technology Sydney, School of Finance and Economics, 2005

Teaching Experience

- Data Analytics II - undergraduate course, lecturer, SSE, 2021-
- R - MSc course, lecturer, SSE, 2020-
- Supervision independent study in econometrics (BSc level), SSE, 2020-
- Lecture on Statistics and Machine Learning, SSE, 2019
- Lectures on Econometrics and Statistics in the Master Program in International Business (MIB), SSE, 2018 -
- Lecture on Business Statistics for MBA students, Hanken School of Economics (Finland), 2017
- Lecture on "Nonlinear time series modelling" (MSc level), SSE, 2014-2018
- Methods for Empirical Analysis I - first year PhD course, lecturer, SSE, 2016-
- Methods for Empirical Analysis II - second year PhD course, lecturer, SSE, 2017, 2019
- Quantitative Methods and Analysis - second year PhD course, lecturer, SSE, 2016
- Quality of Statistical Data - first year PhD course, lecturer, SSE, 2016
- Lecture on "Nonlinear time series modelling in Finance" (MSc level), City University of Hong Kong, (Hong Kong), 2015

- Lecture on “Nonlinear time series modelling in Finance” (MSc level), Uppsala University, 2015
- Lectures on “Time Series Analysis” (MSc level), Uppsala University, 2015
- Applied Econometric Time Series - MSc course, lecturer, SSE, 2013-
- Lecture on “How to handle data: missing values, outliers and other pitfalls” (MSc level), SSE, 2013
- Statistics - first year PhD course, lecturer, SSE, 2005-2012
- Statistical Inference - undergraduate course, lecturer, SSE, 2002-2012
- Time Series Econometrics - second year PhD course, SSE, lecturer, 2008-
- Econometrics - first year PhD course, lecturer, SSE and Stockholm University, 2008, 2011
- Probability Theory - undergraduate course, SSE, lecturer, 2001-2002
- Econometrics - first year PhD course, SSE, teaching assistant, 2002-2004
- Mathematics - undergraduate course, SSE, teaching assistant, 2001
- Mathematics – high school (Tingvalla Gymnasium, Karlstad), senior high school teacher, 1995-1998

Consultancies and External Projects

- Senior advisor Vinter Capital, Stockholm, 2019 (present)
- AP1 and SEB, external partners for the research project: “On Accountable Measurement of Corporate Sustainability; the Need for a Sustainability Index,” 2019
- Project on: “Forecasting economic factors for the cost calculations of storing Sweden’s nuclear waste,” on the behalf of SKB AB, reviewed by SSM and decision material for the Swedish Government, 2013 (present)
- Senior advisor CFI, Stockholm, 2014 (present)
- Panel discussant on Customer Asset Management, CFI, 2016
- Assessment on the pricing of business district areas in Stockholm (material prepared for court case), on the behalf of Niam AB, 2015
- Lecture on: “Business Management Statistics” at CFI, 2015
- Senior advisor on Customer Satisfaction at Vattenfall Group AB, 2013
- Senior advisor on Marketing Models at Formulate, 2013-2014
- Project on: “Customer Selection Modelling,” on the behalf of Svensk Lånemarknad, 2012
- Project on: “Credit risk modelling in the Baltic Countries,” on the behalf of Swedbank, 2010

Working Papers

- “Outlier Robust Unit Root Tests in Nonlinear Dynamic Models” (submitted)
- “Unit root testing in Vector STR models” (submitted)
- “ L_1 -estimation in nonlinear dynamic models with unit roots”
- “Extremum estimators in integrated nonlinear VAR models”
- “LAD-estimation in integrated nonlinear VAR models”
- “A simple nonlinear asset pricing model: applications to U.S stocks”

- “The STR Capital Asset Pricing Model”
- “Testing linearity in integrated nonlinear dynamic models with exogenous covariates”

Grants

- Nasdaq Nordic Foundation Grant. Amount: 2,090,000 SEK for the project (joint with Emma Sjöström and Anders Westlund): “On Accountable Measurement of Corporate Sustainability; the Need for a Sustainability Index,” 2019
- Jan Wallander and Tom Hedelius and Tore Browaldhs Foundation Grant No. Fv18-0028. Amount: 220,000 SEK for arranging the Nordic Econometric Meeting 2019 in Stockholm – a 10th Anniversary, 2019
- Torsten Söderbergs Research Grant. Amount: 1,720,000 SEK for the project (joint with Sara Rosengren and Emelie Fröberg): “Retail data (“Big Data”) and Predictive Analysis,” 2017
- Jan Wallander and Tom Hedelius Research Grant No. P2016-0293:1. Amount: 2,000,000 SEK for the project: “Modelling Multivariate Nonlinear Economic Time Series: Applications and Theory,” 2016
- Jan Wallander and Tom Hedelius Research Grant No. P2012-0085:1. Amount: 2,000,000 SEK for the project: “Robust Modelling and Forecasting of Nonlinear Macroeconomic Time-Series Models: Theory and Applications,” 2012
- Louise Fraenckel Travelling Grant, 2009, 2010, 2011
- Jan Wallander and Tom Hedelius Post Doctoral Grant No. W2005-0103:1. Amount: 1,125,000 SEK, 2006-2008
- Riksbankens Jublieums Grant. Amount: 2,000,000 SEK for the project (joint with Changli He): “Nonlinear cointegration,” 2005
- Carl Silfvéns Travelling Grant, 2005
- Jan Wallander and Tom Hedelius Foundations No. J02-35, 2001-2005

Awards and Distinctions

- Invited to the Vice President Degree Programs Luncheon celebrating outstanding performance in teaching (Course: Applied Econometric Time Series), SSE, 2015-2019
- The Nordea teacher of the year award, SSE, 2010

Memberships

- The Econometric Society; The Nordic Econometric Network; AI-playground

Supervision

- *Main supervisor PhD thesis:* (1) Mohammad Irani, Department of Business Administration, Stockholm Business School; (2) Elle Parslow, Department of Economics, SSE; (3) Carl Barkfeldt, Department of Accounting, Uppsala University; (4) Tanetpong Choungprayoon, Center for Data Analytics and Center for Retailing, SSE; (5) Huong Ngoc Lan Nguyen, Center for Data Analytics and Center for Retailing, SSE

- *Second Supervisor PhD thesis:* (1) Ingolf Klopfenburg, Department of Accounting, SSE; (2) Peter Aleksiev, Department of Accounting, SSE; (3) Noor Alshamma, Department of Accounting, SSE; (4) Svetlana Kosovanna, Center for Retailing, SSE; (5) Adam Åbonde, Department of Marketing and Strategy, SSE
- *Supervisor MSc thesis (SSE students):* Costanza Gai, Diana Iovanel; Daniel Heimgartner; Tina Emambakhsh; Zhangya Zhou; Yuwei Pei; Ann Marie Hammond; Noah Clason; Maria Dimou; Gustav Fredriksson; Maximiliane Hoerl; Rokas Narkus; Maximilian Pagel; Aleh Plashchynski; Eric Ramstedt; Martin Rassel; Marcus Rommedahl; Giovanni Sciacovelli; Christian Siebert; Tina Sidenmark; Cecilia Toivonen; Andreas Willgert; Johanna Melinder, Sebastian Dypbukt Källman; Alice Dominici; Hanna Eklöf

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Refereeing

- Canadian Journal of Statistics; Communications in Statistics – Theory and Methods; Communications in Statistics - Simulation and Computation; Econometric Theory; Empirical Economics; Information; International Economic Journal; Journal of Applied Econometrics; Journal of Applied Statistics; Econometric Journal; Journal of Business and Economic Statistics; Journal of Time Series Analysis, Computational Statistics and Data Analysis Journal; Scandinavian Journal of Statistics; International Journal of Forecasting; Econometric Reviews; Oxford Bulletin of Economics and Statistics; Stata Journal, Studies in Nonlinear Dynamics and Econometrics; Economics: The Open-Access, Open-Assessment E-Journal; The Energy Journal; American Journal of Theoretical and Applied Statistics; Jahrbücher für Nationalökonomie und Statistik (Journal of Economics and Statistics); American Journal of Theoretical and Applied Statistics; The Open Statistics & Probability Journal; Statistical Papers

Keynote Talks

- Presentation: "Testing the Unit Root Hypothesis in NCAR Models," First International Workshop in Financial Econometrics, Natal, Brazil, [2013](#)
- Presentation: "How to Measure Customer Satisfaction," Conference on Making Effective Decisions: Teaching Statistics to Students of Business," Bordeaux, France, [2016](#)

Invited Seminar Presentations

- CFE-CMStatistics (London, England) 2019; SIR Meetings, Stockholm (Sweden), Stockholm School of Economics 2019, Japanese Joint Statistical Meeting, Nagoya (Japan) 2017; Helsinki (Finland), University of Helsinki, Statistics Department, 2017; Uppsala (Sweden), Uppsala University, Statistics

Department, 2017; Lund (Sweden), Lund University, Statistics Department, 2016; Uppsala (Sweden), Uppsala University, Statistics Department, 2014; Helsinki (Finland), University of Helsinki, Statistics Department, 2013; Uppsala (Sweden), Uppsala University, Statistics Department, 2013; Hanover (Germany), University of Hannover, Statistics Department, 2013; Natal (Brazil), First International Workshop in Financial Econometrics (Key note speaker), 2013; University of Aarhus, CREATES (Aarhus, Denmark), 2012; Mannheim (Germany), Nonlinear Modelling: Theory and Applications Workshop at Zentrum für Europäische Wirtschaftsforschung (ZEEW), 2012; Ebeltoft (Denmark), Nonlinear Time Series Econometrics Conference in Honor of Timo Teräsvirta, 2012; University of Aarhus, CREATES (Aarhus, Denmark), 2011; Uppsala University, Department of Economics (Stockholm, Sweden), 2010; University Paris 1, Department of Economics and Management (Paris, France), 2009; University of Aarhus, CREATES (Aarhus, Denmark), 2009; University of Helsinki, Department of Mathematics and Statistics (Helsinki, Finland), 2008; Stockholm University, Department of Statistics (Stockholm, Sweden), 2007; Stockholm School of Economics, Department of Economic Statistics (Stockholm, Sweden), 2007; Uppsala University, Department of Economics (Stockholm, Sweden), 2007; Swedish Central bank, Research department (Stockholm, Sweden), 2007; Stockholm School of Economics, Department of Economic Statistics (Stockholm, Sweden), 2006; Uppsala University, Department of Economics (Stockholm, Sweden), 2006; Stockholm School of Economics, Department of Economic Statistics (Stockholm, Sweden), 2006; University of Cambridge, Department of Economics (Cambridge, England), 2005; University of Technology Sydney, School of Finance and Economics (Sydney, Australia), 2005; University of Brisbane, School of Finance and Economics (Brisbane, Australia)

Conference Presentations

- CFE-CMStatistics (London, England) 2017; CFE-CMStatistics (London, England) 2017; CFE-CMStatistics (London, England) 2015; Nordic Econometric Meeting (Helsinki, Finland), 2015; The NordStat Meeting (Turku, Finland), 2014; The 68th European Meeting of the Econometric Society (Gothenburg, Sweden), 2012; The 67th European Meeting of the Econometric Society (Malaga, Spain), 2012; The 66th European Meeting of the Econometric Society (Oslo, Norway), 2011; The 19th Symposium of the Society for Nonlinear Econometrics (Washington, US), 2011; The 64th Meeting of the Econometric Society (Barcelona, Spain), 2009; Far Eastern Meeting of the Econometric Society (Tokyo, Japan), 2009; The 63rd European Meeting of the Econometric Society (Milan, Italy), 2008; The 62nd European Meeting of the Econometric Society (Budapest, Hungary), 2007; Nordic Econometric Meeting (Tartu, Estonia), 2007; Symposium on Econometric Theory and Applications (Hong Kong, China), 2007; The 61st European Meeting of the Econometric Society (Vienna, Austria), 2006; Unit root and co-integration testing conference (Faro, Portugal), 2005; Far Eastern Meeting of the Econometric Society (Beijing, China), 2006; The European Economic Association Meeting (Amsterdam, Holland), 2005; Frontiers in Time Series Analysis (Olbia, Italy), 2005; Nordic Econometric Meeting (Helsinki, Finland), 2005; Econometric Society World Congress (London, UK), 2005; The 59th European Meeting of the Econometric Society (Madrid, Spain), 2004; The 11th International Panel Data Conference (College Station, Texas), 2004; Nordic Econometric Meeting (Bergen, Norway), 2003;

Workshop Econometric Time Series Analysis – Methods and Applications (Linz, Austria), 2003; Latin American Meeting of the Econometric Society (Panama City, Panama), 2002