

# Herman J. Bierens

## Curriculum Vitae

(February 2016)

### Affiliation

Professor Emeritus of Economics  
The Pennsylvania State University  
University Park, PA 16802  
URL: <http://grizzly.la.psu.edu/~hbierens/>

### Mailing address

407 Shadow Bend Drive  
Richardson, TX 75081  
Tel. (972)-907-9856  
E-mail: [hbierens@psu.edu](mailto:hbierens@psu.edu)

### Personal

*DOB*: January 7, 1943; *Citizenship*: Netherlands; *Visa status*: Resident Alien

### Awards

2011: Econometric Theory *Plura Scripsit* Award  
2005: Fellow of the Econometric Society  
2005: Journal of Econometrics Associate Editor Award  
1997: Econometric Theory *Multa Scripsis* Award  
1996: Fellow of the Journal of Econometrics

### Higher education

1968: Junior high school teacher's certificate in mathematics (Acte Wiskunde MO-A), University of Amsterdam  
1969: Bachelor of Science (Kandidaats) in Econometrics, University of Amsterdam  
1972: Master of Science (Doctoraal) in Econometrics, *Cum Laude*, University of Amsterdam  
1980: Ph.D. in Economics, *Cum Laude*, University of Amsterdam, for a dissertation entitled:  
*Robust Methods and Asymptotic Theory in Nonlinear Econometrics*  
Chair: Christopher A. Sims, University of Minnesota  
Co-chair: J. S. (Mars) Cramer, University of Amsterdam  
Second co-chair: Johannes T. Runnenburg, University of Amsterdam

### Languages

Dutch (native language), Fluent in English, Fair in German

### Employment

10/03/62-04/02/64: Military service  
06/15/64-10/01/65: Clerk, AMRO bank, Amsterdam  
08/20/67-01/15/68: Clerk, Municipality of Amsterdam  
01/15/68-08/01/69: Mathematics teacher, Christian high school "Pascal", Amsterdam  
01/15/70-06/01/72: Teaching Assistant, Department of Econometrics, University of Amsterdam

03/01/72-02/01/73: Research Assistant, Stichting voor Economisch Onderzoek (SEO), Amsterdam  
 02/01/72-01/01/79: Junior Research Associate, SEO  
 01/01/79-09/01/83: Senior Research Associate, SEO  
 09/01/83-09/01/86: Associate Professor of Economics, University of Amsterdam (UA)  
 09/01/86-01/01/92: Professor of Econometrics, Vrije Universiteit (VU), Amsterdam  
 09/01/91-01/01/97: Robert H. and Nancy Dedman Trustee Professor of Economics, Southern Methodist University (SMU)  
 06/01/94-06/01/99: Part-time (0.25 fte) Professor of Econometrics, Tilburg University  
 06/01/99-06/01/04: Part-time (0.10 fte) Professor of Econometrics, Tilburg University  
 01/01/97-06/30/12: Professor of Economics, Pennsylvania State University  
 07/01/12-date: Professor Emeritus of Economics, Pennsylvania State University

### **Visiting positions**

09/01/81-12/01/81: Postdoc, University of Minnesota, Minneapolis  
 11/22/84-11/28/84: Visiting Scholar, University of Lodz, Poland  
 01/02/86-03/27/86: Visiting Associate Professor, University of California, San Diego (UCSD)  
 03/16/87-03/20/87: Visiting Scholar, University of Western Ontario  
 11/27/89-12/01/89: Visiting Scholar, University of Aarhus, Denmark  
 01/01/90-06/01/90: Visiting Professor and Dedman Scholar in Residence, SMU  
 10/01/90-11/01/90: Visiting Professor, SMU  
 07/05/92-08/01/92: Visiting Professor, CentER, Tilburg University  
 06/07/93-06/27/93: Visiting Professor, Universite des Sciences Sociales de Toulouse, France  
 07/01/93-07/30/93: Visiting Professor, CentER, Tilburg University  
 08/03/98-08/29/98: Visiting Professor, CES, University of Munich, Germany  
 05/31/99-06/19/99: Visiting Professor, Institute for Advanced Studies, Vienna, Austria  
 07/29/03-08/11/03: Visiting Professor, Universidade Federal do Ceara (UFC), Brazil  
 02/14/05-02/18/05: Visiting Professor, Summer School in Applied Econometrics, UFC, Brazil  
 07/04/05-07/29/05: Visiting Professor, UFC, Brazil  
 01/19/07-03/17/07: Visiting Professor, UFC, Brazil  
 05/21/07-05/24/07: Visiting Professor, University of Aarhus, Denmark  
 02/07/09-02/15/09: Visiting Professor, Summer School in Applied Econometrics, UFC, Brazil  
 07/01/09-07/30/09: Visiting Professor, UFC, Brazil  
 07/19/10-08/19/10: Visiting Professor, UFC, Brazil  
 08/13/12-08/24/12: Visiting Professor, Nanyang Technological University, Singapore

### **Professional activities and associations**

#### ***Editing***

1981-1986: Co-Editor, *Statistica Neerlandica*.  
 1987-1990: Associate Editor, *Econometrica*.  
 1986-2004: Associate Editor, *Journal of Econometrics*.  
 1986-2004: Associate Editor, *Econometric Reviews*.

### ***Refereeing***

American Economic Review; Annals of Statistics; B.E. Journal of Economic Analysis & Policy; Computational Statistics and Data Analysis; Econometrica; Econometric Journal; Econometric Reviews; Econometric Theory; Economic Letters; Empirical Economics; International Journal of Banking, Accounting and Finance; International Review of Economics and Finance; Journal of Applied Econometrics; Journal of Business & Economic Statistics; Journal of Econometrics; Journal of Economic Behavior and Organization; Journal of Environmental Economics and Management; Journal of Forecasting; Journal of Population Economics; Journal of Statistical Planning and Inference; Journal of Time Series Analysis; Labour Economics; Missouri Journal of Mathematical Sciences, Singapore Economic Review; Statistica Neerlandica; Statistics; TEST; The Manchester School; Theoretical Economics.

### ***Reviewer***

National Science Foundation, NATO Scientific Affairs Division, Netherlands Science Organization (NWO), Social Sciences and Humanities Research Council of Canada

### ***Other professional activities***

- 1986-1988: Member of the board of the NWO-ECOZOEK Foundation.
- 1988-1989: Chairman of the board of the NWO-ECOZOEK Foundation.
- 1987-1989: Member of the Program Committee of the Econometric Society European Meetings in Copenhagen, Bologna and Munich.
- 1990: Member of the Program Committee of the World Congress of the Econometric Society in Barcelona.
- 1991: Program Chairman Econometrics of the Econometric Society European Meeting (ESEM), Cambridge, UK.

### **Conferences and invited seminars**

#### ***Keynote addresses***

- 2009 "Consistent Model Specification Tests". Keynote address delivered at the Primer Congreso Científico Internacional en Economía y Finanzas, Quito, Ecuador, May 18-22.
- 2009 "Semi-Nonparametric Modeling and Estimation". Keynote address delivered at the Primer Congreso Científico Internacional en Economía y Finanzas, Quito, Ecuador, May 18-22.
- 2015 "The Weighted Integrated Conditional Moment Test for the Validity of Stationary Time Series Regression Models". Rolf Mantel Lecture delivered at the 2015 annual meeting of the Argentine Association of Political Economy, Salta City, Argentina, November 11-13.

### ***Invited seminars***

- Belgium: CORE, Universite Catholique, Louvain-la-Neuve.  
Brazil: Universidade Federal do Ceara (UFC), Fortaleza.  
Canada: Queen's University; University of Western Ontario; University of Toronto; University of Guelph; University of British Columbia; York University; Joint econometrics seminar of the universities in Montreal.  
Denmark: University of Aarhus  
France: Universite des Sciences Sociales de Toulouse.  
Germany: University of Dortmund; Humboldt University.  
Mexico: Instituto Tecnológico Autónomo de México (ITAM).  
Netherlands: Free University; University of Amsterdam; Erasmus University; University of Maastricht; Tilburg University; Tinbergen Institute.  
Poland: University of Lodz.  
Portugal: Cemapre, Lisbon  
Singapore: Nanyang Technological University; Singapore Management University  
UK: University of Manchester.  
USA: University of Minnesota; University of Chicago; University of California, San Diego; University of California, Berkeley; Yale University; Harvard University-M.I.T; University of Southern California; Southern Methodist University; Texas A&M University; Rice University; California Institute of Technology; University of Illinois at Urbana-Champaign; Cornell University; North Carolina State University; University of Virginia; University of Texas, Austin; Pennsylvania State University; University of Pennsylvania; New York University; University of Maryland; Ohio State University; Johns Hopkins University; University of Michigan; Michigan State University; Indiana University; University of Rochester; University of Pittsburgh; University of Kansas; Princeton University; Brown University; Lehigh University; Vanderbilt University; Syracuse University.

### ***Presentation of invited papers at conferences***

- 1985: "Kernel Estimators of Regression Functions", Invited Symposium on Nonparametric and Robust Estimation, Fifth World Congress of the Econometric Society, Cambridge, MA.  
1994: "Testing the Unit Root Hypothesis Against Nonlinear Trend Stationarity", EC<sup>2</sup> meeting, Berlin.  
1995: "Nonparametric Cointegration Analysis", ERNSI Econometrics Workshop, Oud Poelgeest, the Netherlands.  
1998: "The Econometric Consequences of the Ceteris Paribus Condition in Economic Theory", Conference on Principles of Econometrics, Madison, Wisconsin.  
2001: "Complex Unit Roots and Business Cycles: Are They Real?", York's Annual One-Day Meeting in Econometrics, U.K.  
2008: "Integrated Conditional Moment Tests for Parametric Conditional Distributions", Symposium on Nonparametric Testing in Econometrics, Indiana University.  
2009: "Consistent Model Specification Tests", Primer Congreso Científico Internacional en Economía y Finanzas, Quito, Ecuador.

- 2009: "Semi-Nonparametric Modeling and Estimation", Primer Congreso Científico Internacional en Economía y Finanzas, Quito, Ecuador.
- 2010: "Integrated Conditional Moment Tests for Parametric Conditional Distributions", International Symposium on Econometrics of Specification Tests in 30 Years (TEST 2010), Xiamen, China.
- 2015 "The Weighted Integrated Conditional Moment Test for the Validity of Stationary Time Series Regression Models", Rolf Mantel Lecture delivered at the 2015 annual meeting of the Argentine Association of Political Economy, Salta City, Argentina

***Presentation of contributed papers at Econometric Society meetings***

- 1972: Winter Symposium of the Econometric Society, Le Breau, France.
- 1978: Econometric Society European Meeting (ESEM), Geneva
- 1982: Summer Meeting of the Econometric Society, Ithaca, NY.
- 1984: ESEM, Madrid.
- 1985: Econometric Society summer workshop, INSEE, Paris
- 1986-1989: ESEM, Budapest, Copenhagen, Bologna, Munich.
- 1990: World Congress of the Econometric Society, Barcelona.
- 1992-1997: ESEM, Brussels, Uppsala, Maastricht, Istanbul, Toulouse.
- 1999: ESEM, Santiago de Compostela.
- 2000: World Congress of the Econometric Society, Seattle.
- 2001-2003: ESEM, Lausanne, Venice, Stockholm.
- 2005: World Congress of the Econometric Society, London.
- 2006: ESEM, Vienna
- 2009: ESEM, Barcelona
- 2011: Latin-American Meeting of the Econometric Society (LAMES), Santiago, Chile

***Presentation of contributed papers at other conferences***

- 1984: Ecozoek Meeting, Amsterdam.
- 1986: CAMP Econometrics, Lake Arrowhead, California
- 1985: IBM workshop on Econometric Modeling, Oberlech, Austria
- 1986: Conference on Heterogeneity in Econometrics, INSEE, Paris;
- 1992: Bayesian and Classical Econometric Modeling of Time Series, Marseille
- 1994: (EC)<sup>2</sup> meeting, Berlin
- 1996: Texas Econometrics Camp.
- 1999: Texas Econometrics Camp
- 1999: Cowles Foundation Econometrics Conference
- 2000: Conference on Economic Applications of Quantile Regression, Konstanz, Germany
- 2001: Midwest Econometrics Group Meeting
- 2005: Texas Econometrics Camp
- 2005: Midwest Econometrics Group Meeting
- 2009: Greater NY Metropolitan Area Econometrics Colloquium

## Teaching experience

### *Junior high school*

Mathematics

### *Undergraduate*

Intermediate microeconomics (UA, SMU); Mathematical economics (VU); Econometrics (VU, UCSD, PSU), Forecasting (PSU, UFC)

### *Graduate*

Linear Algebra (SMU); Mathematical Statistics (UCSD, SMU, PSU); Econometrics (VU, SMU, PSU); Advanced Econometrics (VU, SMU, PSU); Applied Econometrics (SMU); Measure and Probability (SMU, PSU, UFC); Time series econometrics (PSU), Semi-nonparametric econometrics (PSU, University of Aarhus, UFC).

See <http://grizzly.la.psu.edu/~hbierens/COURSES.HTM> for the syllabi of the courses taught at Penn State.

## Ph.D. dissertation committees

### *Member*

University of Amsterdam; Free University of Amsterdam; Erasmus University Rotterdam; Technical University Eindhoven; Technical University Twente; University of Maastricht; University of Groningen; Tilburg University; Southern Methodist University (Economics, Mathematics); Penn State University (Economics, Agricultural Economics, Accounting, Marketing, Finance)

### *Advisor of visiting Ph.D. students*

Andre Hoogstrate (University of Maastricht, Netherlands, 1998)  
Roberto Ferreira (Universidade Federal do Ceara, Brazil, 2005)

### *Co-chair*

Henk Don (University of Amsterdam, 1986)  
Hans Kool (Free University, 1990)  
Erik Kroon (Free University, 1990)  
Weipeng Kong (PSU, Finance, 2004)  
Edward Glidewell (PSU, Finance, 2004)  
Sascha Claudius (PSU, 2010)

### ***Chair***

Lourens Broersma (Free University, 1992)  
Robert de Jong (Free University, 1993)  
Shengyi (Steve) Guo (SMU, 1993)  
Jose Carvalho (PSU, 2002)  
Hung-Pin Lai (PSU, 2003)  
Guang Guo (PSU, 2004)  
Luis Martins (PSU, 2005)  
Hosin Song (PSU, 2007)  
Li Wang (PSU, 2008)

### **Master thesis supervision**

Wenjiao Zhao (PSU, 2010)

### **Undergraduate honors thesis supervision**

Guanhao Feng (PSU, 2012)

### **Current research interest**

Semi-nonparametric modeling and inference.  
Econometric applications of Hilbert space theory.  
Consistent model specification testing.

### **Software**

*EasyReg International*. This is an comprehensive interactive free econometrics software package for Windows, downloadable from web page <http://grizzly.la.psu.edu/~hbierens/EASYREG.HTM>  
Current version: May 27, 2015

### **Work in progress and unpublished papers**

#### ***Work in progress***

2015: "Semi-Nonparametric Modeling and Estimation of First-Price Auctions Models with Auction-Specific Heterogeneity" (with Hosin Song)

#### ***Inactive working papers***

2011: "Nonparametric Identification of the First-Price Auction Model" (with Hosin Song)  
2007: "Econometric Analysis of a Cash-In-Advance Model" (with Hung-Pin Lai)  
2005: "Are Property-Casualty Insurance Reserves Biased? A Non-Standard Random Effects Panel Data Analysis" (with David F. Bradford)  
2003: "An Econometric Model of Credit Spreads with Rebalancing, ARCH and Jump Effects" (with Jing-zhi Huang and Weipeng Kong)

1999: "Integrated Conditional Moment Testing of Conditional Heteroskedasticity Models (with Santiago Mira)

## **Publications**

### ***Books***

- 2016 *Econometric Model Specification: Consistent Tests of Functional Form and Semi-Nonparametric Modelling and Inference*, World Scientific Publishing Company, Singapore, Forthcoming.
- 2004: *Introduction to the Mathematical and Statistical Foundations of Econometrics*, Cambridge University Press (xvii + 323 pages), reprinted in 2007.
- 1994: *Topics in Advanced Econometrics: Estimation, Testing, and Specification of Cross-Section and Time Series Models*, Cambridge University Press (xii + 258 pages).
- 1981: *Robust Methods and Asymptotic Theory in Nonlinear Econometrics*, Springer-Verlag (ix + 198 pages).

### ***Edited books***

- 1997: *Nonlinear Models, Vol. I and II*, Edward Elgar Publishing (with A. Ronald Gallant).
- 1980: *Samenleving en Onderzoek (Society and Research)*, Stenfert Kroeze (with J.J.Klant, W.Driehuis, and A.Butter).

### ***Book chapters***

- 2014: "The Hilbert Space Theoretical Foundation of Semi-Nonparametric Modeling". Chapter 1 in: J. Racine, L. Su and A. Ullah (eds), *The Oxford Handbook of Applied Nonparametric and Semiparametric Econometrics and Statistics*, Oxford University Press.
- 2001: "Unit Roots". Chapter 29 in: B. H. Baltagi (ed), *A Companion to Theoretical Econometrics*, Blackwell.
- 2001: "Integrated Conditional Moment Testing of Quantile Regression Models" (with Donna Ginther), in: B. Fitzenberger, R. Koenker and J. A. F. Machado (eds), *Economic Applications of Quantile Regression*, Physica-Verlag.<sup>1</sup>
- 1997: "Cointegration Analysis", in C. Heij, J.M. Schumacher, B. Hanzon and C. Praagman (eds), *System Dynamics in Economic and Financial Models*, John Wiley
- 1987: "Kernel Estimators of Regression Functions", in: T. F.Bewley (ed), *Advances in Econometrics: Fifth World Congress, Vol.I*, Cambridge University Press.
- 1984: "Testing Parameter Constancy of Linear Regressions", in: T. Dijkstra (ed): *Misspecification Analysis*, Springer-Verlag.

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<sup>1</sup> Reprint of "Integrated Conditional Moment Testing of Quantile Regression Models" (with Donna Ginther), *Empirical Economics* 26, 2001, 307-324.



1980: "Specificatie en Misspecificatie van het Econometrische Model: Problemen en Oplossingen" (Specification and Misspecification of the Econometric Model: Problems and Solutions), in J. J. Klant, W. Driehuis, H. J. Bierens and A. Butter (eds), *Samenleving en Onderzoek*, Stenfert Kroeze.

### ***Refereed articles in journals***

- 2014: "Weighted Simulated Integrated Conditional Moment Tests for Parametric Conditional Distributions of Stationary Time Series Processes" (with Li Wang), forthcoming in *Econometric Reviews*.
- 2014: "Consistency and Asymptotic Normality of Sieve ML Estimators Under Low-Level Conditions", *Econometric Theory* 30, 1021-1076.
- 2012: "Integrated Conditional Moment Tests for Parametric Conditional Distributions" (with Li Wang), *Econometric Theory* 28, 328-362.
- 2012: "Semi-Nonparametric Estimation of Independently and Identically Repeated First-Price Auctions via an Integrated Simulated Moments Method" (with Hosin Song), *Journal of Econometrics* 168, 108-119.
- 2011: "Job Search, Conditional Treatment and Recidivism: The Employment Services for Ex-Offenders Program Reconsidered" (with Jose Carvalho), *The B.E. Journal of Economic Analysis & Policy* 11, Issue 1 (Topics), Article 5.
- 2010: "Time-Varying Cointegration" (with Luis Martins), *Econometric Theory* 26, 1453-1490.
- 2008: "Testing the Regional Restructuring Hypothesis in Western Germany" (with Tom Kontuly), *Environment & Planning A* 40, 1713-1727.
- 2008: "Semi-Nonparametric Interval Censored Mixed Proportional Hazard Models: Identification and Consistency Results", *Econometric Theory* 24, 749-794.
- 2007: "Semi-Nonparametric Competing Risks Analysis of Recidivism" (with Jose Carvalho), *Journal of Applied Econometrics* 22, 971-993.
- 2007: "Conditional Treatment and Its Effect on Recidivism" (with Jose Carvalho), *Brazilian Review of Econometrics* 27, 53-84.
- 2007: "Econometric Analysis of Linearized Singular Dynamic Stochastic General Equilibrium Models", *Journal of Econometrics* 236, 595-627.
- 2005: "Forecasting Quarterly Brazilian GDP Growth Rate With Linear and Nonlinear Diffusion Index Models" (with Roberto T. Ferreira and Ivan Castelar), *Economia Selecta* 6, 205-229.
- 2001: "Complex Unit Roots and Business Cycles: Are They Real?", *Econometric Theory* 17, 962-983.
- 2001: "Integrated Conditional Moment Testing of Quantile Regression Models" (with Donna Ginther), *Empirical Economics* 26, 307-324.
- 2000: "Nonparametric Nonlinear Co-Trending Analysis, with an Application to Inflation and Interest in the U.S.", *Journal of Business & Economic Statistics* 18, 323-337.
- 2000: "The Econometric Consequences of the Ceteris Paribus Condition in Economic Theory" (with Norman R. Swanson), *Journal of Econometrics* 95, 223-253.

- 1997: "Testing the Unit Root with Drift Hypothesis Against Nonlinear Trend Stationarity, with an Application to the U.S. Price Level and Interest Rate", *Journal of Econometrics* 81, 29-64.
- 1997: "Asymptotic Theory of Integrated Conditional Moment Tests", (with Werner Ploberger), *Econometrica* 65, 1129-1151.
- 1997: "Nonparametric Cointegration Analysis", *Journal of Econometrics* 77, 379-404.
- 1994: "On the Limit Behavior of a Chi-Square Type Test If the Number of Conditional Moments Tested Approaches Infinity", *Econometric Theory* 10, 70-90 (with Robert M. de Jong).
- 1994: "Comment on Artificial Neural Networks: An Econometric Perspective", *Econometric Reviews* 13, 93-97.
- 1993: "The Relation Between Unemployment and Interest Rate: Some Empirical Evidence", *Econometric Reviews* 12, 217-256 (with Lourens Broersma).
- 1993: "Higher-order Sample Autocorrelations and the Unit Root Hypothesis", *Journal of Econometrics* 57, 137-160.
- 1993: "Testing Stationarity and Trend Stationarity Against the Unit Root Hypothesis", *Econometric Reviews* 12, 1-32 (with Shengyi Guo).
- 1991: "Least Squares Estimation of Linear and Nonlinear ARMAX Models Under Data Heterogeneity", *Annales d'Economie et de Statistique*, 20/21, 143-169.
- 1990: "Reply to Comments on 'Specification of Household Engel Curves by Nonparametric Regression'", *Econometric Reviews* 9, 203-210.
- 1990: "Specification of Household Engel Curves by Nonparametric Regression (with discussion)", *Econometric Reviews* 9, 123-184 (with Hettie Pott-Buter).
- 1990: "A Consistent Conditional Moment Test of Functional Form", *Econometrica* 58, 1443-1458.
- 1990: "Model-Free Asymptotically Best Forecasting of Stationary Economic Time Series", *Econometric Theory* 6, 348-383.
- 1990: "Testing the Recession Theory as an Explanation for the Migration Turnaround", *Environment and Planning A*, 22, 253-270 (with Tom Kontuly)
- 1988: "Estimating a Hedonic Earnings Function with a Nonparametric Method", *Empirical Economics* 13, 267-294 (with Joop Hartog).
- 1988: "Non-linear Regression with Discrete Explanatory Variables, with an Application to the Earnings Function", *Journal of Econometrics* 38, 269-299 (with Joop Hartog).
- 1988: "Comment on 'Towards a Theory of Point Optimal Testing'", *Econometric Reviews* 6, 231-233.
- 1988: "Reply to Comments on ARMA Memory Index Modeling of Economic Time Series", *Econometric Theory* 4, 70-76.
- 1988: "ARMA Memory Index Modeling of Economic Time Series (with discussion)", *Econometric Theory* 4, 35-59.
- 1987: "ARMAX Model Specification Testing, with an Application to Unemployment in the Netherlands", *Journal of Econometrics* 35, 161-190.
- 1985: "Population Forecasting at the City Level: An Econometric Approach", *Urban Studies* 22, 83-90 (with Roy Hoever).

- 1984: "Model Specification Testing of Time Series Regressions", *Journal of Econometrics* 26, 323-353.
- 1983: "Sample Moments Integrating Normal Kernel Estimators of Multivariate Density and Regression Functions", *Sankhya Series B*, 45, 160-192.
- 1983: "Uniform Consistency of Kernel Estimators of a Regression Function Under Generalized Conditions", *Journal of the American Statistical Association* 78, 699-707.
- 1982: "Consistent Model Specification Tests", *Journal of Econometrics* 20, 105-134.
- 1982: "A Uniform Weak Law of Large Numbers under  $\phi$ -Mixing with Application to Nonlinear Least Squares Estimation", *Statistica Neerlandica* 36, 81-86.
- 1980: "Consistent Selection of Explanatory Variables", *Statistica Neerlandica* 34, 141-150.

### ***Book review***

- 1996: "Estimation, Inference and Specification Analysis", by Halbert White. *Journal of the American Statistical Association* 91, p.1373.

### ***Non-refereed articles***

- 1988: "Specificatie-analyse in de econometrie" (Specification analysis in econometrics), *Kwantitatieve Methoden* 27, 5-26.
- 1981: "Een vergelijkend onderzoek naar de financiële structuur van Amsterdam, Rotterdam, Den Haag en Utrecht" (A comparative study of the financial structure of the municipalities of Amsterdam, Rotterdam, The Hague and Utrecht), *Bank en Gemeente* 8, 55-60 (with R. Stoffel).

### ***Consultancy reports of the Foundation for Economic Research (SEO)***

- 1985: *Naar een binnengemeentelijk uitkeringsstelsel* (Towards an intra-municipal endowment allocation system), with J. M. Meijering.
- 1984: *De regionale vraag naar kantooruimte op middellange termijn; een modelmatige benadering* (The medium-term regional demand for office buildings; an econometric approach), with K. J. Alsem.
- 1983: *Meerjarenbegroting Lelystad 1983-1987* (The medium-term budget of Lelystad for the period 1983-1987), with R. Giebels.
- 1983: *Financien van Almere op lange termijn* (Long-term finance of Almere), with A. E. M. Diderich.
- 1982: *Financiële perspectieven van de gemeente Lelystad tot het jaar 2000* (Financial perspectives of the municipality of Lelystad until the year 2000), with R. Giebels and C. Teulings.
- 1982: *Groei, voorzieningen en financiën van de gemeente Hoorn in de periode 1981-2000* (Growth, services and finance of the municipality of Hoorn in the period 1981-2000), with R. Giebels, R. Hoever and W. de Ruyter.
- 1981: *Een nadere analyse van het totale ambtelijke apparaat bij gemeenten*. (A further analysis of the total number of civil servants of municipalities).

- 1980: *Vergelijkend onderzoek naar de financiële structuur en het voorzieningenniveau van Amsterdam, Rotterdam, Den Haag en Utrecht. Deel 2: Structuur van uitgaven en inkomsten over de periode 1948-1974.* (A comparative study of the financial structure and the services of the municipalities of Amsterdam, Rotterdam, The Hague and Utrecht. Vol. 2: Structure of expenditures and income in the period 1947-1974), with J. Poelert and R. Stoffel.
- 1979: *De invloed van de fasering van de woningbouw op de ontwikkeling van Hoorn* (The impact of the phasing of residential construction on the development of Hoorn), with H. Jesse, R. Giebels, H. ten Napel, A. Stam and R. Stofberg.
- 1978: *Wegonderhoud en bodemgesteldheid in Gouda en andere gemeenten* (Road maintenance and the condition of the soil in Gouda and other municipalities), with R. Giebels and J. Poelert.
- 1977: *De gemeentelijke activiteiten in middelgrote gemeenten; een modelmatige benadering* (The activities of medium-size municipalities: an econometric approach), with G. J. S. Uhl.
- 1975: *De financiële consequenties voor de gemeente Hoorn van het al dan niet bebouwen van de Kersenbogaard* (The financial consequences for the municipality of Hoorn of residential construction in the 'Kersenbogaard'), with P. Kramer, R. Stofberg and G. J. S. Uhl.
- 1974: *De financiële consequenties van de groei van de gemeente Capelle aan den IJssel* (The financial consequences of growth of the municipality of Capelle aan den IJssel), with G. J. S. Uhl.