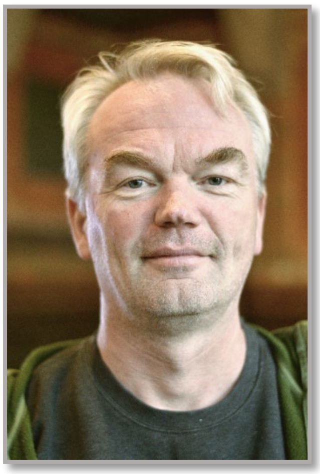
Frank Westerhoff



Postal address

University of Bamberg

Department of Economics

Feldkirchenstraße 21

D-96045 Bamberg

Germany

This and that

ORCID: 0000-0003-1666-4103

ResearcherID: F-2933-2015

Phone: +49 (0) 951 863 2634

Email: frank.westerhoff@uni-bamberg.de

Academic appointments

Professor, University of Bamberg, 10/2006-present

Research Assistant, University of Osnabrück, 10/2005-09/2006

Guest Lecturer, University of Bonn, 04/2005-09/2005

Visiting Scholar, Hitotsubashi University, 10/1998-12/1998

Research Assistant, University of Osnabrück, 07/1997-03/2005

University education

Habilitation degree in economics, University of Osnabrück, 11/2005

Doctoral degree in economics, University of Osnabrück, 07/2002

Diploma in economics, University of Osnabrück, 03/1997

Research interests from A to F

Agent-based computational models.

Behavioral economics and finance.

Controlling complex adaptive systems.

Dynamical systems in discrete time.

Economic policy and market design.

Functioning of (interacting) markets.

Publications

Articles in refereed journals

(P127) Gardini, L., Radi, D., Schmitt, N., Sushko, I. and Westerhoff, F. (2025): Dynamics of 1D discontinuous maps with multiple partitions and linear functions having the same fixed point. An application to financial market modeling. Physica D, in press.

(P126) Mignot, S. and Westerhoff, F. (2025): A stock market model with chartists, fundamentalists and index traders: nonlinearities and coexisting attractors. *International Journal of Bifurcation and Chaos*, in press.

(P125) Gardini, L., Radi, D., Schmitt, N., Sushko, I. and Westerhoff, F. (2025): On the emergence and properties of weird quasiperiodic attractors. *Chaos, Solitons and Fractals*, 199, 116916.

(P124) Gardini, L., Radi, D., Schmitt, N., Sushko, I. and Westerhoff, F. (2025): Abundance of weird quasiperiodic attractors in piecewise linear discontinuous maps. *International Journal of Bifurcation and Chaos*, in press.

(P123) Gardini, L., Radi, D., Schmitt, N., Sushko, I. and Westerhoff, F. (2025): On the limits of informationally efficient stock markets: New insights from a chartist-fundamentalist model. *International Review of Financial Analysis*, 105, 104436.

(P122) Dieci, R., Schmitt, N. and Westerhoff, F. (2025): Boom-bust cycles and asset market participation waves: momentum, value, risk and herding. *Journal of Evolutionary Economics*, 35, 513-551.

(P121) Mignot, S. and Westerhoff, F. (2025): Contagious popular stories, stock market participation, and boom-bust cycles. *Mathematics and Computers in Simulation*, Vol. 234, 459-471.

(P120) Gardini, L., Radi, D., Schmitt, N., Sushko, I. and Westerhoff, F. (2025): On boom-bust stock market dynamics, animal spirits and the destabilizing nature of temporarily attracting virtual fixed points. *Macroeconomic Dynamics*, Vol. 29, e35, 1-31.

(P119) Mignot, S., Pellizzari, P. and Westerhoff, F. (2024): Fake news and asset price dynamics. *Jahrbücher für Nationalökonomie und Statistik* (Journal of Economics and Statistics), Vol. 244, 351-379.

(P118) Gardini, L., Radi, D., Schmitt, N., Sushko, I. and Westerhoff, F. (2024): Bifurcation structures of a two-dimensional piecewise-linear discontinuous map: analysis of a cobweb model with regime-switching expectations. *Nonlinear Dynamics*, Vol. 112, 15601-15620.

(P117) Mignot, S. and Westerhoff, F. (2025): Explaining the stylized facts of foreign exchange markets with a simple agent-based version of Paul de Grauwe's chaotic exchange rate model. *Computational Economics*, Vol. 65, 845-876.

(P116) Gardini, L., Radi, D., Schmitt, N., Sushko, I. and Westerhoff, F. (2024): On the (de)stabilizing nature of targeting long-run fundamentals interventions. *Nonlinear Dynamics, Psychology, and Life Sciences*, Vol. 28, 261-287.

(P115) Gardini, L., Radi, D., Schmitt, N., Sushko, I. and Westerhoff, F. (2023): A 2D piecewise-linear discontinuous map arising in stock market modeling: two overlapping period-adding bifurcation structures. *Chaos, Solitons and Fractals*, Vol. 176, 114143.

(P114) Mignot, S., Tramontana, F. and Westerhoff, F. (2024): Complex dynamics in a nonlinear duopoly model with heterogeneous expectation formation and learning behavior. *Annals of Operations Research*, Vol. 337, 809-834.

(P113) Gardini, L., Radi, D., Schmitt, N., Sushko, I. and Westerhoff, F. (2023): Sentiment-driven business cycle dynamics: An elementary macroeconomic model with animal spirits. *Journal of Economic Behavior and Organization*, Vol. 210, 342-359.

(P112) Dieci, R., Mignot, S., Schmitt, N. and Westerhoff, F. (2023): Production delays, supply distortions and price dynamics. *Communications in Nonlinear Science and Numerical Simulation*, Vol. 117, 106887.

(P111) Gardini, L., Radi, D., Schmitt, N., Sushko, I. and Westerhoff, F. (2022): Currency manipulation and currency wars: analyzing the dynamics of competitive central bank interventions. *Journal of Economic Dynamics and Control*, Vol. 145, 104545.

(P110) Dieci, R., Gardini, L. and Westerhoff, F. (2022): On the destabilizing nature of capital gains taxes. *International Review of Financial Analysis*, Vol. 83, 102258.

(P109) Gardini, L., Radi, D., Schmitt, N., Sushko, I. and Westerhoff, F. (2022): Perception of fundamental values and financial market dynamics: Mathematical insights from a 2D piecewise linear map. *SIAM Journal on Applied Dynamical Systems*, Vol. 21, 2314-2337.

(P108) Gardini, L., Radi, D., Schmitt, N., Sushko, I. and Westerhoff, F. (2022): Causes of fragile stock market stability. *Journal of Economic Behavior and Organization*, Vol. 200, 483-498.

(P107) Mignot, S. and Westerhoff, F. (2023): Revisiting Paul de Grauwe's chaotic exchange rate model: new analytical insights and agent-based explorations. *Open Economies Review*, Vol. 24, 155-169.

(P106) Dieci, R., Mignot, S. and Westerhoff, F. (2022): Production delays, technology choice and cyclical cobweb dynamics. *Chaos, Solitons and Fractals*, Vol. 156, 11796.

(P105) Martin, C., Schmitt, N. and Westerhoff, F. (2022): Housing markets, expectation formation and interest rates. *Macroeconomic Dynamics*, Vol. 26, 491-532.

(P104) Schmitt, N. and Westerhoff, F. (2022): Speculative housing markets and rent control: insights from nonlinear economic dynamics. *Journal of Economic Interaction and Coordination*, Vol. 17, 141-163.

(P103) Schmitt, N., Schwartz, I. and Westerhoff, F. (2022): Heterogeneous speculators and stock market dynamics: a simple agent-based computational model. *European Journal of Finance*, Vol. 28, 1263-1282.

(P102) Mignot, S., Tramontana, F. and Westerhoff, F. (2021): Speculative asset price dynamics and wealth taxes. *Decisions in Economics and Finance*, Vol. 44, 641-667.

(P101) Schmitt, N. and Westerhoff, F. (2021): Trend followers, contrarians and fundamentalists: explaining the dynamics of financial markets. *Journal of Economic Behavior and Organization*, Vol. 192, 117-136.

(P100) Gardini, L., Schmitt, N., Sushko, I., Tramontana, F. and Westerhoff, F. (2021): Necessary and sufficient conditions for the roots of a cubic polynomial and bifurcations of codimension-1, -2, -3 for 3D maps. *Journal of Difference Equations and Applications*, Vol. 27, 557-578.

(P099) Panchuk, A. and Westerhoff, F. (2021): Speculative behavior and chaotic asset price dynamics: on the emergence of a bandcount accretion bifurcation structure. *Discrete and Continuous Dynamical Systems Series B*, Vol. 26, 5941-5964.

(P098) Martin, C., Schmitt, N. and Westerhoff, F. (2021): Heterogeneous expectations, housing bubbles and tax policy. *Journal of Economic Behavior and Organization*, Vol. 183, 555-573.

(P097) Schmitt, N. and Westerhoff, F. (2021): Pricking asset market bubbles. *Finance Research Letters*, Vol. 38, 101441.

(P096) Schmitt, N., Tramontana, F. and Westerhoff, F. (2020): Nonlinear asset-price dynamics and stabilization policies. *Nonlinear Dynamics*, Vol. 102, 1045-1070.

(P095) Lines, M., Schmitt, N. and Westerhoff, F. (2020): Stability conditions for three-dimensional maps and their associated bifurcation types. *Applied Economics Letters*, Vol. 27, 1056-1060.

(P094) Schmitt, N. and Westerhoff, F. (2019): Short-run momentum, long-run mean reversion and excess volatility: an elementary housing model. *Economics Letters*, Vol. 176, 43-46.

(P093) Martin, C. and Westerhoff, F. (2019): Regulation speculative housing markets via public housing construction programs: Insights from a heterogeneous agent model. *Jahrbücher für Nationalökonomie und Statistik* (Journal of Economics and Statistics), Vol. 239, 627-660.

(P092) Franke, R. and Westerhoff, F. (2019): Different compositions of animal spirits and their impact on macroeconomic stability. *Economic Modelling*, Vol. 76, 117-127.

(P091) Dieci, R., Schmitt, N. and Westerhoff, F. (2018): Steady states, stability and bifurcations in multi-asset market models. *Decisions in Economics and Finance*, Vol. 41, 357-378.

(P090) Dieci, R., Schmitt, N. and Westerhoff, F. (2018): Interactions between stock, bond and housing markets. *Journal of Economic Dynamics and Control*, Vol. 91, 43-70.

(P089) Blaurock, I., Schmitt, N. and Westerhoff, F. (2018): Market entry waves and volatility outbursts in stock markets. *Journal of Economic Behavior and Organization*, Vol. 153, 19-37.

(P088) Panchuk, A., Sushko, I. and Westerhoff, F. (2018): A financial market model with two discontinuities: bifurcation structures in the chaotic domain. *Chaos*, Vol. 28, 055908.

(P087) Schmitt, N., Tuinstra, J. and Westerhoff, F. (2018): Stability and welfare effects of profit taxes within an evolutionary market interaction model. *Review of International Economics*, Vol. 26, 691-708.

(P86) Schmitt, N. and Westerhoff, F. (2018): Evolutionary competition and profit taxes: market stability versus tax burden. *Macroeconomic Dynamics*, Vol. 22, 2007-2031.

(P085) Franke, R. and Westerhoff, F. (2017): Taking stock: a rigorous modelling of animal spirits in macroeconomics. *Journal of Economic Surveys*, Vol. 31, 1152-1182. [Reprinted in: Veneziani, R. and Zamparelli, L. (eds): Analytical Political Economy. Wiley-Blackwell, Hoboken, 5-39, 2018].

(P084) Schmitt, N. and Westerhoff, F. (2017): Heterogeneity, spontaneous coordination and extreme events within large-scale and small-scale agent-based financial market models. *Journal of Evolutionary Economics,* Vol. 27*,* 1041-1070.

(P083) Schmitt, N. and Westerhoff, F. (2017): On the bimodality of the distribution of the S&P 500's distortion: empirical evidence and theoretical explanations. *Journal of Economic Dynamics and Control*, Vol. 80, 34-53.

(P082) Schmitt, N., Tuinstra, J. and Westerhoff, F. (2017): Side effects of nonlinear profit taxes in a behavioral market entry model: abrupt changes, coexisting attractors and hysteresis problems. *Journal of Economic Behavior and Organization*, Vol. 135, 15-38.

(P081) Schmitt, N. and Westerhoff, F. (2017): Herding behaviour and volatility clustering in financial markets. *Quantitative Finance*, Vol. 17, 1187-1203.

(P080) Schmitt, N. and Westerhoff, F. (2016): Stock market participation and endogenous boom-bust dynamics. *Economics Letters*, Vol. 148, 72-75.

(P079) Dieci, R. and Westerhoff, F. (2016): Heterogeneous expectations, boom-bust housing cycles, and supply conditions: a nonlinear economic dynamics approach. *Journal of Economic Dynamics and Control*, Vol. 71, 21-44.

(P078) Tramontana, F. and Westerhoff, F. (2016): Piecewise-linear maps and their application to financial markets. *Frontiers in Applied Mathematics and Statistics*, Vol. 2, 10.

(P077) Franke, R. and Westerhoff, F. (2016): Why a simple herding model may generate the stylized facts of daily returns: explanation and estimation. *Journal of Economic Interaction and Coordination*, Vol. 11, 1-34.

(P076) Schmitt, N. and Westerhoff, F. (2015): Managing rational routes to randomness. *Journal of Economic Behavior and Organization*, Vol. 116, 157-173.

(P075) Sushko, I., Tramontana, F., Westerhoff, F. and Avrutin, V. (2015): Symmetry breaking in a bull and bear financial market model. *Chaos, Solitons and Fractals*, Vol. 79, 57-72.

(P074) Tramontana, F., Westerhoff, F. and Gardini, L. (2015): A simple financial market model with chartists and fundamentalists: market entry levels and discontinuities. *Mathematics and Computers in Simulation*, Vol. 108, 16-40.

(P073) Tuinstra, J., Wegener, M. and Westerhoff, F. (2014): Positive welfare effects of trade barriers in a dynamic partial equilibrium model. *Journal of Economic Dynamics and Control*, Vol. 48, 246-264.

(P072) Schmitt, N. and Westerhoff, F. (2014): Speculative behavior and the dynamics of interacting stock markets. *Journal of Economic Dynamics and Control*, Vol. 45, 262-288.

(P071) Tramontana, F., Westerhoff, F. and Gardini, L. (2014): One-dimensional maps with two discontinuity points and three linear branches: mathematical lessons for understanding the dynamics of financial markets. *Decisions in Economics and Finance*, Vol. 37, 27-51.

(P070) Dieci, R. and Westerhoff, F. (2013): On the inherent instability of international financial markets: natural nonlinear interactions between stock and foreign exchange markets. *Applied Mathematics and Computation*, Vol. 221, 306-328.

(P069) Tramontana, F., Westerhoff, F. and Gardini, L. (2013): The bull and bear market model of Huang and Day: Some extensions and new results. *Journal of Economic Dynamics and Control*, Vol. 37, 2351-2370.

(P068) Westerhoff, F. (2012): Interactions between the real economy and the stock market: A simple agent-based approach. *Discrete Dynamics in Nature and Society*, Vol. 2012, Article ID 504840.

(P067) Franke, R. and Westerhoff, F. (2012): Structural stochastic volatility in asset pricing dynamics: estimation and model contest. *Journal of Economic Dynamics and Control*, Vol. 36, 1193-1211.

(P066) Dieci, R. and Westerhoff, F. (2012): A simple model of a speculative housing market. *Journal of Evolutionary Economics*, Vol. 22, 303-329.

(P065) Lines, M. and Westerhoff, F. (2012): Effects of inflation expectations on macroeconomic dynamics: extrapolative versus regressive expectations. *Studies in Nonlinear Dynamics and Econometrics*, Vol. 16, Issue 4, Article 7.

(P064) Wegener, M. and Westerhoff, F. (2012): Evolutionary competition between prediction rules and the emergence of business cycles within Metzler's inventory model. *Journal of Evolutionary Economics*, Vol. 22, 251-273.

(P063) Westerhoff, F. und Franke, R. (2012): Converse trading strategies, intrinsic noise and the stylized facts of financial markets. *Quantitative Finance*, Vol. 12, 425-436.

(P062) Tramontana, F., Gardini, L. and Westerhoff, F. (2011): Heterogeneous speculators and asset price dynamics: further results from a one-dimensional discontinuous piecewise-linear map. *Computational Economics*, Vol. 38, 329-347.

(P061) Franke, R. and Westerhoff, F. (2011): Estimation of a structural stochastic volatility model of asset pricing. *Computational Economics*, Vol. 38, 53-83.

(P060) Dieci, R. and Westerhoff, F. (2010): Interacting cobweb markets. *Journal of Economic Behavior and Organization*, Vol. 75, 461-481.

(P059) Westerhoff, F. and Hohnisch, M. (2010): Consumer Sentiment and Countercyclical Fiscal Policies. *International Review of Applied Economics*, Vol. 24, 609-618.

(P058) Westerhoff, F. (2010): An agent-based macroeconomic model with interacting firms, socio-economic opinion formation and optimistic/pessimistic sales expectations. *New Journal of Physics*, Vol. 12, 075035.

(P057) Westerhoff, F. and Wieland, C. (2010): A behavioral cobweb model with heterogeneous speculators. *Economic Modelling*, Vol. 27, 1136-1143.

(P056) Hermsen, O., Witte, B.-C. and Westerhoff, F. (2010): Disclosure requirements, the release of new information and market efficiency: new insights from agent-based models. Economics: The Open-Access, Open-Assessment E-Journal, Vol. 4, Article ID 2010-7.

(P055) Tramontana, F., Westerhoff, F. and Gardini, L. (2010): On the complicated price dynamics of a simple one-dimensional discontinuous financial market model with heterogeneous interacting traders, *Journal of Economic Behavior and Organization*, Vol. 74, 187-205.

(P054) Dieci, R. and Westerhoff, F. (2010): Heterogeneous speculators, endogenous fluctuations and interacting markets: a model of stock prices and exchange rates. *Journal of Economic Dynamics and Control*, Vol. 34, 743-764.

(P053) Lines, M. and Westerhoff, F. (2010): Inflation expectations and macroeconomic dynamics: the case of rational versus extrapolative expectations. *Journal of Economic Dynamics and Control*, Vol. 34, 246-257.

(P052) Dieci, R. and Westerhoff, F. (2009): Stability analysis of a cobweb model with market interactions. *Applied Mathematics and Computation*, Vol. 215, 2011-2023.

(P051) Pellizzari, P. and Westerhoff, F. (2009): Some effects of transaction taxes under different microstructures. *Journal of Economic Behavior and Organization*, Vol. 72, 850-863.

(P050) Tramontana, F., Gardini, L., Dieci, R. and Westerhoff, F. (2009): The emergence of “bull and bear” dynamics in a nonlinear model of interacting markets. *Discrete Dynamics in Nature and Society*, Vol. 2009, Article ID 310471.

(P049) Wegener, M., Westerhoff, F. and Zaklan, G. (2009): A Metzlerian business cycle model with nonlinear heterogeneous expectations. *Economic Modelling*, Vol. 26, 715-720.

(P048) Zaklan, G., Westerhoff, F. and Stauffer, D. (2009): Analysing tax evasion dynamics via the Ising model. *Journal of Economic Interaction and Coordination*, Vol. 4, 1-14.

(P047) Sushko, I., Wegener, M., Westerhoff, F. and Zaklan, G. (2009): Endogenous business cycle dynamics within the inventory model of Metzler: Adding an inventory floor. *Nonlinear Dynamics in Psychology and Life Sciences*, Vol. 13, 223-233.

(P046) Westerhoff, F. (2008): Consumer sentiment and business cycles: A Neimark-Sacker bifurcation scenario. *Applied Economics Letters*, Vol. 15, 1201-1205.

(P045) Zaklan, G., Lima, W. and Westerhoff, F. (2008): Controlling tax evasion fluctuations. *Physica A*, Vol. 387, 5857-5861.

(P044) Westerhoff, F. (2008): The use of agent-based financial market models to test the effectiveness of regulatory policies. *Jahrbücher für Nationalökonomie und Statistik (Journal of Economics and Statistics)*, Vol. 228, 195-227.

(P043) Hohnisch, M. and Westerhoff, F. (2008): Business cycle synchronization in a simple Keynesian macro-model with socially transmitted economic sentiment and international sentiment spill-over. *Structural Change and Economic Dynamics*, Vol. 19, 249-259.

(P042) Kopel, M., Westerhoff, F. and Wieland, C. (2008): Regulating complex dynamics in firms and economic systems. *Chaos, Solitons and Fractals*, Vol. 38, 911-919.

(P041) Westerhoff, F. (2008): Heuristic expectation formation and business cycles: A simple linear model. *Metroeconomica*, Vol. 59, 47-56.

(P040) Hilker, F. and Westerhoff, F. (2007): Preventing extinction and outbreaks in chaotic populations. *American Naturalist*, Vol. 170, 232-241.

(P039) Hilker, F. and Westerhoff, F. (2007): Triggering crashes in chaotic dynamics. *Physics Letters A*, Vol. 362, 407-411.

(P038) Westerhoff, F. (2007): On central bank interventions and transaction taxes. *Applied Financial Economics Letters*, Vol. 3, 11-14.

(P037) Westerhoff, F. and Hohnisch, M. (2007): A note on interactions-driven business cycles. *Journal of Economic Interaction and Coordination*, Vol. 2, 85-91.

(P036) Manzan, S. and Westerhoff, F. (2007): Heterogeneous expectations, exchange rate dynamics and predictability. *Journal of Economic Behavior and Organization*, Vol. 64, 111-128.

(P035) Reitz, S. and Westerhoff, F. (2007): Commodity price cycles and heterogeneous speculators: A STAR-GARCH model. *Empirical Economics*, Vol. 33, 231-244.

(P034) Corron, N., He, X.-Z. and Westerhoff, F. (2007): Butter mountains, milk lakes and optimal price limiters. *Applied Economics Letters*, 14, 1131-1136.

(P033) Hilker, F. and Westerhoff, F. (2006): The paradox of simple limiter control. *Physical Review E*, Vol. 73, 052901 (3).

(P032) Westerhoff, F. (2006): Nonlinear expectation formation and endogenous business cycles. *Studies in Nonlinear Dynamics and Econometrics*, Vol. 10, Issue 4, Article 4.

(P031) Ehrenstein, G. and Westerhoff, F. (2006): The working of circuit breakers within percolation models for financial markets. *International Journal of Modern Physics C*, Vol. 17, 299-304.

(P030) Westerhoff, F. (2006): Business cycles, heuristic expectation formation and contracyclical policies. *Journal of Public Economic Theory*, Vol. 8, 821-838.

(P029) Reitz, S., Westerhoff, F. and Wieland, C. (2006): Target zone interventions and coordination of expectations. *Journal of Optimization Theory and Applications*, Vol. 128, 453-467.

(P028) Westerhoff, F. (2006): Samuelson's multiplier-accelerator model revisited. *Applied Economics Letters*, Vol. 13, 89-92.

(P027) Westerhoff, F. and Dieci, R. (2006): The effectiveness of Keynes-Tobin transaction taxes when heterogeneous agents can trade in different markets: A behavioral finance approach. *Journal of Economic Dynamics and Control*, Vol. 30, 293-322.

(P026) Westerhoff, F. (2006): Technical analysis based on price-volume signals and the power of trading breaks. *International Journal of Theoretical and Applied Finance*, Vol. 9, 227-244.

(P025) Westerhoff, F. (2005): Consumer behavior and fluctuations in economic activity. *Advances in Complex Systems*, Vol. 8, 209-215.

(P024) Westerhoff, F. (2005): The impact of flow analysis on exchange rate dynamics. *Finance Letters*, Vol.3, Issue 3.

(P023) Wieland, C. and Westerhoff, F. (2005): Exchange rate dynamics, central bank intervention and chaos control methods. *Journal of Economic Behavior and Organization*, Vol. 58, 117-132.

(P022) He, X.-Z. and Westerhoff, F. (2005): Commodity markets, price limiters and speculative price dynamics. *Journal of Economic Dynamics and Control*, Vol. 29, 1577-1596.

(P021) Manzan, S. and Westerhoff, F. (2005): Representativeness of news and exchange rate dynamics. *Journal of Economic Dynamics and Control*, Vol. 29, 677-689.

(P020) Westerhoff, F. and Reitz, S. (2005): Commodity price dynamics and the nonlinear market impact of technical traders: Empirical evidence for the U.S. corn market. *Physica A*, Vol. 349, 641-648.

(P019) Westerhoff, F. (2005): Heterogeneous traders, price-volume signals and complex asset price dynamics. *Discrete Dynamics in Nature and Society*, Vol. 2005, 19-29.

(P018) Ehrenstein, G., Westerhoff, F. and Stauffer, D. (2005): Tobin tax and market depth. *Quantitative Finance*, Vol. 5, 213-218.

(P017) Westerhoff, F. (2004): Speculative dynamics, feedback traders and transaction taxes: A note. *Jahrbuch für Wirtschaftswissenschaften/Review of Economics*, Vol. 55, 190-195.

(P016) Westerhoff, F. and Wieland, C. (2004): Spill-over dynamics of central bank interventions. *German Economic Review*, Vol. 5, 435-450.

(P015) Westerhoff. F. and Manzan, S. (2004): Does liquidity in the FX market depend on volatility? *Economics Bulletin*, Vol. 6, No. 10, 1-8.

(P014) Westerhoff, F. (2004): Greed, fear and stock market dynamics. *Physica A*, Vol. 343, 635-642.

(P013) Westerhoff, F. (2004): Market depth and price dynamics: A note. *International Journal of Modern Physics C*, Vol. 15, 1005-1012.

(P012) Westerhoff, F. (2004): Multiasset market dynamics. *Macroeconomic Dynamics*, 8, 596-616.

(P011) Westerhoff, F. and Reitz, S. (2003): Nonlinearities and cyclical behavior: the role of chartists and fundamentalists. *Studies in Nonlinear Dynamics and Econometrics*, Vol. 7, Issue 4, Article 3.

(P010) Westerhoff, F. (2003): Market maker, inventory control and foreign exchange dynamics. *Quantitative Finance*, Vol. 3, 363-369.

(P009) Westerhoff, F. (2003): Bubbles and crashes: optimism, trend extrapolation and panic. *International Journal of Theoretical and Applied Finance*, Vol. 6, 829-837.

(P008) Westerhoff, F. (2003): Heterogeneous traders and the Tobin tax. *Journal of Evolutionary Economics*, Vol. 13, 53-70.

(P007) Westerhoff, F. (2003): Central bank intervention and feedback traders. *Journal of International Financial Markets, Institutions and Money*, Vol. 13, 419-427.

(P006) Westerhoff, F. (2003): Speculative markets and the effectiveness of price limits. *Journal of Economic Dynamics and Control*, Vol. 28, 493-508.

(P005) Westerhoff, F. (2003): Anchoring and psychological barriers in foreign exchange markets. *Journal of Behavioral Finance*, Vol. 4, 65-70.

(P004) Westerhoff, F. (2003): Speculative behavior and asset price dynamics. *Nonlinear Dynamics, Psychology, and Life Sciences*, Vol. 7, 245-262.

(P003) Westerhoff, F. (2003): Expectations driven distortions in the foreign exchange market. *Journal of Economic Behavior and Organization*, Vol. 51, 389-412.

(P002) Lawrenz, C. and Westerhoff, F. (2003): Modeling exchange rate behavior with a genetic algorithm. *Computational Economics*, Vol. 21, 209-229.

(P001) Westerhoff, F. (2001): Speculative behavior, exchange rate volatility, and central bank intervention. *Central European Journal of Operations Research*, Vol. 9, 31-50.

Miscellaneous

(M20) Gardini, L., Radi, D., Schmitt, N., Sushko, I. and Westerhoff, F. (2024): New Economic Era Thinking and Stock Market Bubbles: A Two-Dimensional Piecewise Linear Discontinuous Map Approach. In: Elaydi, S., Gardini, L. and Tikjha, W. (eds.): New Developments in Discrete Dynamical Systems, Difference Equations, and Applications. Springer, Berlin, 173-202.

(M19) Neugart, M. and Westerhoff, F. (2024): Editorial – Special Issue on "Advancing Agent-Based Economics". *Jahrbücher für Nationalökonomie und Statistik* (Journal of Economics and Statistics), Vol. 244, 289-291.

(M18) Westerhoff, F. (2019): Review of “Handbook of Computational Economics, Vol. 4: Heterogeneous Agent Modeling” by Cars Hommes and Blake LeBaron. *Jahrbücher für Nationalökonomie und Statistik* (Journal of Economics and Statistics), Vol. 239, 757-760.

(M17) Westerhoff, F. and Franke, R. (2018): Agent-based models for policy design: two illustrative examples. In: Chen, S.-H., Kaboudan, M. and Du, Y.-R. (eds.): The Oxford Handbook of Computational Economics and Finance. Oxford University Press, Oxford, 520-558.

(M16) Schmitt, N., Tuinstra, J. and Westerhoff, F. (2017): Market interactions, endogenous dynamics and stabilization policies. In: Commendatore, P., Kubin, I., Bougheas, S., Kirman, A., Kopel, M. and Bischi, G.I (eds.): The Economy as a Complex Spatial System. Springer, Berlin, 137-152.

(M15) Westerhoff, F. (2014): Review of Behavioral Rationality and Heterogeneous Expectations in Complex Economic Systems by Cars Hommes. *Jahrbücher für Nationalökonomie und Statistik* (Journal of Economics and Statistics), Vol. 234, 528-530.

(M14) Dieci, R. and Westerhoff, F. (2013): Modeling house price dynamics with heterogeneous speculators. In: Bischi, G.I., Chiarella, C. and Sushko, I. (eds): *Global Dynamics in Economics and Finance. Essays in Honour of Laura Gardini*. Springer, Berlin, 35-61.

(M13) Tramontana, F. and Westerhoff, F. (2013): One-dimensional discontinuous piecewise-linear maps and the dynamics of financial markets. In: Bischi, G.I., Chiarella, C. and Sushko, I. (eds): *Global Dynamics in Economics and Finance. Essays in Honour of Laura Gardini*. Springer, Berlin, 205-227.

(M12) Tramontana, F. and Westerhoff, F. (2012): The dynamics of financial markets and one-dimensional discontinuous piecewise-linear maps. AENORM, Vol. 20/76, 33-41.

(M11) Tramontana, F., Gardini, L. and Westerhoff, F. (2010): Intricate asset price dynamics and one-dimensional discontinuous maps. In: Puu, T. and Panchuck, A. (eds): *Nonlinear economic dynamics*. Nova Science Publishers, New York, 43-57.

(M10) Westerhoff, F. (2010): A simple agent-based financial market model: direct interactions and comparisons of trading profits. In: Chiarella C., Bischi G.I. and Gardini L. (eds.): *Nonlinear dynamics in economics, finance and the social sciences. Essays in Honour of John Barkley Rosser Jr*. Springer, Berlin, 313-332.

(M09) Tramontana, F., Gardini, L., Dieci, R. and Westerhoff, F. (2010): Global bifurcations in a three dimensional financial model of "bull and bear" interactions. In: Chiarella C., Bischi G.I. and Gardini L. (eds.): *Nonlinear dynamics in economics, finance and the social sciences. Essays in Honour of John Barkley Rosser Jr*. Springer, Berlin, 333-352.

(M08) Westerhoff, F. (2009): Agentenbasierte Finanzmarktmodelle. *uni.vers*, Vol. 15, 8-11.

(M07) Lux, T. and Westerhoff, F. (2009): Economics crisis. *Nature Physics*, Vol. 5, 2-3.

(M06) Westerhoff, F. (2009): Exchange rate dynamics: A nonlinear survey. In: Rosser, J.B. (ed): *Handbook of Research on Complexity*. Edward Elgar, Cheltenham, 287-325.

(M05) Lines, M. and Westerhoff, F. (2006): Expectations and the multiplier-accelerator model. In: T. Puu and I. Sushko (eds): *Business Cycles Dynamics. Models and Tools.* Springer, Berlin, 255-276.

(M04) Westerhoff, F. (2005): *Regulation and control of financial markets*. Kumulative Habilitationsschrift, Department of Economics, University of Osnabrück.

(M03) Westerhoff. F. and Wieland, C. (2004): Central bank interventions, chartists and the FX markets. *The Technical Analyst*, Vol. 1, Issue 2, 36-37.

(M02) Westerhoff, F. (2002): *Chartists, fundamentalists and exchange rate fluctuations*. Shaker-Verlag: Aachen.

(M01) Westerhoff, F. (1999): Japan in der Krise. In: Wacker, G. and C. Müller-Hofstede (Eds.): *Asienkrise, Demokratie, Nationalismus. Neue Wechselwirkungen zwischen Politik und Ökonomie in Ostasien*. Bundesinstitut für ostwissenschaftliche und internationale Studien: Köln, 23-28.

Working papers

Dieci, R., Schmitt, N. and Westerhoff, F. (2025): An eco-evolutionary perspective on comovements and countercyclical behaviors in asset markets. Working Paper, University of Bamberg.

Gardini, L., Radi, D., Schmitt, N., Sushko, I. and Westerhoff, F. (2025): Piecewise linear feedback rules and weird quasiperiodic dynamics: Some general observations and two economic applications. Working Paper, University of Bamberg.

Gardini, L., Radi, D., Schmitt, N., Sushko, I. and Westerhoff, F. (2025): How risk aversion may shape the dynamics of stock markets: a chartist-fundamentalist approach. In preparation, University of Bamberg.

Radi, D. and Westerhoff, F. (2024): The green transition of firms: The role of evolutionary competition, adjustment costs, transition risk, and green technology progress. Working Paper, University of Bamberg.

Gardini, L., Radi, D., Schmitt, N., Sushko, I. and Westerhoff, F. (2024): Commodity price dynamics: cycles and chaos in a cobweb model with regime-switching expectations. In preparation, University of Bamberg.

Hilker, F. and Westerhoff, F. (2005): Control of chaotic population dynamics: Ecological and economic considerations. Beiträge des Instituts für Umweltsystemforschung, No. 32, University of Osnabrück.

Services as referee

Editorial boards and editorial activities

Journal of Economic Behavior and Organization, Associate Editor, 10/2008-12/2013

Economics: The Open-Access, Open-Assessment E-Journal, Editor, 11/2009-12/2020

Journal of Economic Dynamics and Control, Associate Editor, since 01/2010

Journal of Economics and Statistics, Advisory Board, since 04/2012

Journal of Economics and Statistics, Special Issue Editor, Vol. 244, Issue 4, 2024

Studies in Nonlinear Dynamics and Econometrics, Special Issue Editor, Vol. 16, Issue 4, 2012

Frontiers in Applied Mathematics and Statistics, Review Editor, since 11/2015

Journal of Economic Interaction and Coordination, Associate Editor, since 12/2015

Decisions in Economics and Finance, Associate Editor, since 01/2025

Journal articles

American Economic Journal: Microeconomics, American Economic Review, Annals of Operations Research, Applied Economics, Applied Economics Letters, Applied Mathematical Finance, Applied Mathematics and Computation, Chaos: An Interdisciplinary Journal of Nonlinear Science, Chaos, Solitons and Fractals, Communications in Nonlinear Science and Numerical Simulation, Computational Economics, Computational Statistics and Data Analysis, Decisions in Economics and Finance, Discrete and Continuous Dynamical Systems Series B, Discrete Dynamics in Nature and Society, Econometrics and Statistics, Economica, Economics Letters, Economic Journal, Economic Modelling, Economics, Economics Research International, European Economic Review, European Journal of Finance, European Physical Journal B, Europhysics Letters, Financial Innovation, Fluctuations and Noise Letters, Frontiers in Applied Mathematics and Statistics, Games and Economic Behavior, Green Finance, Macroeconomic Dynamics, Mathematics and Computers in Simulation, Nonlinear Dynamics, IEEE Transactions on Evolutionary Computation, Information Sciences, International Economic Review, International Economics and Economic Policy, International Review of Applied Economics, International Review of Economics, Journal of Artificial Societies and Social Simulation, Journal of Banking and Finance, Journal of Behavioral Finance, Journal of Economic Behavior and Organization (Outstanding Referee 2016), Journal of Economic Dynamics and Control (Outstanding Referee 2006, 2008, 2011, 2016), Journal of Economic Interaction and Coordination, Journal of Economics and Statistics (Jahrbücher für Nationalökonomie und Statistik), Journal of Empirical Finance, Journal of Evolutionary Economics, Journal of International Economics, Journal of International Financial Markets, Institutions and Money, Journal of International Money and Finance, Journal of Money, Credit and Banking, New Journal of Physics, Open Economies Review, Oxford Economic Papers, Physica A, PLoS ONE, Quantitative Finance, Review of Behavioral Economics, Review of International Economics, Structural Change and Economic Dynamics, Studies in Nonlinear Dynamics and Econometrics, The Economics of Transition

Book chapters and book proposals

Cambridge University Press, de Gruyter, Elsevier, Idea, North-Holland, Springer, Routledge, World Scientific Press

Science (and other) foundations

DFG – Deutsche Forschungsgemeinschaft, Germany

FES – Friedrich-Ebert-Stiftung (Vertrauensdozent), Germany

FTS – Fritz Thyssen Foundation, Germany

FWF – Austrian Science Fund, Austria

OeNB – Austrian National Bank (Jubiläumsfonds), Austria

NSF – National Science Foundation, USA

NWO – Netherlands Organization for Scientific Research, The Netherlands

ÖAW – Austrian Academy of Science, Austria
SNF – Swiss National Science Foundation, Switzerland
ZEW – Center for European Economic Research, Germany

Organizing committees

Workshop on Economic Complexity and Macroeconomic Dynamics, Bamberg, 2025
Seventh Behavioral Macroeconomics Workshop, Bamberg, 2025
Workshop on Economic Complexity and Macroeconomic Dynamics, Valencia, 2024
Sixth Behavioral Macroeconomics Workshop, Heidelberg, 2024
Workshop on Economics with Heterogeneous Interacting Agents, Bamberg, 2024
Ninth GENED Meeting, Bamberg, 2023
Fifth Behavioral Macroeconomics Workshop, Bamberg, 2023
Fourth Behavioral Macroeconomics Workshop, Bamberg, 2022
Third Behavioral Macroeconomics Workshop, Bamberg, 2021
Second Behavioral Macroeconomics Workshop, Bamberg, 2019
First Behavioral Macroeconomics Workshop, Bamberg, 2018
Fourth GENED Meeting, Bamberg, 2016
Workshop on Interacting Agents and Nonlinear Dynamics in Macroeconomics, Udine, 2010

Scientific committees

Workshop on Economics with Heterogeneous Interacting Agents, Suzhou, 2025
30th International Conference on Computing in Economics and Finance, Singapore, 2024
29th International Conference on Computing in Economics and Finance, Nice, 2023
Workshop on Economics with Heterogeneous Interacting Agents, Catania, 2022
International Conference of the Society for Computational Economics, Warsaw, 2020
Workshop on Economics with Heterogeneous Interacting Agents, London, 2019
Workshop on Managing Financial Instability in Capitalistic Economies, Reykjavik, 2010
Workshop on Economics with Heterogeneous Interacting Agents, Alessandria, 2010
Workshop on Optimal Control, Dynamic Games and Nonlinear Dynamics, Amsterdam, 2010
Workshop on Managing Financial Instability in Capitalistic Economies, Reykjavik, 2009
Agent-Based Approaches in Economic and Social Complex Systems, Taiwan, 2009
Workshop on Computational Intelligence in Economics and Finance, Taiwan, 2006
International Conference on Simulated Evolution and Learning, Hefei, 2006
Workshop on Computational Intelligence in Economics and Finance, Salt Lake City, 2005

PhD committees

Bamberg, Giessen, Leuven, Nijmegen, Singapore, Sydney, Vienna.

Habilitation, tenure track and professorial evaluation committees

Bamberg, Bielefeld, Kiel, Prague.

Presentations

Conferences and workshops

Workshop on Nonlinear Economic Dynamics, Naples, 2025

Workshop on Economics with Heterogeneous Interacting Agents, Suzhou, 2025

Workshop on Dynamic Models in Economics and Finance, Urbino, 2024

CeNDEF@15 Workshop, Amsterdam, 2023

Workshop on Dynamic Macroeconomics in Honour of Ingrid Kubin, Vienna, 2023

International Conference of the Society for Computational Economics, Nice, 2023

Workshop on Nonlinear Economic Dynamics, Kristiansand, 2023

Workshop on Economics with Heterogeneous Interacting Agents, Catania, 2022

Workshop on Nonlinear Economic Dynamics, Milan, 2021

Workshop on Nonlinear Economic Dynamics, Kiev, 2019

Workshop on Economics with Heterogeneous Interacting Agents, London, 2019

Workshop on Economics with Heterogeneous Interacting Agents, Tokyo, 2018

International Conference of the Society for Computational Economics, Milan, 2018

Summer School in Economics and Finance, Canazei, 2017

International Conference of the Society for Computational Economics, New York, 2017

International Conference of the Society for Computational Economics, Bordeaux, 2016

The GeComplexity Conference, Heraklion, 2016

Dynamic Macroeconomics Workshop, Kiel Institute for the World Economy, 2015

GENED Meeting, Darmstadt, 2014

Workshop on Dynamic Models in Economics and Finance, Urbino, 2014

CeNDEF@15 Symposium, Amsterdam, 2013

Workshop on Nonlinear Economic Dynamics, Siena, 2013

International Workshop on Nonlinear Dynamics, Agent-based Models, and Complex Evolving Systems in Economics, Bologna, 2013

Workshop on Network and Heterogeneity in (Financial) Markets, Marseille, 2013

Workshop on Dynamic Models in Economics and Finance, Urbino, 2012

International Conference of the Society for Computational Economics, Prague, 2012
Rethinking Economic Policies in a Landscape of Heterogeneous Agents, Milan, 2011
Amsterdam Symposium on Behavioral and Experimental Economics, Amsterdam, 2011
Nonlinear Economic Dynamics and Financial Market Modeling, Guangzhou, 2011
Quantifying and Understanding Dysfunctions of Financial Markets, Leuven, 2010
Artificial Economics 2010, Treviso, 2010
International Conference of the Society for Computational Economics, London, 2010
Workshop on Interacting Agents and Nonlinear Dynamics in Macroeconomics, Udine, 2010
Workshop on Optimal Control, Dynamic Games and Nonlinear Dynamics, Amsterdam, 2010
Workshop on Nonlinear Economic Dynamics, Jönköping, 2009
Workshop on Agent Based Models in Economic Policy Advice, Mannheim, 2009
Conference on Heterogeneous Agents in Financial Markets, Rotterdam, 2009
Nonlinear Economic Dynamics and Financial Market Modeling, Beijing, 2008
Workshop on Dynamic Models in Economics and Finance, Urbino, 2008
CeNDEF Workshop on Economic Dynamics, Leiden, 2007
Workshop on Nonlinear Economic Dynamics, Bielefeld, 2007
Workshop on Economics with Heterogeneous Interacting Agents, Bologna, 2006
Third International Meeting on Complexity, Aix-en-Provence, 2006
Workshop on Computational Political Economics, Bielefeld, 2006
Workshop on Bubbles, Herding and Market Crashes, Kiel, 2005
Ausschuss für Makroökonomik, Bonn, 2005
Workshop on Agent-Based Models for Economic Policy Design, Bielefeld, 2005
Workshop on Economics with Heterogeneous Interacting Agents, Essex, 2005
Society for Nonlinear Dynamics and Econometrics, London, 2005
New Economic Windows, Salerno, 2004
International Conference of the Society for Computational Economics, Amsterdam, 2004
Workshop on Nonlinear Dynamics in Economics, Triest, 2004
Annual Congress of the European Economic Association, Stockholm, 2003
International Conference of the Society for Computational Economics, Seattle, 2003
Workshop on Economics with Heterogeneous Interacting Agents, Kiel, 2003
Workshop on Optimal Control, Dynamic Games and Nonlinear Dynamics, Vienna, 2003
Second International Meeting on Complexity, Aix-en-Provence, 2003
Society for Nonlinear Dynamics and Econometrics, Florence, 2003
Bundesbank Workshop on Computational Economics and Finance, Eltville, 2002

CeNDEF Workshop on Economic Dynamics, Leiden, 2002

Jahrestagung des Vereins für Socialpolitik, Magdeburg, 2001

International Conference of the Society for Computational Economics, New Haven, 2001

CeNDEF Workshop on Economic Dynamics, Amsterdam, 2001

ZEI Summer School on International Finance, Bad Honnef, 2000

International Conference of the Society for Computational Economics, Barcelona, 2000

Workshop on Optimal Control, Dynamic Games and Nonlinear Dynamics, Vienna, 2000

CeNDEF Workshop on Economic Dynamics, Amsterdam, 2000

ZEI Summer School on International Macroeconomics, Bad Honnef, 1999

Nachwuchstagung Asienkrise, Demokratie, Nationalismus, Brühl, 1999

Young Economist Meeting, Amsterdam, 1999

Invited talks

2024: University of Osnabrück.

2017: University of Amsterdam.

2010: University of Bielefeld, Katholieke Universiteit Leuven.

2006: University of Bamberg, University of Nürnberg, University of Leipzig, University of Göttingen.

2005: University of Mainz, Technical University of Braunschweig, University of Essen, Technical University of Dresden, University of Bremen, Technical University of Berlin, University of Münster, University of Bonn, University of Cologne.

2004: University of Bielefeld, University of Hanover.

2003: University of Amsterdam.

2002: University of Kiel, University of Prague, University of Münster.

University services (selection)

Director of the Institute of Economics, Bamberg

Speaker of the Department of Economics, Bamberg

Chairman of the Board of Examiners, Bamberg

Chairman/Member of Chair Search Committees, Bamberg and Osnabrück

Member of the Faculty Committee, Osnabrück

External research grants (selection)

COST Action IS1104: The EU in the new complex geography of economic systems: models, tools and policy evaluation, financed by the European Union

Graduate program on Behavioral Macroeconomics, financed by the Hans-Böckler Foundation

Graduate program on Bounded Rationality, Heterogeneity and Network Effects, financed by the Hans-Böckler Foundation

Teaching experience

<u>Lectures at undergraduate level</u>

Macroeconomics I (University of Bamberg)

Macroeconomics II (University of Bamberg)

Monetary Policy of the ECB (University of Bamberg)

Empirical Macroeconomics (University of Bamberg)

<u>Lectures at graduate level</u>

Economic Dynamics (Universities of Bamberg and Osnabrück)

Financial Market Dynamics (Universities of Bamberg, Bonn and Osnabrück)

Regulation of Financial Markets (Universities of Bamberg, Bonn and Osnabrück)

<u>Lectures at postgraduate level</u>

Financial Markets: Stylized Facts, Nonlinear Models and Regulatory Issues (Canazei, Urbino)

<u>Tutorials at undergraduate level</u>

Macroeconomics I (University of Bamberg)

Macroeconomics II (University of Bamberg)

Deductive Statistics (University of Osnabrück)

Inductive Statistics (University of Osnabrück)

<u>Seminars at undergraduate level</u>

European Economic Issues (University of Bamberg)

Quantitative Economics (University of Bamberg)

<u>Seminars at graduate level</u>

International Economics (University of Osnabrück)

Economic Policy (University of Bamberg, University of Bonn)

last update: August 2025