

# Curriculum Vitae

## Prof. Dr. Astrid Krenz

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### Academic Positions

**Professor of Economics (W2)**, Ruhr University Bochum (Germany) (10/2022 - )  
**Miguel Dols Research Fellow**, London School of Economics and Political Science (United Kingdom), Canada Blanch Centre (04/2024 - 03/2025)  
**Research Fellow (Postdoctoral Researcher)**, University of Sussex (United Kingdom), Research Centre “Digital Futures at Work” (Digit) (05/2020 – 09/2022)  
**Alfried-Krupp Junior Research Fellow**, University of Greifswald (Germany) (10/2020 - 03/2021)  
**Postdoctoral Researcher**, University of Göttingen (Germany) (04/2020 – 09/2021)  
**Akademische Rätin (Postdoctoral Researcher)**, University of Göttingen (Germany), Chair of International and Monetary Economics (04/2012 - 03/2020; on sabbatical leave 10/2017 - 09/2019)  
**Marie Curie Junior Research Fellow**, Durham University (United Kingdom) (10/2017 - 09/2019)  
**Research Associate**, University of Göttingen (Germany), Chair of International and Monetary Economics (12/2007 - 03/2012)

### Professional Affiliations

**Ruhr Graduate School of Economics Faculty Member (RGS Econ)** (02/2023 - )  
**Member of the Center for Entrepreneurship, Innovation, and Transformation (CEIT)**, Ruhr University Bochum (10/2022 - )  
**Member of the Competence Field “Empirical Economic Research” UA Ruhr** (10/2022 - )  
**Associate Fellow**, University of Sussex, Research Centre “Digital Futures at Work” (Digit) (10/2022 - )

### Education

**Dr. rer. pol.** (Economics) (summa cum laude), University of Göttingen, Thesis Title: Industrial and Services Sectors’ Agglomeration in the European Union, 2012  
**Diploma in Economics** (with distinction), University of Bielefeld, 2007  
Thesis Title: Econometric Analyses on the returns to education in the German economy

### Further Qualifications

#### Visiting Researcher

- Monash University (Australia), 09/2014-12/2014
- Université de Fribourg (Switzerland), 10/2013-11/2013
- College of William and Mary (USA), 03/2013-04/2013

#### Summer Schools and Classes

- Master Class on EU Cohesion Policy, European Week of Regions and Cities, Brussels, October 2017
- Summer School on Economic Growth, Warwick University, July 2014
- Summer School on Economic Growth, University Naples Parthenope, June 2014

#### Study abroad programme

- Purdue University (USA), 08/2005-05/2006, funded by the German Academic Exchange Service (DAAD), participation in PhD courses in Economics and Statistics

#### Interdisciplinary study programme “Europa Intensiv”

- University of Bielefeld, 10/2004-07/2005, courses in Linguistics, Sociology, Political Science, Law

#### Abitur

- A-levels certificate

## Research Grants

- Project title: “**Digital infrastructure and regional disparities in comparison between eastern and western Germany**”, Principal Investigator, 2020-2021, ~20K, Alfried-Krupp Junior Research Fellowship.
- Project title: “**Firm-level analyses of Agglomeration Externalities, Knowledge Spillovers, and Productivity Growth**”, Principal Investigator, 2017-2019, ~100K, Durham International Junior Research Fellowship, Marie Curie Cofund.
- Project title: “**European market integration and determinants of German firm localization**”, Principal Investigator, 2014-2017, 3K, Lindemann Foundation.

## Research

### Publications

- **What makes German manufacturing plants move locations?** (2023), *Annals of Regional Science*, <https://doi.org/10.1007/s00168-023-01238-x>.
- **Physiological Aging in India: The Role of the Epidemiological Transition** (2023), with H. Strulik, *PLOS ONE*, 18,7, <https://doi.org/10.1371/journal.pone.0287259>.
- **Unsupervised Document Classification integrating Web Scraping, One-Class SVM and LDA Topic Modelling** (2023), with B. Saefken, A. Thielmann, C.J. Weisser, *Journal of Applied Statistics*, 50, 3, 574-591, <https://doi.org/10.1080/02664763.2021.1919063>.
- **Robots, Reshoring, and the Lot of Low-Skilled Workers** (2021), with K. Prettner and H. Strulik, *European Economic Review*, 136, 103744, <https://doi.org/10.1016/j.euroecorev.2021.103744>.
- **The Impact of Menstruation Hygiene Management on Work Absenteeism of Women in Burkina Faso** (2021), with H. Strulik, *Economics and Human Biology*, 43, 101067, <https://doi.org/10.1016/j.ehb.2021.101067>.
- **Quantifying Reshoring at the Macroeconomic Level – Measurement and Applications** (2021), with H. Strulik, *Growth and Change*, 52, 3, 1200-1229.
- **The Benefits of Remoteness – Digital Mobility Data, Regional Road Infrastructure, and Covid-19 Infections** (2021), with H. Strulik, *German Economic Review*, 22, 3, 257-287.
- **One-Class Support Vector Machine and LDA Topic Model Integration- Evidence from AI patents** (2021), with A. Thielmann and C.J. Weisser, *Studies in Computational Intelligence*, 981, Soft Computing: Biomedical and Related Applications, Editors N.H. Phuong, V. Kreinovich, Springer.
- **The Effects of Absorptive Capacity on Innovation Performance – A Cross-Country Perspective** (2020), with R. Harris and J. Moffat, *Journal of Common Market Studies*, 59, 3, 589-607.
- **Knowledge and Earnings – A Regional Economic Analysis for the German Economy** (2015), *Conference Proceedings of the Regional Studies Association*, 106-108.
- **European market integration, R&D agglomeration economies, and the location choice of firms in Poland** (2015), with A. Gehringer, *Eastern European Economics*, 53, 491-513.
- **Adjustment Dynamics of Countries' Specialization Patterns in the European Union** (2014), *Applied Economics Letters*, 21, 671-674.
- **Services sectors' concentration and countries' specialization patterns in services in the European Union: A comparative analysis with a special focus on France, Germany, Greece, and the UK** (2014), *Regional and Sectoral Economic Studies*, 14, 23-32.
- **Services Sectors' Concentration: the European Union and the New Economic Geography** (2013), *Applied Econometrics and International Development*, 13, 29-44.
- **Industrial and Services Sectors' Agglomeration in the European Union** (2012), University of Göttingen, e-dissertation.
- **Econometric analyses on the returns to education of young people from low-class families in Germany** (in German) (2008), Saarbrücken/Bielefeld, diploma thesis.

### Working papers

- **Automation and the Fall and Rise of the Servant Economy**, 2023, with H. Strulik.
- **The Gender Gap in Firms' International Trade – Female Exporters and the Exporter Productivity Premium in Germany**, 2023.
- **Comparing New Measures of Tech Talent: Global AI, Digital Infrastructure, and Innovation**, 2023, with R. Dickens and J. O'Reilly.
- **What drives the location choice of new manufacturing plants in Germany?**, 2023.

- **Firm heterogeneity, productivity, and the extensive margins of trade - Differences between manufacturing firms in East and West Germany**
- **A Macroeconomic Measure for Reshoring and a Note on the Offshoring-Reshoring Nexus**
- **A Stata Code for computing a distance-based Firm-Level Cluster Index**

#### Work in progress

- **Digital infrastructure, firm location choices, and regional disparities in comparison between East and West Germany**
- **The spatial distribution of vaccination innovations – A cluster analysis based on patent data for the European Union, with H. Strulik**
- **Scale effects and innovative activities – Big Data analyses and evidence for AI patents, with H. Strulik**
- **Digital Infrastructure, Innovation, and Economic Growth, with H. Strulik**
- **The Impact of Regional Infrastructure for Firm-Level Trade and Productivity – Evidence from a Regression Discontinuity Framework**
- **The Dynamics of German Industry Clustering**
- **Regional Drivers of Firm-Level Productivity – Evidence from German Upper Mittelstand Firms**

#### Teaching

(WT=winter term, ST=summer term)

**Lecturer**, Ruhr University Bochum, 10/2022 –

- Lecture on **Machine Learning and Programming in Python** (Master & PhD level), WT 2023/24, ST 2024
- Lecture on **Introduction to Data Science** (Bachelor level), ST 2023, WT 2023/24
- **Seminar on Digital Transformation and Economic Development** (Bachelor level), ST 23, WT 2023/24, ST 2024
- **Seminar on Growth, Sustainability, and Transformation** (Bachelor level), WT 2023/24, ST 2024
- **Seminar on Data Science in Economics** (Master level), WT 2022/23, ST 23
- **Bachelor Seminar on Data Science** (Bachelor level), WT 2022/23, ST 23, WT 2023/24, ST 2024

**Lecturer**, University of Göttingen, 04/2012 – 09/2021

- Lecture in **Regional and Urban Economics** (BA level), ST 13, WT 14/15
- Lecture in **Geographical Economics** (MSc level), WT 12/13, WT 13/14
- Lecture in **Economics of European Integration and European Monetary Policy** (MSc level), ST 17
- Exercise Lecture in **Macroeconomics II** + supervision of tutors (BA level), ST20
- Several reading courses (in German *Seminar*) in **Regional and Urban Economics, Economic Geography, Migration and Economic Development, Economics of the European Union**, WT 2016/17, ST16, WT 14/15, ST 2016, WT 16/17, WT 19/20, ST 21

**Teaching Assistant**, University of Göttingen, 12/2007-03/2012

- Exercise Lecture (in German *Übung*) in **International Trade** (MSc level), WT 08/09
- Exercise Lecture in **Monetary Theory and European Monetary Policy** (MSc level), ST 08 and 09
- Exercise Lecture in **Monetary Theory and Monetary Policy** (BA level), ST 10, 11 and 12
- Exercise Lecture in **Foundations of International Economic Relations** (BA level), WT 09/10, 10/11 and 11/12
- **Firms and Markets** (BA level), WT 07/08
- Several reading courses like **Monetary Theory and Monetary Policy, Monetary Theory and European Monetary Policy, Advances in International Trade**, ST 10, 12 and WT 10/11, 11/12, WT 08/09 and 09/10, WT 07/08, 08/09 and 09/10, ST 08, 09, 11 and 13, WT 12/13, ST13

**Teaching Assistant**, University of Bielefeld, 10/2004-03/2005

- **Introduction to Economics** (BA level)

#### Supervision of Bachelor- and Master theses

**First or second supervisor**, among others “Growth of Cities: Theoretical Aspects and Empirical Analyses”, „Hedonic Founded Cleaning of the estimated Property Value in the Micro Survey Panel on Household Finances by Linear Stochastic Imputation“, “A theory-based Analysis of the Effects of Regional and Structural Policy in the EU”, “Agglomeration and Growth – A Comparative Analysis for the European Union”, „The Sovereign Debt Crisis in the EU - a theory-based Analysis of the Causes and Institutional Actions”, „The impact of the NAFTA on regional wage

differentials in Mexico“, “A theory-based Analysis of Macroeconomic Imbalances during the euro crisis - Institutional Actions in regard to Monetary and Fiscal Policy”, “Internal Migration and Regional Inequality in China”, “An Analysis of the Causes and Economic Consequences of the Brexit in the Light of the Relations between the European Union and the United Kingdom”, “The problem of unbalanced and unlabelled data sets: unsupervised document classification with out-of-domain training data, one-class SVM and LDA Topic Modelling”, “A theory-based analysis of emission-pricing instruments”, “A Comparative Analysis of Socio-Economic Factors Influencing Contraceptive Use: Evidence from the PMA2020 Dataset”, “Satellite Data in Machine Learning – New Methods for Measuring Economic Development”, “The Digital Transformation in the German Healthcare System – Opportunities and Challenges of Blockchain Technology”

### In the Media

- Royal Economic Society Blog: **Regional Road Infrastructure and Location Choices of Plants: Evidence from Germany**, 2021
- Ostsee-Zeitung: **MV hinkt bei der Digitalisierung hinterher**, 2021
- ForeignBrief TwentyTwenty Podcast: **Automation Acceleration**, 2020
- The Daily Telegraph: **Women fare better than men when it comes to beating the rise of the robots**, 2019
- LSE Business Review: **Industrial robots are bringing jobs back home, but not for low-skilled workers**, 2019
- World Economic Forum: **Industrial robots are bringing jobs back home, but not for low-skilled workers**, 2019
- Royal Economic Society Blog: **Industrial robots are bringing jobs back home, but not for low-skilled workers**, 2019
- Harvard Business Manager: **Reshoring: Von Fachkräften und Robotern**, 2019
- Business Day: **Trump’s job plan would benefit robots**, 2019
- Global Economic Dynamics Blog, Bertelsmann Stiftung: **What is the Impact of Reshoring? Will Digitalization bring jobs back to developed countries?**, 2019
- Der Spiegel: **Einmal China und zurück**, 2018

### Further grants and scholarships

- Conference grant, “*Nachwuchsprämie*”, Verein für Socialpolitik 2019
- Research travel grant, Unibund University of Göttingen 2013, 2014, 2015
- Faculty travel grant, University of Göttingen 2014
- Conference travel grant, Econometric Society 2009
- Travel grant, Excellence-Initiative University of Göttingen 2009
- Slesinger Fellowship, University of Pittsburgh (declined the offer) 2007
- PhD position at Pennsylvania State University (declined the offer) 2007
- Best Diploma of the Department of Economics, University of Bielefeld 2007
- DAAD Scholarship (German Academic Exchange Service) 2005-2006
- Participation in the study programme “*Europa Intensiv*”, University of Bielefeld 2004-2005

### Refereeing

*American Economic Journal-Applied Economics; American Journal of Agricultural Economics; Cambridge Journal of Regions, Economy, and Society; Canadian Journal of Economics; Economics of Innovation and New Technology; Economics Letters; Economic Modeling; Economic Systems Research; European Economic Review; Evangelisches Studienwerk Villigst; Journal of Economic Growth; LABOUR, Review of Labour Economics and Industrial Relations; International Economics and Economic Policy; International Review of Applied Economics; Metroeconomica; Nature, Humanities and Social Sciences Communications; PLOS ONE; Regional Studies; Review of Development Economics; Review of International Economics; Services Industries Journal; Social Indicators Research; Technological Forecasting and Social Change; Telecommunications Policy*

### Memberships

American Economic Association, European Economic Association, Econometric Society, Regional Studies Association, *Verein für Socialpolitik* (German Economic Association), *Gesellschaft für Regionalforschung*, *Deutscher Hochschulverband*, Financial Geography Network

### Talks at Conferences (peer-reviewed)

- AEA/ASSA: 2021 (Chicago) as Discussant
- Econometric Society: 2009 (Canberra), 2009 (Tokyo), 2014 (Taipeh), 2019 (Manchester), 2020 (Bocconi)
- EEA: 2019 (Manchester)
- Royal Economic Society: 2018 (Brighton), 2019 (Warwick University), 2021 (Belfast), 2023 (Glasgow)
- EARIE: 2017 (Maastricht)
- EALE: 2019 (Uppsala), 2022 (Padua)
- PhD Meeting Royal Economic Society: 2011 (London)
- Verein für Socialpolitik: 2012 (Göttingen), 2016 (Augsburg), 2019 (Leipzig), 2020 (Köln), 2022 (Basel)
- ETSG: 2009, 2010, 2011, 2014, 2015, 2019
- Regional Studies Association: 2013, 2015, 2016, 2017, 2018, 2019
- SASE Annual Conference: 2022 (Amsterdam)
- ENEF: 2018 (Brighton)
- Tasks V: Robotics, Artificial Intelligence and the Future of Work conference, 2019 (Bonn)
- Deep Roots of Economic Growth Conference- The Role of Geography, History and Institutions: 2017 (Naples)
- World Congress on Comparative Economics: 2015 (Rome)
- Regional Economics Workshop in Vienna (Geoffrey Hewings): 2014, 2016, 2019

### Invited Seminars and Talks

**2024:** University of Duisburg-Essen, RWI Essen

**2022:** University of Bremen

**2020:** University of Manchester, ETUI Brussels, University of Bath

**2019:** EU Social Situation Monitor Brussels

**2018:** Universitat Rovira i Virgili (Reus)

**2017:** Statistical Office IT.NRW (Düsseldorf); University of Augsburg

**2015:** University College Dublin

**2014:** Economics Seminar (Monash); Econometrics Seminar (Monash)

**2013:** College of William and Mary (Williamsburg); Trade Group Seminar (Göttingen); Université de Fribourg

**2012:** University of Kiel

**2011:** Université de Genève

### Organisation of Workshops

Main local organizer of an annual conference in International Economics (“Göttinger Workshop *Internationale Wirtschaftsbeziehungen*”), University of Göttingen 2012 - 2017

### Internships

- Internship at the “German Permanent Mission to the Office of the United Nations and the Other International Organisations”, WTO Department, Geneva, 06/2006-07/2006
- Internship Deutsche Bank AG, 01/2000

### Committees

- Member of the Faculty Council (*Fakultätsrat*), Department of Management and Economics, Ruhr University Bochum
- Member of the Research Committee, Department of Management and Economics, Ruhr University Bochum
- Member of the Committee of Study Affairs, Department of Management and Economics, Ruhr University Bochum
- Member of the Managing Committee (*Vorstand*) of the Department of Economics, University of Göttingen

- Member of the Research Committee of the Department of Management and Economics, University of Göttingen
- Member of the search committees for a professorship in: International Economic Policy, Econometrics I, International Economics, Econometrics II, University of Göttingen
- Member of the search committees for students applying for the “*Niedersachsen-Stipendium*” and for the “*Deutschland-Stipendium*”, University of Göttingen
- Main local organizer of the regional group of the German Academic Exchange Service (DAAD *Freundeskreis*) in Göttingen, 2012-2017

#### **Software and Language Skills**

- Software and programming knowledge: CSS, EViews, HTML, Latex, OxMetrics, Python, R, RunGEM/Gempack, SAS, STATA
- Languages: German (native), English (proficient), Spanish (intermediate), French (intermediate), Latin