Francesca Micocci

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Research Interests

Machine learning, Policy evaluation, International economics, Trade, Microeconometrics

Education

IMT School for Advanced Studies Lucca 2019 – Present
Ph.D. student in Economics

- *Thesis:* Essays on Prediction and Causality in International Economics using Machine Learning
- *Supervisor:* Armando Rungi

Università di Pisa and Scuola Superiore degli Studi Sant'Anna di Pisa 2016 – 2018
M.Sc. in Economics and Official Statistics

- *Thesis:* Measuring Households' economic well-being with a multidimensional technique: An analysis of consumption data using MSI
- *Supervisor:* Monica Pratesi
- *Score:* 110/110 cum laude

Abo Akademi University 2015
Erasmus+ Exchange program

Università degli Studi di Trento 2013 – 2016
Bachelor of Economics and Management

- *Thesis:* Analysis of the relationship UK-EU and the hypothesis Brexit - Guide to a conscious choice
- *Supervisor:* Andrea Fracasso
- *Score:* 109/110

Training and Summer Schools

Quantitative Methods for Public Policy Evaluation 2021
Barcelona Graduate School of Economics *Virtual*

- *Lecturer:* Stephan Litschig

Experience

Wiener Institut für Internationale Wirtschaftsvergleiche (WiiW) and IMT School for Advanced Studies Lucca May 2023 – Present
Research Collaborator

- *Project:* Diffusion of technology in the EU and domestically owned firms via FDI – the case of green and environmental technologies
- *Supervisors:* Mahdi Ghodsi and Armando Rungi

Centre d'Études Prospectives et d'Informations Internationales (CEPII) Feb 2022 – Aug 2022
Research Intern

- *Project:* The heterogeneous effects of CETA on French export, using Machine Learning
- *Supervisor:* Lionel Fontagné

European Central Bank (ECB) 2019
Trainee

- Directorate of General Statistics of ECB, Analytical Credit & Master Data division, RIAD team (Register of Institutions and Affiliates Database)
- *Referee:* Romana Peronaci

Istituto Nazionale di Statistica (Istat) 2017 - 2018
Research Trainee

- Department for statistical production (DIPS) involved in the implementation of a new multidimensional indicator of poverty and living condition
- *Referee:* Barbara Baldazzi

Università degli Studi di Trento 2015 - 2016

Guidance Counsellor

- Guidance Counsellor for high-school students and candidates to the faculty of Economics and Management of the University of Trento.
- *Referee:* Francesca Pizzini

Teaching

Econometrics I 2022

PhD in Economics at the IMT School for Advances Studies. Teaching Assistant

- Referee: Armando Rungi

Econometrics II 2021-2022

PhD in Economics at the IMT School for Advances Studies. Teaching Assistant

- Referee: Armando Rungi

Microeconomics 2021

PhD in Economics at the IMT School for Advances Studies. Teaching Assistant

- Referees: Andrea Canidio and Kenan Huremovich

Political Economy I 2022

BSc in Economics at the University of Pisa. Graduate Assistant

- Referee: Simone D'Alessandro

Publications

Predicting exporters with Machine Learning Link

with Armando Rungi (IMT). World Trade Review, 1-24

Research

The heterogeneous effects of CETA on French Export

with Lionel Fontagné (CEPII) and Armando Rungi (IMT). Status: Work in Progress

Ex post assessment of the trade impact of Free Trade Agreements on heterogenous exporters is subject to problems of self selection and design of the right counterfactual. This paper shows that a machine learning approach helps address these issues. We illustrate this methodological question by estimating the causal impact of the CETA on the exports of French firms. We implement a matrix completion algorithm to obtain multidimensional counterfactuals at the firm, product and destination level, thus estimating the effect of tariff reductions. First, aggregating French firms and observing the impact at the product level we find a positive effect, as the intensive margin to Canada increases by 0.4%, while the extensive margin rises by 0.14%. We also observe export diversion, as the intensive margin of exports to the rest of the World decreases by 1.73% after implementation of the CETA. At the firm level, we observe a concentration on the firms' best-performing products, resulting in a cannibalization effect on the intra-firm extensive margin. Furthermore, our firm-level analysis allows us to identify the share of export to Canada in the firm's portfolio before the treatment as a novel and crucial source of heterogeneity in the treatment effects. Our findings are robust to different matrix configurations, and to alternative matrix completion and unit-selection strategies.

Learning by exporting - A continous treatment effect analysis

with Armando Rungi (IMT) and Giovanni Cerulli (CNR). Status: Work in Progress

The existing body of research on learning by exporting has firmly established that both engaging in exports and having a higher export intensity (measured as the export-to-sales ratio) significantly enhance labor productivity and total factor productivity (TFP). However, there has been limited exploration of the specific shape of this relationship. To address this gap, we utilize Cerulli's (2015) model, which estimates a dose-response function for continuous treatment, accommodating the possibility of heterogeneous responses to observable factors. Our aim is to assess how varying levels of export intensity impact firm performance in the following year,

with performance calculated as Total Factor Productivity (TFP) using the Ackerberg and Frazer methodology. We find that the relationship between export intensity and productivity is non-linear and the advantages of learning-by-exporting are most pronounced when export intensities are above 60%. This suggests that firms truly begin to reap the rewards of exporting when it evolves into a pivotal source of profitability. At this stage, firms start investing in product adaptation and the establishment of efficient export logistics. These strategic investments translate into increased productivity, enabling them to maintain competitiveness in foreign markets. Conversely, when export intensity is low, the impact is primarily characterized by additional costs, without substantial influence on the core production processes of firms.

Work in progress

The impact of SMEs State Aids on competition and employment
with Armando Rungi (IMT). Status: Work in Progress

Diffusion of technology in the EU and domestically owned firms via FDI – the case of green and environmental technologies
with Mahdi Ghodsi (WiiW) and Armando Rungi (IMT). Status: Work in Progress

Conferences

2023 Sardinian Empirical Trade Conference (SETC)

2022 14th FIW-Research Conference International Economics (FIW), Congress of the European Economic Association and European Meeting of the Econometric Society (EEA-ESEM), Meeting of the Italian Trade Study Group (ITSG)

2021 13th FIW-Research Conference International Economics (FIW), 22nd Annual Conference of the European Trade Study Group (ETSG)

Languages

Native: Italian
Professional: English (C1 in Cambridge Assessment)
Basic: French

Computer Skills

Advanced Knowledge: R, Stata, Excel, Latex
Intermediate Knowledge: Python, Tableau
Basic Knowledge: SQL, VBA

Certificates

GRE General Test *Quatitative Reasoning:* 165, *Verbal Reasoning:* 153, *Analytical Writing:* 4
Cambridge Assessment English : C1 Advanced (CAE)
European Certificate Driving Licence (ECDL Full) : Computer Essentials, Online Essentials, Word processing, Spreadsheets, Presentation, IT Security, Online Collaboration

Awards

Merit Award, Università degli Studi di Trento

Competitions

Innovation Olympics (2016), Università degli Studi di Trento
Marketing Competition for *The Shift* (2015), Abo Akademi University
Certamen Veliternum (2013), Velletri (Italy)
National Student Sport Games of Indoor Climbing F.A.S.I. (2012) Città di Castello (Italy)