Cover Letter

Marie Fuchs

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Application for the NBER Innovation Research Bootcamp 2025

Dear Prof. Bryan, Prof Ganguli and Prof. Myers,

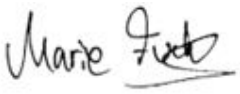
I am writing to express my keen interest in participating in the NBER Innovation Research Bootcamp to receive the necessary tools to improve my current projects in the intersection of innovation and macroeconomics and to further explore potential future research together with participants of the bootcamp.

As a Ph.D. student at the London School of Economics with a focus on macroeconomics and international economics, I have had the unique opportunity to receive well-founded training in the foundations of innovation and growth. In particular, I received rigorous training in the canonical growth models and models of creative destruction within my PhD field course by Philippe Aghion. This in addition to teaching a course sequence on firm dynamics sparked my interest to explore the topic further within my career as a macroeconomist.
As a visiting researcher at the Bank of England and within my second-year paper, I am currently working on two projects on serial entrepreneurship and innovation to further develop this interest. Thus, attending the Innovation Research Bootcamp would be a unique opportunity for me to learn the necessary tools to succeed in the field while being exposed to the current frontier questions in innovation.

For a reference to my motivation and level of preparation for the course, please contact Prof. Ricardo Reis, Arthur Williams Phillips Professor of Economics at LSE (r.a.reis@lse.ac.uk). Enclosed, please find my CV, a brief statement outlining my motivation for attending the bootcamp, and a list of my PhD coursework.

Thank you for considering my application. I look forward to the opportunity to participate.

Sincerely,



Marie Fuchs

Enclosures: CV, Statement of Interest, PhD Coursework List

CURRICULUM VITAE

Marie Fuchs

Contact Information

The London School of Economics and Political Science
Sir Arthur Lewis Builidng
London WC2A 3PH

Email : m.fuchs1@lse.ac.uk

Education

London School of Economics & Political Science

MRes/PhD in Economics — 2023 - Present
MSc in Economics (2 year programme) — 2021 - 2023

Frankfurt School of Finance & Management

BSc in Business Administration — 2017 - 2020

University of Cambridge

Visiting Student — 2019 - 2020

Fields of Interest

Macroeconomics, International Economics, Monetary Economics

Work in Progress

The Global Network of Liquidity Lines, with Saleem Bahaj and Ricardo Reis (May 2024)
Serial Entrepreneurship over the Business Cycle , with Saleem Bahaj, Angus Foulis, Carl Gergs and Sophie Piton (January 2025)

Research & Policy Experience

Bank of England, Academic Visitor (London) — 2024 - Present
London School of Economics, Research Assistant to Prof. Ricardo Reis (London) — 2023 - 2024
ISS ESG, Data Analysis Intern (Munich) — 2021
UNDP, Research Volunteer (Remote) — 2020
OECD, Policy Research Intern (Paris) — 2018

Other Professional Experience

London School of Economics, Council Member & Company Director (London) — 2023 - Present
McKinsey & Company, Fellow Intern (Cologne) — 2021
The Boston Consulting Group, Visiting Associate (Frankfurt) — 2020
KfW Bank Group, Trainee (Frankfurt) — 2017 - 2020
German Investment Corporation, Secondee KfW Bank Group (Cologne) — 2018

Teaching

EC334 Advanced Macroeconomics (LSE)	2025
EC400 Introductory Course in Mathematics & Statistics (LSE)	2024
EC2A3 Microeconomics II (LSE)	2024

Scholarships & Awards

LSE PhD Studentship	2023
Zonta International Jane M. Klausman scholarship	2022
German Academic Exchange Service (DAAD) scholarship	2022
Studienstiftung des Deutschen Volkes scholarship	2018
Konrad Adenauer Foundation scholarship	2018
Frankfurt School of Finance & Management tuition scholarship	2018

Volunteering & Other Services

German Academic Exchange Service, Postgraduate Scholarship Selection	2025
Konrad Adenauer Foundation, Undergraduate Scholarship Selection	2024 - Present
London School of Economics, MSc Economics Student Representative	2021 - 2023
Frankfurt School, BSc Business Administration Student Representative	2017 - 2020
University of Cambridge, Lucy Cavendish College, Student Union Treasurer	2019 - 2020

PhD Coursework

Marie Fuchs

London School of Economics & Political Science

Macroeconomics for MRes Students

- Matthias Doepke - Economic Growth, Business Cycles, Family/Fertility and the Macroeconomy
- Ethan Ilzetzki - Fiscal Policy, Optimal Taxation, Empirical Macroeconomics with Fiscal Application
- Silvana Tenreyo - Models with Money, Monetary Policy
- Benjamin Moll - Heterogeneous Agents, Cross-Country Income Differences, Firm Dynamics

Microeconomics for MRes Students

- Andrew Ellis - Consumer Theory, Choice, Uncertainty
- Daniel Gottlieb - Game Theory, General Equilibrium
- Gilat Levy - Incomplete Information, Signaling, Adverse Selection, Screening, Optimal Auction

Econometrics for MRes Students

- Yike Wang - Nonparametrics, Heterogeneous Treatment Effects
- Steven Pishke - Synthetic Controls, Regression Discontinuity, LATE, Dif-in-Dif, Machine Learning
- Taisuke Otsu - Time Series/Panel Data, Quantile Regression, Bootstrap

International Economics for Research Students I

- Thomas Sampson - Quantitative Trade Models, Firm Heterogeneity, FDI, Labour/Growth in Trade
- Daniel Sturm - Urban Economics, Economics of Geography

International Economics for Research Students II

- Isabela Manelici - Multinational Enterprises, Industrial Policy
- Dimitry Mukhin - Open Economy Macroeconomics, International Capital Flows, Exchange Rates

Macroeconomics for Research Students II

- Jonathan Hazell - Phillips Curve, Wage Rigidity and Unemployment, Automation
- Philippe Aghion - Innovation and Growth
- Maarten De Ridder - Firm Dynamics, Misallocation, Market Power

Public Economics for Research Students I

- David Seim - Inequality, Mobility, Tax Evasion
- Johannes Spinnewijn - Social Insurance, Social Security

Statement of Interest

Marie Fuchs

Motivation

Growing up in a structurally weak region of Germany, I have long been captivated and personally affected by the disparities in economic prosperity and the question of what drives growth. My professional journey, encompassing experiences in international organizations and the German development bank KfW, has reinforced my commitment to a career that integrates the study of growth and inequality with my fascination for macroeconomic dynamics. My objective is it therefore to use firm and household heterogeneity and how it relates to innovation and entrepreneurship to understand the macroeconomy.

In this context I expect the NBER Innovation Research Bootcamp to be particularly relevant in exposing me to frontier topics and discussions by leading researchers in innovation.

Attending the NBER Summer Institute in 2024, I visited the SI Innovation session and interacted with students from the previous bootcamp cohort. This stimulating experience sparked my interest in applying to the program to meet other researchers and share ideas for future research.

Preparation

As both an MSc and subsequently a PhD student at the London School of Economics (LSE), I have undergone rigorous training in the fundamental empirical and model-based techniques essential for innovation-related research. During field courses in macroeconomics, I acquired in-depth knowledge of models of household heterogeneity, firm dynamics, creative destruction, and market power under the supervision of Philippe Aghion, Ben Moll, and others. For my MSc thesis, I solved a heterogeneous agent model, becoming well-versed in introductory dynamic programming approaches. Currently, I am working on a heterogeneous household/firm model for my MRes paper and have attended the HANK summer school by Adrien Auclert, Ludwig Straub, and Matthew Rognlie, where I studied advanced solution techniques, including Sequence-Space-Jacobians. My recent training has focused on relating this heterogeneity to macroeconomic outcomes, particularly business dynamism and spatial inequality in the UK. This academic foundation positions me well to engage with the advanced level of intellectual debate within the bootcamp.

Research Interest

Building on my above preparation I am currently working on two separate projects that weave together my passion for macroeconomic dynamics and interest in innovation as a driver. Within my second-year paper at the LSE, I am asking: Can a country solve geographical inequality. Here I develop a model of multidimensional heterogeneity in households, firm productivity, and locations. Entrepreneurs have a discrete choice to start a business and to invest in innovation when owning a business which drives heterogeneity endogenously thus creating spatial and social disparities. I leverage data from the Bank of England of all firms in the UK economy since 1995. I manage to link firm owners and directors across firms and time, and also trace if they move home within the UK which allows a new perspective on their location choice before and after the innovation choice.

My second project, together with Saleem Bahaj, Angus Foulis, Carl Gergs, and Sophie Piton, exploits the same data source and empirically examines serial entrepreneurship. By linking entrepreneurs, we are able to demonstrate learning effects from repeated business startups and the variation of returns to serial entrepreneurship over the business cycle.

As I am completing these and searching for further topics that link innovation to macroeconomic outcomes, the course would serve as the ideal preparation for a more in-depth understanding. In conclusion, the NBER Innovation Research Bootcamp represents an invaluable opportunity for me to augment my knowledge, refine my skills, and forge connections in this field of research. I am eager to contribute actively to the academic discourse and leverage the insights gained to contribute meaningfully to the field.

Dear Brett,

Marie Fuchs, a PhD student at the LSE, writing her dissertation under my supervision, is applying to these two bootcamps. She asked me to send a brief reference to this email address, following the instructions for these programs,, and so here it is:

Marie is a terrific student with great potential. She stands out especially for her entrepreneurship and tenacity. The summer before her doctoral studies, she asked to work for me as a research assistant. I had her do some large data tasks, and she impressed me by doing a great job: organized, meticulous, and especially quick to solve problems. Especially impressive is that she was excited about the project, and wanted to keep on working during her 1st year studies. She did it so well that I ended up elevating her to co-author on this paper. My coauthor (Saleem Bahaj at UCL) liked working with her so much that they are writing a paper together following up on some discussions they had on a different topic. She then went for an internship at the Bank of England last summer, and while there struck such a good relationship and made such a good impression with some other researchers, that she is well under way on a third paper. For a student about to finish her coursework, she is exceptional in likely having three finished papers by the end of the summer. She has very good empirical skills with micro data, from finding data, filtering it, and thinking through identification strategies.

All three of these projects were on topics of her co-authors' interests, and Marie brought her hard work, problem-solving skills, and insights to be a deserved co-author. She is just starting to explore her own ideas, and for now they revolve around questions on firm dynamics in macro. Namely she has been trying some exciting ideas on the geographic distribution of startups, and what this implies for the size distribution of firms and how this varies over the business cycle. While she is already well grounded on models of firm dynamics, and on entry/exit during the business cycle, all within the macro literature, she has to dig deeper into the frontier research on entrepreneurship and innovation. These bootcamps therefore fit perfectly into what she needs, and I strongly support her application. On your side, you will get someone who will for sure put 100% into the camps and who is a delightful team player, full of energy and wiliness to work together with those around her to figure things out.

Please let me know if you need any further information.

Yours sincerely,

Ricardo Reis