Cover letter

Selma MALMBERG
CEPREMAP, office R5-36
48 boulevard Jourdan
75014 Paris
selma@dynare.org

Contacts for recommendation
François Langot
Francois.Langot@univ-lemans.fr
Pablo Winant
pwinant@escp.eu

Dear Adrien Auclert, Bence Bardóczy, Matthew Rognlie and Ludwig Straub,

Please find enclosed my application to the second annual Workshop on Heterogeneous-Agent Macroeconomics. I am a third-year economics candidate at Le Mans Université and CEPREMAP (France). My PhD thesis combines heterogenous-agent modelling and macroeconomic analysis, which makes this workshop completely aligned with it. Further details on my research interests and motivation for attending this workshop are in the statement.

I satisfy all the required points to apply for this workshop. Indeed, I have already finished two years of my PhD where I worked on macroeconomics topics, especially using dynamic programming.

You may contact François Langot or Pablo Winant, my PhD supervisors, whose email addresses are provided if you need a letter of recommendation.

Thank you for considering my application for this Graduate Student Workshop on Heterogeneous-Agent Macroeconomics. This workshop would be an excellent opportunity for me to further my knowledge of the tools useful to the conduct of my research.

Sincerely,
Selma Malmberg

Statement

My PhD thesis entitled "Great recessions, inequalities and the effectiveness of macroeconomic policies" aims at studying the economic impacts of the latest crises (for instance the Covid pandemic or the energy price shock) and the consequences of various public policies that may be implemented using heterogeneous-agent frameworks. The reason for this modelling choice is that it allows the simultaneous study of the impact on the macroeconomic aggregates and the inequality dynamics.

In that logic, I have worked on a project aiming at assessing the impact of the French tariff shield to mitigate the soar in energy prices following the Russian invasion of Ukraine. This policy is compared to alternative fiscal and monetary scenarios such as cheques to households or a change in the ECB's reactiveness to inflation. Another project focuses on the carbon tax and how policymakers could mitigate the negative impacts that may arise from its implementation thanks to additional policies.[1] I believe that attending this workshop would provide me with new tools to conduct my research in this area.

As I am currently conducting research in HA macroeconomics and policy evaluation (whether fiscal or monetary), I believe this graduate student workshop organised by the NBER would be a perfectly relevant opportunity to broaden my knowledge in the field and interact with researchers and fellow students interested in the same topics and computational techniques.

As I am enrolled in a PhD program in France, I did not have PhD coursework. Yet, I completed advanced courses in macroeconomics and econometrics (with a focus on research) during my master's degree at the Paris School of Economics (the list of relevant courses is in my CV) before joining the program. Additionally, some of my colleagues at the CEPREMAP with prior experience in heterogeneous-agent modelling have taught me the basics when starting back in November 2020.

I am thus familiar with both HANK modelling and dynamic programming. Additionally, Python is the computer language I used in most (if not all) of my research, professional and academic projects.

[1] The associated working papers are available here.

SELMA MALMBERG

48 boulevard Jourdan, 75014 Paris ⋄ selma@dynare.org

EDUCATION

Le Mans Université, Le Mans *2020-Present*
PhD in Economics

Paris School of Economics, Paris *2019-2020*
Master in Economics (Analysis and Policy in Economics)
Courses:

- *Business Cycles and Stabilization Policies (J.-O. Hairault and A. Ferriere)*
- *International Macroeconomics (A. Bénassy-Quéré and M. Bussière)*
- *Advanced Macroeconometrics (C. Doz and L. Ferrara)*
- *Coordination of expectations (R. Guesnerie)*
- *Topics in Macroeconomics (P. Artus)*
- *Monetary and Financial History (P.-C. Hautcoeur and E. Monnet)*
- *Machine learning in Economics (P. Ketz)*

Ecole Nationale des Ponts et Chaussées, Paris *2016-2020*
Diplôme d'Ingénieur

Lycée Janson de Sailly, Paris *2014-2016*
Classe préparatoire in mathematics and physics (MPSI-MP*)

WORK EXPERIENCE

CEPREMAP November 2021 - present
PhD candidate *Paris*

European Central Bank July - September 2022
PhD trainee *Frankfurt-am-Main*

QuantCube Technology June - November 2021
Data analyst intern *Paris*

Société Générale CIB June 2018 - May 2019
Economics research trainee *London*

Lazard January - May 2018
Academic project for the Sovereign Advisory Group *Paris*

TEACHING EXPERIENCE

Sciences Po Paris Spring 2022, 2023
Adjunct Instructor in Statistics applied to social sciences (Bachelor) *Reims*

Sciences Po Paris Fall 2021, 2022
Adjunct Instructor in Mathematics applied to quantitative social sciences (Bachelor) *Reims*

Paris School of Economics Fall 2021
Teaching Assistant in Macroeconomic policies (Master) *Paris*

Université de Paris Spring 2021
Teaching Assistant in Mathematical tools for microeconomics (Bachelor) *Paris*

SKILLS

Programming	Python, Julia, R, Eviews, C++, SQL
Typesetting Document	LaTeX
Languages	French (native), English (fluent), German (basics), Swedish (basics)

PRESENTATION

2023

· Workshop of the EDGE doctoral school: *The Macroeconomic and Redistributive Effects of Shielding Consumers from Rising Energy Prices: the French Experiment*
· Macro Workshop (Paris School of Economics): *The Macroeconomic and Redistributive Effects of Shielding Consumers from Rising Energy Prices: the French Experiment*
· CNRS Thematic School on Public Policy Evaluation (ETEPP) - poster session: *The Macroeconomic and Redistributive Effects of Shielding Consumers from Rising Energy Prices: the French Experiment*
· CNRS Thematic School on Public Policy Evaluation (ETEPP) - poster session: *Making Environmental Policies Acceptable*

2022

· ECB DG-Economics, Supply Side, Labour and Surveillance (SSL) division presentation: *Recurrent crises*
· Macro Workshop (Paris School of Economics): *Household savings and debt in times of crisis*
· GAINS seminar (Le Mans Univeristé): *Solving and estimating a heterogeneous agent model with aggregate shocks*
· CNRS Thematic School on Public Policy Evaluation (ETEPP) - poster session: *Solving and estimating a heterogeneous agent model with aggregate shocks*

2021

· Dynare internal presentation (CEPREMAP): *Solving and estimating a heterogeneous agent model with aggregate shocks*
· GAINS seminar (Le Mans Univeristé): *Impact of a global stablecoin on the International Monetary System*