



PhD Course: Subjective Beliefs in Macroeconomics and Household Finance

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Background: Expectations about the future play a central role in any model of decision-making under uncertainty, and are of particular importance in modern macroeconomics and finance. Expectations about future inflation should influence price-setting of firms and consumption decisions of households. People's expectations about stock returns should affect their stock market participation and trading behavior. Expectations about aggregate unemployment should influence consumption decisions and job search behavior.

Macroeconomists have traditionally assumed that economic agents are perfectly informed about the state of the economy at all times, and hold rational expectations, i.e. they form their expectations in line with the true underlying model of the economy. Recently, researchers have documented large deviations from both of these assumptions. For instance, individuals put disproportionate weight on their personal experiences and rely on heuristics when forming their macroeconomic expectations. Incorporating information frictions or non-standard belief formation mechanisms into standard models dramatically changes policy predictions and parsimoniously explains many stylized facts in macroeconomics and finance.

Course topic: We offer a five-day course on the empirical study of expectation formation in macroeconomics and finance.

A large part of our course introduces students to the new emerging literature studying expectation formation of firms and consumers using experimental methods. However, we will also discuss the use of observational data, such as data from existing household surveys, and the use of high frequency data as well as textual analysis to better understand expectation formation.

Topics include the formation of expectations about inflation, GDP growth, house prices and stock returns. Moreover, we discuss the role of expectations in shaping economic and financial behavior of households and firms. Part of the course will focus on central bank communication and its role in expectation formation.

We also cover materials on the behavioral foundations of expectation formation including:

- The role of experiences
- Rational inattention
- The representativeness heuristic and diagnostic expectations
- Subjective models of the economy
- Heuristic based decision-making

We have a sequence covering the experimental design of information provision experiments:

- Measuring probabilistic expectations
- Measuring uncertainty
- Designing information treatments
- Mitigating anchoring and demand effects

For each of these topics, the course will familiarize students with insights from recent research. A second main goal of the course is to equip students with the necessary methodological tools and skills to conduct own research projects in the field. To this end, the course includes teaching sections on the design of empirical studies of expectation formation covering both experimental and non-experimental methods.

Course procedures: The course consists of a 3-days teaching block and attendance of a 2-days research workshop with internal and external speakers.

Prerequisites: The students should have knowledge of econometrics and applied methods. Basic knowledge of behavioral economics, macroeconomics and finance is an asset, but not a must. The participants will be asked to read a short reading list in advance of the workshop, which will be sent out upon admission.

Instructors:

- Yueran Ma is Assistant Professor of Finance at the Chicago Booth School of Business
- Michael McMahon is Professor of Economics at the University of Oxford
- Chris Roth is Assistant Professor of Economics at the University of Warwick
- Johannes Wohlfart is Assistant Professor of Economics at the University of Copenhagen and CEBI
- Florian Zimmermann is Professor of Economics at the University of Bonn and brig

Admission procedure: Students who would like to participate in the course should send a short letter of motivation (max 1 page) describing (i) their research interests and (ii) why they are interested in participating in the course. Letters and a CV should be sent to johannes.wohlfart@econ.ku.dk by no later than **12th April 2020**. Applicants will be notified about the outcome of their application by **19th April 2020**.

ECTS points: Upon completing all course activities (attendance of the entire course and research workshop and submission of written project proposal), participants will be awarded 5 ECTS credits and a course certificate.

Course fees: The course is free of charge for PhD students in Social Sciences whose institution participates in the Danish Graduate Programme in Economics (DGPE) and for PhD students from Economics Departments at Nordic universities outside Denmark. There is a participation fee of 150 Euro for other participants. Participants of the course are invited to participate in the conference dinner on Thursday evening free of charge. We cannot cover costs for travel or accommodation.

Overview of the course schedule:

Monday

9.00-9.15	Welcome (Chris Roth and Johannes Wohlfart)
9.15-10.45	Johannes Wohlfart: Lecture 1
11.15-12.45	Johannes Wohlfart: Lecture 2
12.45-13.30	Lunch
13.30-15.00	Chris Roth: Lecture 1
15.30-17.00	Chris Roth: Lecture 2

Tuesday

9.00-10.30	Florian Zimmermann: Lecture 1
11.00-12.30	Florian Zimmermann: Lecture 2
12.30-13.30	Lunch
13.30-15.30	Group work (Chris Roth and Johannes Wohlfart)
16-17.30	Student presentations (Chris Roth and Johannes Wohlfart)

Wednesday

9.00-10.30	Michael McMahon: Lecture 1
11.00-12.30	Michael McMahon: Lecture 2
12.30-13.30	Lunch
13.30-15.00	Yueran Ma: Lecture 1
15.30-17.00	Yueran Ma: Lecture 2

Thursday + Friday

Attendance of CEBI Workshop on Subjective Beliefs in Macroeconomics and Household Finance

End: Friday 15.00