

Research Assistantship: ERC Project Market Design and Participation (MADPART)

Starting date: flexible as early as October. Duration: can be discussed (part time, full time...etc) but has to be for the full academic year

Supervisor: Julien COMBE (CREST & Ecole polytechnique)

Website: <https://sites.google.com/site/combeju/home>

ERC Project Description: Market Design combines theoretical and empirical methods to design, analyze, and enhance real-world assignment markets. Many of these markets involve limited or no monetary transfers: civil servants (e.g., teachers), daycare placement for children, organ allocation for patients and so on. These markets often interact with external opportunities or themselves over time. For example, a patient in need of a kidney may have multiple treatment options, families must choose from various childcare alternatives, or public school teachers may request multiple transfers throughout their careers. However, we have a limited knowledge about how these multiple opportunities interact with the assignment procedure. Incorporating such options into the design of these markets is challenging due to data limitations as well as the complexity of the models.

The MADPART project aims to address these challenges by understanding and improving the design of assignment markets in the presence of outside options. It has two primary objectives: 1) Investigating how outside options discourage market participation and undermine policy objectives, specifically exploring how participation-blind procedures contribute to these losses. 2) Identifying novel and innovative designs that enhance the functioning of these markets. This will be achieved through the combination of advanced theoretical models and cutting-edge empirical methods. The project will leverage unique and novel datasets from four assignment markets: the allocation of public school teachers to schools, children to public daycares, kidneys to patients, and social housing allocation. These markets exhibit dynamic interactions with external options. The outcomes of the project will give a more comprehensive and deeper understanding of assignment markets and potentially lead to significant policy innovations.

In terms of methods, the project will rely on: theoretical models, simulations, structural estimations, surveys and some reduced form methods.

RA Task Description: you will assist professor Combe in the development of the projects, especially the estimation of preferences of public school teachers using structural methods. This will involve (but not limited to):

- Going to the French Education Ministry statistical department (DEPP, in Paris) to get access to administrative data on teachers
- Coding simulations for structural econometric modelling
- Exploring new dataset and doing preliminary econometric analysis
- Assisting in the brainstorming and solving of new theoretical models

Profile: The project involves using different methods: from analyzing data to solving theoretical models. One does not need to be expert in all these methods, but a motivation to learn several of them is needed. A taste for applied theory and data is needed. Willingness to pursue a PHD in the future is a plus.

Knowledge of French is not needed but can be useful for some projects since the applications and data are based in France.

Skills: R/Stata, Matlab or python.

How to apply: Please send an email to julien.combe@polytechnique.edu including: updated CV, transcripts of grades and a short motivation.