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Teaching Statement

Teaching and advising are an important and exciting part of my work at Boston University. Since I joined the university, I have taught at the undergraduate, master's, and PhD levels, advised students, and I have been on both undergraduate and PhD defense committees.

Teaching. I have taught econometrics and empirical Economic methods at the undergraduate (EC 304 - Empirical Economic Analysis 2), Master's (EC 508 - Econometrics), and PhD levels (EC 708 - Advanced Econometrics I, EC 709 - Advanced Econometrics II, and EC 711 - Advanced Topics in Econometrics). I believe teaching econometrics is uniquely different from teaching in other areas of economics. As in other fields, we teach fundamental knowledge. At the same time, we also train students to master and apply ubiquitous techniques that they will use in their future jobs, be it working in academia, government, or industry. Whether they pursue a career in economics, or simply use data-analytics skills, many of them will perform empirical analyses in our data-oriented society. Over the years, many students have told me that looking back, although the class was challenging, the econometrics they learned will be one of the most useful skills for their future careers. I try to keep my teaching material relevant to that particular goal.

With this in mind, I shape my teaching around the idea that the students should understand the types of empirical problems they can tackle using econometrics, which methods are appropriate depending on the sample and setting, and finally how to implement or perform the econometric analysis. My lectures are structured in the same way for all levels of teaching. First, we consider several empirical settings that arise naturally in economics: simple predictive regression, simultaneity due to price/quantity equilibrium, sample selection, etc. This motivates the need for the estimator or method that we will introduce, and the assumptions that we need to ensure it answers the empirical questions that motivated its introduction. Finally, we implement the estimator using R. In class, I will go through data and R codes that perform the estimation. Then at home, they will work on problem sets where they implement this knowledge themselves. When I write a homework for my students, I design it in a way that they feel as if they are performing a small research project. The exams are non-technical; the goal is mainly to test if the students understand when a particular estimator or interpretation is appropriate, or not. When possible, I adapt recently published empirical results into exam questions to test the students' knowledge using contemporaneous economic questions.

In class, I use a combination of slides, R codes, and data that I share with students. I also find that lectures are more interactive when I use the board to explain things in greater detail. Rather than reading slides, during lectures I will typically spend most of the time with chalk and board. This is common in France where I did my studies pre-PhD, and I find that taking the time to write things down brings the lecture to a better pace for students to ask questions which I can immediately answer on the board. This benefits all students compared to individual questions asked at the end of lectures, or during office hours. I also like how it shapes lectures based on the students' immediate feedback and reactions. Of course, I also have produced written notes that I share with students along with the slides.

Mentoring and Advising. Since I joined Boston University, I have been a co-advisor and letter writer for eight PhD students who wrote their thesis in econometrics. I've helped them with a range of tasks, from pinning down research topics, to implementing particular methods, or teaching them proof techniques that were not covered in the econometrics PhD sequence that they need to use in their papers. I have also written letters of reference for over 20 undergraduate and Master students applying to graduate school. Some of them joined our own PhD program in Economics, and I've had the pleasure to see them again when I was teaching EC 709 and EC 711.

I was also on the defense committee for several non-econometrics PhD candidates; I helped several with the econometrics in their papers. Recently, I helped Xuchao Gao, a labor economist current doing a Postdoc at the Southern Methodist University, estimate a matching model of marriage in China using methods and codes that I had developed in my own research "Noisy, Non-Smooth, Non-Convex Estimation of Moment Condition Models." I found that experience to be mutually beneficial, as she was able to better estimate her model and I got some first-hand user feedback on the performance of my method. Also, her questions helped me improve the user-guide I had written.

As a PhD advisor, I also help students in econometrics with their research, whenever it is within my area of competence. For instance, several years ago I helped Shuowen Chen (currently at Capital One) with his job market paper on bias correction for non-linear panel data models using indirect inference. This was an interesting but technically challenging paper to write. Through (by)weekly meetings I was able to help him learn more about indirect inference, high-dimensional estimation, and empirical process theory; as he needed to have a solid grasp of all three to derive the properties of his estimation procedure.

I have also co-authored with one of my students, Liang Zhong, who is now an assistant professor at the University of Hong Kong (HKU). He was first hired as a Research Assistant, but I felt he should have ownership of work on the project. Even though the paper was on numerical optimization for econometric estimations, which is not the main topic of his dissertation, I think working together as a small team helped him develop skills for empirics, proving theoretical results, and writing a research paper. The paper is described in more detail in my research statement. It was a mutually beneficial experience that I look forward to reproducing with future generations of PhD students.