Economics Seminars

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Laboratorio LISS Edificio Baffi
Facoltà di Scienze Economiche Giuridiche e Politiche - Viale Sant'Ignazio 74

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Teacher Instruction, Classroom Composition, and Student Achievement

Abstract. This paper explores teachers' instructional decisions and their implications for the distribution of student achievement. Canonical models of student performance often assume that teacher effectiveness is independent of the classroom environment. In practice, however, teachers can endogenously adapt instruction based on the composition of the classroom. This can have implications for the design of education policies whose impact is likely mediated by teachers' behavior. I exploit unique data from US elementary schools with rich information on teacher instruction to develop and estimate an equilibrium model of endogenous teacher instructional choices, student effort, and student achievement. Teachers are heterogeneous in their teaching ability and choose instructional effort and the allocation of class time across topics. Students vary by initial ability and choose study effort. Student achievement depends on both teacher and student inputs. The model specification allows me to assess whether teachers value unequally the achievement of students with different levels of ability. I find that teachers place a higher value on the achievement of students at the bottom of the ability distribution. I then perform a counterfactual analysis where I reallocate students to classrooms based on prior test score performance (ability tracking) and teachers to classrooms based on teaching ability (assortative matching). Results show that tracking has heterogeneous effects on students with different levels of ability, and that the distribution of these impacts depends on how teachers endogenously adjust their instructional choices to the composition of the classroom. Moreover, the combination of tracking with assigning high-ability teachers to low-ability students would benefit students both at the top and at the bottom of the ability distribution. High-ability students would benefit from spillovers from high-ability peers, while low-ability students would gain from the higher quality and better tailored instruction provided by high-ability teachers.