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Primary Field(s): Market Design, Matching
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Microeconomics
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Comprehensive Examinations Completed:
2015 (Oral): Economic Theory, International Trade
2014 (Written): Microeconomics, Macroeconomics

Dissertation Title: *Essays on Matching and Allocation Problems*

Committee:
Professor Larry Samuelson (chair)
Professor Dirk Bergemann
Professor Johannes Hörner

Year in the Ph.D. program: 6th year

Expected Completion Date: May 2020

Degrees:
Ph.D., Economics, Yale University, 2020 (expected)
M.Phil., Economics, Yale University, 2016
M.A., Economics, Yale University, 2015
B.S. Mathematics and Economics, Bogazici University, 2013

Fellowships, Honors and Awards:
University Dissertation Fellowship, Yale University, 2017-2018

Carl Avid Anderson Prize Fellowship in Economics, Yale University, 2016
Cowles Foundation Fellowship, Yale University, 2013-2017
Yale University Doctoral Fellowship, 2013-2018

Teaching Experience:
Fall 2015, Teaching Assistant to Prof. Larry Samuelson, Intermediate Microeconomics, Yale College
Fall 2016, Teaching Assistant to Prof. Steven Berry, Introduction to Microeconomics, Yale College

Research and Work Experience:
Research Assistant to Prof. Johannes Hörner, Yale University, Jan-May 2017

Working Papers:
"Linking School Segregation and Outside Options" (November 2019), *Job Market Paper*

"Matching with Floor Constraints" (2019), Revise and Resubmit at *Theoretical Economics*

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References:

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Dissertation Abstract

Linking School Segregation and Outside Options [Job Market Paper]

Public schools in the United States are economically segregated—economic segregation is as large as 40-70% of racial segregation. This paper examines the foundations of this segregation.

I consider a continuum of students who must be assigned to a continuum of schools. The students have a common preference over schools, reflecting a common understanding of school quality, while schools have no priorities over students. Students have heterogeneous outside options, meaning that wealthier students have access to more attractive alternative schooling options (such as homeschooling or private schools). The main result of the paper is that ex ante efficient allocations exhibit positive sorting; that is, wealthier students are assigned to better schools.

Heterogenous outside options immediately give rise to some segregation, because wealthy students opt out of low-quality schools, leading to a higher concentration of poor students in lower-quality schools. The less obvious but more important effect is that there are now gains from trade, as poorer students are willing to trade away uncertain spots at higher-quality schools in order to obtain more certain spots at lower-quality schools, thereby avoiding the risk of having to take a rather undesirable outside option. Wealthier students, with more attractive outside options, are willing to take the other side of such trades. Obviously, there is no explicit market for trading school assignments. However, any ex ante efficient allocation of students to schools will effectively execute such trades, resulting in segregation in public schools. The paper makes this intuition precise, by characterizing the set of ex ante efficient outcomes and then examining questions of stability and incentive compatibility.

I argue that the results are consistent with empirical findings in the literature and contrast the outside-option based explanation for segregation with other explanations. The most common explanations assume that schools have priorities over students that are correlated with wealth, with the positive sorting characteristic of stable allocations then leading to economic segregation.

Matching with Floor Constraints [R&R at Theoretical Economics]

Many matching markets seek to ensure a minimum number of agents across institutions, e.g., in medical residency matching, public teacher assignment, and military cadet matching markets. I develop a theory of matching markets under floor constraints. I introduce a stability notion, which I call *floor respecting stability,* for markets in which (hard) floor constraints must be respected. Floor respecting stability requires that there is no coalition of agents and institutions that can propose an alternative matching that is feasible and is an improvement for its members. The key element of this definition is the specification that an agent outside the coalition can be fired by an institution (as in the standard stability notion) but cannot be reassigned to another institution without her consent. This condition prevents a coalition from forcefully reassigning an agent to a less-preferred institution, and it is necessary to guarantee the existence of a stable matching. I show that a floor respecting stable matching exists and provide a mechanism that is strategy-proof for agents and implements a floor respecting stable matching.