



College admissions with entrance exams: Centralized versus decentralized [☆]

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Abstract

We study a college admissions problem in which colleges accept students by ranking students' efforts in entrance exams. Students' ability levels affect the cost of their efforts. We solve and compare equilibria of "centralized college admissions" (CCA) where students apply to all colleges and "decentralized college admissions" (DCA) where students only apply to one college. We show that lower ability students prefer DCA whereas higher ability students prefer CCA. Many predictions of the theory are supported by a lab

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experiment designed to test the theory, yet we find a number of differences that render DCA less attractive than CCA compared to the equilibrium benchmark.

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1. Introduction

Throughout the world and every year, millions of prospective university students apply for admission to colleges or universities during their last year of high school. Admission mechanisms vary from country to country, yet in most countries there are government agencies or independent organizations that offer *standardized admission exams* to aid the *college admission* process. Students invest a lot of time and effort to prepare for these admission exams, and they differ in terms of their ability to do so.

In some countries, the application and admission process is centralized. For instance, in Turkey university assignment is solely determined by a national examination called YGS/LYS. After learning their scores, students can then apply to a number of colleges. Applications are almost costless as all students need only to submit their rank-order of colleges to the central authority.¹ On the other hand, Japan has a centralized “National Center test,” too, but all public universities including the most prestigious universities require the candidate to take another, institution-specific secondary exam which takes place on the same day. This effectively prevents the students from applying to more than one public university.² The admissions mechanism in Japan is decentralized, in the sense that colleges decide on their admissions independent of each other. Institution-specific exams that prevent students from applying to all colleges have also been used and debated in the United Kingdom, notably between the University of Cambridge and the University of Oxford. Currently, students cannot apply to both the University of Cambridge and the University of Oxford.³ Moreover, till 1994 the college admission exams in South Korea were only offered on two dates each year, and students were allowed to apply for only one college per exam date (see Avery et al., 2014, for more details). In the Soviet Union, everyone had to submit the original of the school certificate together with the application to a college, and colleges had institution-specific exams. Thus, college admissions were fully decentralized. Although most of the former Soviet republics and Russia have lately introduced centralized exams

¹ Greece, China, South Korea, and Taiwan have similar national exams that are the main criterion for the centralized mechanism of college admissions. In Hungary, the centralized admission mechanism is based on a score that combines grades from school with an entrance exam (Biro, 2012).

² There are actually two stages where the structure of each stage corresponds to our description and modeling of the decentralized mechanism in section 4. The difference between the stages is that the capacities in the first stage are much greater than those in the second stage. Moreover, the Japanese high school admissions authorities have adopted similar mechanisms in local districts. Although the mechanism adopted varies across prefectures and is changing year by year, its basic structure is that each student chooses one among a specified set of public schools and then takes an entrance exam at his or her chosen school. The exams are held on the same day.

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