

A large literature estimates various school admission and graduation effects by employing variation in student admission scores around schools' admission cutoffs, assuming (quasi-) random school assignment close to the cutoffs. In this dissertation I focus on this variation, both from the theoretical and practical standpoints.

In the first paper, I present evidence suggesting that the samples corresponding to typical applications of regression discontinuity design (RDD) fail to satisfy these assumptions. I distinguish ex-post randomization (as in admission lotteries applicable to those at the margin of admission) from ex-ante randomization, reflecting uncertainty about the market structure of applicants, which can be naturally quantified by resampling from the applicant population. Using data from the Croatian centralized college-admission system, I show that these ex-ante admission probabilities differ dramatically between treated and non-treated students within typical RDD bandwidths. Such unbalanced admission probability distributions suggest that bandwidths (and sample sizes) should be drastically reduced to avoid selection bias. I also show that a sizeable fraction of quasi-randomized assignments occur outside of the typical RDD bandwidths, suggesting that these are also inefficient. As an alternative, I propose a new estimator, the Propensity Score Discontinuity Design (PSDD), based on all observations with random assignments, which compares the outcomes of applicants matched on ex-ante admission probabilities, conditional on admission scores.

In the second paper, we note that, in centralized student-college matching markets, non-compliance with the matching assignment typically corresponds to enrolling in one's preferred program a year after the initial assignment, introducing significant non-compliance costs. We show that with costly non-compliance, the text it {exclusion restriction}, the key assumption of the LATE theorem, is violated, potentially leading to biased RDD estimates. We use data from a student-college matching market in Croatia to illustrate the empirical importance of this potential source of bias and propose a method inspired by cite (Lee2009), which recovers the treatment effect bounds under the assumption that the costs of non-compliance are not related to the treatment assignment.

In the third paper analyzes family ties behind the college choice. While it is widely believed that family and social networks can influence important life decisions, identifying their causal effects is notoriously difficult. This paper presents causal evidence from three countries indicating that the educational trajectories of older siblings can significantly influence the college and major choices of younger siblings. In this analysis, we exploit institutional features of the college admissions systems in Chile, Croatia and Sweden that generate quasi-random variation in the educational paths followed by older siblings. Using regression discontinuity design, we show that younger siblings are significantly more likely to apply and enroll in the same college and major to which their older siblings are randomly assigned. We find that these sibling effects are stronger when older siblings enroll and are successful in majors that are more selective, have lower dropout rates and in which graduates have higher average earnings. Finally, the results from Sweden to Chile indicate sibling influence is greatest when the older sibling is a male. We explore several potential mechanisms and compare results across countries that have very different social and economic contexts. Taking the evidence together we conclude the results are most consistent

with older siblings transmitting otherwise unavailable information about the college experience and its potential returns.