Universities compete for enrollment through price and non-price characteristics, including the number and type of undergraduate majors offered. Undergraduate majors are a key source of differentiation in U.S. higher education, and survey evidence suggests that students consider a university’s offered majors when they make their college choice. This research seeks an empirical answer to three questions. First, do the number and type of majors offered at a university affect applications and enrollment? Second, what are the preferences and costs that drive universities’ choices? Finally, what are the equilibrium effects of changes in financial aid and appropriations? To answer these questions, I use state-level data from ACT and College Board and information on university characteristics to estimate an equilibrium model of the U.S. higher education market.

The model features four stages: first, universities choose majors, admission criteria and price; second, high-school seniors observe universities’ choices and choose a set of colleges to apply to; third, universities offer admission to a subset of applicants; and finally, students make their enrollment decisions. Modeling the application, admission, and enrollment stages of the college choice process produces parameters that have a meaningful interpretation in an expectation-maximization framework. The model of university behavior features a trade-off between selectivity and revenue net of costs, with heterogeneous preferences for selectivity.

I use the simulated method of moments to estimate the model. Instrumental variables are utilized in estimation for both the demand- and supply-sides. On the demand side, the model implies correlation between the endogenous characteristics—price and majors—and unobserved quality. On the supply-side, the model implies correlation between universities’ heterogeneous costs and the endogenous characteristics. Instruments include the exogenous demand- and supply-shifters, graduate programs offered by universities, and features of the regional market structure. The demand estimates show that students are willing to pay over $100 per year for each major offered, with heterogeneity by type. Supply-side estimates show that universities place substantial weight on selectivity, and that the cost of supplying different majors varies by type. In a counterfactual simulation, I discuss the equilibrium effects of changes in financial aid and appropriations.

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