14.48, Economics of Education
Prof. Frank Levy
Lecture 23

Questions and Answers from last class:

Q: If schools like Harvard, Yale and Princeton fiercely compete for students and are very selective, why would they risk their reputations by admitting lesser-qualified athletes?
A: We'll address this later in the lecture

Q: If it actually costs universities $65k to provide a year's education per student but they only charge $20k, why do schools raise tuition when they will just have to raise financial aid payments anyways?
A: We'll also discuss this later.

Q: In theory, a low admissions rate reflects a college filled with highly qualified students. However, the pool of applicants is also self-selected. The admission process is almost self-fulfilling—highly qualified students pick highly ranked schools because they are highly ranked and colleges are highly ranked because highly qualified students chose to go there. So, why do college participate in the rankings?
A: Most schools can't afford NOT to be in the rankings. For some lower ranked schools, its also acts as free advertising.

Q: Lowering tuition increases social welfare so why aren't there more low cost colleges?
A: In the college market, price/tuition embodies quality so a low cost college is seen as a low quality college.
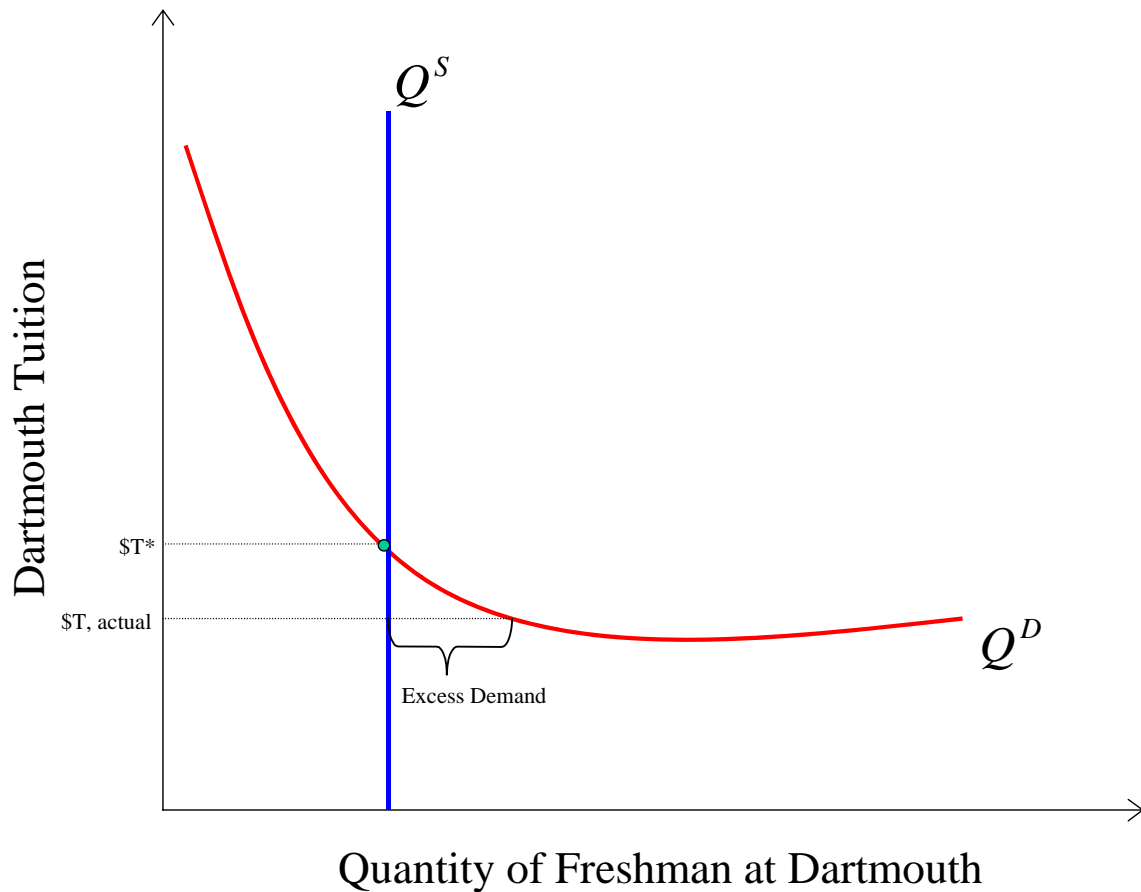

US News and World Report:
Ranking factors for colleges—
    1) Matriculation/yield rate
    2) Student-faculty ratio
    3) Endowment/student
    4) Fraction of freshmen in top 10% of HS class
    5) Acceptance rate
    6) Average freshmen retention rate
    7) SAT scores

Students are customers and products of universities. However, universities still have to make pricing decisions, and they want to attract as highly qualified a student body as possible.

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In the sort run, the supply of student slots at a given university, say Dartmouth, is inelastic. Demand in downward sloping. Is tuition set at the market clearing equilibrium? Assuming that (Tuition + Research Royalties=Costs) at universities, then yes. This is also how you'd maximize the parental income of your student body.

Quantity of Freshman at Dartmouth

However, if a college wants to maximize student quality, it will lower tuition below T*, resulting in excess demand for the college and allowing the college to select who attends the college.
In this scenario:
(Lower Tuition + Research Royalties < Costs)

How do schools cover all of their costs? Fundraising and endowment income from corporations, alumni and other donors. Evidence shows that highly selective schools clearly subsidize their education.

1995 data, schools ranked by SAT scores:

	Enrollment Avg	Education Cost	Subsidies	Net Price	Avg SAT
Top Decile:	3300	28500	22800	5700	1090
9th Decile:	2700	8700	4100	4600	940

How does this work?

1) Good reputation for a school results in….
2) Good students at a school, which results in….
3) Good/rich alumni, which results in….
4) More donations and a bigger endowment, which results in….
5) Subsidies which permit higher education costs, which result in a good reputation for the school

What lesson is there for thinking about voucher schools is schools sort according to the model outlined in the Avery paper? What are we trying to do with a voucher system?
A voucher system aims to create more equal educational opportunities for all students. However, in the above pattern, there is intense sorting of students into schools based on their wealth and ability. We can reasonably expect the same kind of sorting within a voucher program, which is why voucher programs should require that a significant portion of their student are selected by a randomized lottery.

What is wrong with early streamlining of students into high and low ability classes? It is very difficult to know when to start streamlining. You don't want to put students into a low achieving track too early if they have the potential to become high achieving students as they mature.

Alumni are key players in higher education funding.
Why do they keep giving? Tradition, tax deductions, helps get their kids in when they apply (but perhaps this doesn't happen often at MIT).

So why do colleges let in lower academically achieving athletes?
-Good sports teams attractive for prospective students
-Publicity for the school
-Alums more likely to give if alma mater has good football and other high profile teams
-Direct source of revenue. Yes, but only for a handful of sports at a handful of schools

What should we look at in trying to understand how a university functions?

Early Decision:
A HS senior can apply to a school in November and get a decision in December. However, the student has to attend the school he or she applied to and can't apply to any other schools. Early decision gives schools more control over the composition of its incoming freshman class and increases their matriculation rates. However, for students who need financial aid to attend elite schools, it is risky because they aren't

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able to apply to many schools and then compare the schools' financial aid packages—so it increases a school's power to price discriminate.

1990s: 7 or 8 prominent schools allowed students to apply without ACT or SAT scores because the schools felt they weren't good assessments of a student's ability to perform in college. However, only people with good SAT scores would have an incentive to report them and only those who had bad SAT scores would have an incentive not to report them. Therefore, the schools will only receive good SAT scores, thus increasing their average reported SAT score for accepted students and boosting their US News ranking. It also encouraged more students who aren't qualified to apply to these schools since they thought they might have a chance if the schools didn't see their SAT scores—this also increased the schools' selectivity as the application pool increased and the number of incoming freshman slots stayed relatively stable.

Remedial Education in US Colleges:
K-12 schools as organizations: It is not clear how schools were doing before testing results were made public.

If a HS student isn't prepared for college, he or she can still get it. However, this does not mean that he or she will go to a good college or can do college level work. In other words, getting into college is not a signal of good HS quality.

Many students come to college not ready to do college level work.
In 2001, 1/3 of entering freshmen had to take 1 or more remedial classes.
1996 cost estimate of remedial course work at US colleges: $1 billion—the total is certainly more than that today.

There are not a lot of studies analyzing whether or not remedial coursework is good for students.

Ideally, we'd take a group of students—all of whom need remedial coursework—and randomly assign only half of them to remedial classes and the other half to non-remedial classes. Obviously, no school would be willing to do this so we have to settle for an imperfect set of data.

Outcome variable: Does the person get a BA within 4 years? 1=yes, 0=no

$$BA_i = \alpha_0 + [Family\_Characteristics]_i + \delta(remedial\_dummy)_i + \varepsilon_i$$

Remedial dummy=1 if in remedial class as a freshman, 0 otherwise

Problem:
If you run the regression for the whole freshman class, the effect of remedial classes might seem negative because lower achieving students generally attend the remedial classes. To control for this, we add SAT scores as a proxy for ability.

$$BA_i = \alpha_0 + \left[Family\_Characteristics\right]_i + \delta(remedial\_dummy)_i + +\varphi(SAT)_i + \varepsilon_i$$

If there is significant collinearity between remedial_dummy and SAT, then we won't get meaningful results.

We are looking for different schools with different criteria for who qualifies for remedial classes. Then, we can look at students with the same abilities across schools, some in remedial classes and some not—based upon they school they attended. We also have to test this against the overall standards at the individual's school.
**This is similar to the GED signaling paper we looked at earlier in the semester

Problem:
If people choose their schools based on whether or not they have to attend remedial classes, we may run into selection bias issues.