Questions and Answers from last class:

Q: A huge cost for state governments in state colleges and universities. How important are they? Do the benefits outweigh the costs of the subsidy?
A: State colleges are often touted as a key part of a state's economic development strategy. Look at California, in the 2nd ½ of the 20th century and what they have achieved. Also, look at the DC metro area—for many people, the quality of the state university is important so they move to Virginia because UVA is much better that University of Maryland. The strength of a state's public university generally depends on how old the state is and the strength of the private colleges in the area. New Jersey had Princeton before Rutgers, which is just an OK school. Massachusetts has Harvard, MIT, and many other schools and UMass-Amherst is pretty low quality.

Q: How should we decide when to use an OLS regression and when to use an Instrumental Variable?
A: We'll discuss this later today.

Q: Say we have 2 students of equal ability, but one is motivated and one is unmotivated. The motivated student chooses a college where he will have to take remedial classes. The unmotivated student chooses a college where he won't have to take remedial classes. If we try to test the benefits of remedial courses, won't our results suffer from selection bias?
A: Yes. We'll discuss this further later today.

The current fraction of college graduates in the workforce: 30%
The projected fraction of college graduates in the workforce in 2020: 32%

Should college education be geared towards jobs unlikely to be moved overseas? This is something we might want to think about.

Our goal: To make more people graduate from college.
The steps to a college degree—
1) Preparing
2) Getting admitted
3) Attendance, retention
4) Graduating

Why isn't the 2020 project higher than 32%? What's going on?
More people are starting college than ever before but many of these students are not staying to graduate.

	1968	2000
Percentage of 23 year olds with college experience:	36%	55%
Percentage of 23 year olds with a BA:	14%	19%

Some students get an associates degree, but we still have a real problem getting people to stay in college and finish.

14.48, The Economics of Education
Prof. Frank Levy

Lecture 24
Page 1 of 4

Dynarski:
In 2000, 57% of persons aged 22-34 with some college experience had a BA or AA.
(.57*.55)=30% of those aged 23 in 2000 had some sort of degree
Something like 9% of students don't even make it through their first year of college.

Reasons for dropping out of college: Policy Solutions
-Financial hardship   -Financial aid
-Bad fit   -This might be OK
-Cheating   -Let them go
-poor HS preparation   -Remedial courses

OLS:
$$(CompleteCollegeDummy)_i = \alpha_0 + \beta(Personal\_Characteristics)_i + \gamma(remedial\_dummy)_i + \varepsilon$$
Complete College Dummy=1 if a student completes college in 4 years, 0 otherwise
Remedial dummy=1 if a student enrolls in remedial courses, 0 otherwise

Remedial students often do worse in college in general because they are not
prepared. The above regression, if run for all undergraduates, will make it seem like
remedial courses are bad for academic performance. Problem: omitted variable bias

We want to control for pre-college ability so we will use SAT or ACT scores. If all
colleges have the same cutoff for remedial courses, then we can't compare a set of
students with the same ability, some in remedial courses and some not. If different
colleges have different cutoffs for remedial courses, how do you know motivated
students don't' choose where they'll be so that they can attend remedial courses and
the unmotivated students don't' choose wehre they'll be so that they don't have to
attend remedial courses? Well, you don't so wwe may have selection bias issues that
we result in an upward bias in our remedial coefficient.

IV:
Instrument is the probability that a student enrolled in remedial classes, similar to
the intent to treat in school voucher analyses.

P_{ic} =the probability that a student i attends college c
P_{icr} =the probability that a student i is in remedial courses, conditional on his
attending college c

$$\sum_{c=1}^{20} P_{ic} * P_{icr}$$

How do you estimate P_{icr}?

Using a sample of all college freshmen at student c:

$$(remedial\_dummy)_i = \alpha_0 + \beta_1(Family\_Income)_i + \beta_2(SAT\_Score)_i + \beta_3(AcademicTrack,HS)_i + ... + \varepsilon_i$$

What about P_{ic}? How do determine the probability that a student attends a certain
college?
Well, within the sample, 75% of Ohio students went to school within 100 miles of
home. 60% went to school within 50 miles of home. Clearly, distance from home is
an important factor for many HS seniors when deciding where to go to college

Conditional Logit Model:
First developed to estimate transportation usage in the Bay Area.

1) Hedonic Representation
Essentially, you take a commodity, break it down into pieces. The idea behind it is that the value of a good is the sum of the value of its components.
This method is used frequently to analyzing housing markets.
What components would you break a house down into?

-Rooms	-square feet	-proximity to parks
-Lot size	-when the kitchen was remodeled	-local crime rates

Characteristics of a trip:

		Total Travel Time	Travel Cost	Parking Cost	# Transfers	Total Time in Transfer
Person 1	*Bus*	X,b11	X,b21	---	X,b41	X,b51
	Car	X,c11	X,c12	X,c13	---	---
	Rapid Transit	X,rt11	X,rt12	---	X,rt13	---

There must be some underlying utility function that results in a person deriving more utility from the from of transportation that a person chooses over the other two. To figure that out, we need to use the travel data on many people.

Linear Utility Function:

Utility of taking the bus: $\sum_{i=1}^{5} \beta_i X_{b1i}$

The dependent variable is whether or not an individual completed a BA or BS in 4 years.

Math remediation:
OLS regression: -.007(.0066)
This result implies that a student is 77% less likely to graduate if he is in a remedial math class.
IV: +.0998(.0337)
A student is 10% more likely to graduate from college if he is in a remedial class, once we've controlled for ability.

English Remediation:
IV: +.17

The overall effect of remedial classes, controlling for ability, is a 12% increase in the probability of finishing college in 4 years.

14.48, The Economics of Education
Prof. Frank Levy

Lecture 24
Page 3 of 4

How important is this result?

2000: 55% of those aged 23 have had a college experience while only 19% of that 55% actually has a BA.

What percentage of students in US college are in remedial classes? About 30%

$(.3*.55)=18\%$ of the 23 year old age cohort with a college experience is was enrolled in remedial courses

$(.12*.18)=2\%$

Therefore, remedial courses either have already increased the percentage of 23 years old with a BA by 2% to 19% or, if remedial course programs were weak in 2000, then they have the potential to increase that 19% to 21%. That reflects roughly a 10% change in the college degree rates of a cohort, which is a big deal.

Yes, it would be better if HS did a better job of preparing students for college. However, that is not the case so colleges have to compensate in many wats.

What about the costs of an undergraduate education and financial aid?

Loans? If loan rates are low and the return to an education is so high, why are low income people still weary of taking up loans to pay for college? They often have little experience or interaction with those who have gone to college and succeeded, so college itself may seem like a risky investment. Also, poorer people tend to have higher discount rates, making college a less attractive investment for them than for, say, a middle class student.

Financial Aid? What difference does it mane in starting and finishing college?
How do you even test the effect of financial aid on college attendance?

You could look at cross college data by looking at fellowship winners. However, there is ability bias in the pool of fellowship winners because they are often chosen based on their academic and extracurricular peformance.

We need some sort of situation or experiment where money is given without ability bias. Georgia: Gives out financial aid based upon minimum GPA and maximum family income standards.
But if everyone in the state is eligible for the aid, who is the control group??