[SQUEAKING]

[RUSTLING]

[CLICKING]

JON GRUBER: Education economics-- so let's remind ourselves. We showed last time that basically, it doesn't look like across countries what you spend on education really correlates with outcomes. We then ask the question, well, why should-- this is what the government spends? I'm sorry. We then ask, well, why should the government be involved in education?

Why not just have a private market where everyone just pays for it themselves and take loans if they need to? And we came up with a number of answers from the fact there's minimum standards of citizenship we want to meet, to improvements in productivity that spill over to others, to credit market failures. And I think an important one here, is this failure to maximize family utility.

Let's remember that it's kids who ultimately bear the consequences of their parents' decisions to educate them in important ways. Income mobility is a critical aspect of success in life. And income mobility depends critically on education. So only if we really think parents are really doing what's in society's best interest, not just their own best interest, do we really want to leave a total in the hands of families about whether kids go to school or not? We probably want some government involvement in thinking about that at least.

OK, so now, with that as background, now that we've answered the first question-- which is when should the government intervene? The answer is generally it should in cases like education. We come to the second question, which is how should the government intervene? And here we're going to start with what the government actually does, and then think about whether it makes sense.

So what does the government do? Well, the government, in practice, provides free public education of a certain amount. To understand how that works, let's think about a simple model where individuals, much like our model of grants at the end of the last chapter, but now it's an individual making a decision. They're deciding between how much to spend on education and how much to spend on everything else.

So this is the figure 11-2 in your handout. The government's deciding how much spend in education and how much to spend on everything else-- the individual, I'm sorry. And they face a budget constraint.

They can either spend an amount-- they have a budget. They can either spend it all in education, in which case they'll get B of amount of education, or all the other goods, in which case they'll get G2. And let's assume, despite the cross-country graph we saw a few minutes ago, that education spending is productive.

Let's assume that the more you spend in education, the better education your kid gets. We're just going to make that assumption. We'll come back later to evidence on that. Let's assume that here. So the x-axis is both spending and quality

So parents have to make some decision. And absent government intervention, they'll make some decisions with three illustrative parents here-- X, Y, and Z. They choose different tradeoffs absent government intervention. So the ex-ante, we end up with three different education levels-- E1, E2, and E3 for three different parents.

Now the government comes in and says, we're going to provide free public education up to an amount E sub F. So anybody can have E sub F for free. But we're going to make a key assumption here. If you go to public school, there's no supplementation.

There's no tutoring. There's no, like, extra Russian math school you can send your kids to. It's a world where basically, if you go to public school, that's all you get.

So your choice is either you go to public school or you go to private school. If you go to public school, you get E sub F for free, but no more. If you go to private school, you still get what you pay for.

So how does this change the budget constraint? Well, the new budget constraint, much like we saw with the grant example last time, is a flat segment that goes all the way to an amount E sub F, all the way up to point C, because you can get that much education for free without giving up any other private goods. At that point, you stop getting free public education. The budget constraint drops from C to D.

And you return to the original private budget constraint. Student budget constraint goes G2, C, D, B. That's the new budget constraint. Questions about that?

Now let's ask, how does that affect people's choices? Well, let's start with person X. Person X used to not want a lot of education and a lot of private goods. Now they can get more of both.

They can get a lot more education and more private goods by dropping out of their crappy private school and joining this public school. So person X, it's a no-brainer. They've made themselves unambiguously better off.

For person Z, nothing's changed. The public schooling level is so much lower than their desired level of education that they're not interested. Person Y is the interesting case. And what is particularly notable about person Y? What's notable about person Y is that their indifference curve that's tangent to the original private budget constraint passes through the vertical segment from C to D.

What does that mean? That means that graphically, they are better off at point C than they are at their current choice. So they will move from their current choice of E sub 2 to E sub F.

And how do we know that? You can just prove geometrically that since there's a difference across that vertical segment, at point C, they'll be in a higher indifference curve. In other words, person y is willing to get less education to get a lot more other consumption.

This is a case of more than 100% crowd out. This is a case where basically, the government providing it doesn't just reduce private provision to 0. It produces private provision by more than the government actually provided. That is total educational attainment for person y falls.

So on net, what happens to society? Well that depends on the proportions of people who are X, Y, and Z. If society's all like X, education unambiguously increases. If society is all like Z, education unambiguously doesn't change. But if it's like Y, education can actually fall.

This is a key point made by Sam Peltzman in 1973. It's a famous model-- another Chicago economist, showing that the government can make things worse, and that in principle, free public education can lower educational attainment. It's a pretty striking finding.

But it's pretty clear from this graph that a free public education can actually lower how much education people get. And whether it will happen or not depends on how big Y is compared to X, basically. X is getting a lot more, y is getting somewhat less. The size of those groups will determine whether total education goes up or not. So this is really a quite striking finding, that free public education could actually lead to less educational attainment.

Now, Peltzman said, look, there's an easy solution to this problem, which is what if instead of telling people they have to go to public school, we gave them a voucher? And that voucher was for the amount E sub F. And we said, look, there will be public schools that will provide E sub F.

But if you don't want to go to public schools, you can take your voucher E sub F and apply it to any private school as well. So we're going to give you a piece of paper. You can just turn that piece of paper back into the public school and be done with it. You turn that piece of paper into a private school, and then pay some extra on top of that and go to private school. So this is a coupon off of private school for the amount that we spend on public school.

What would that do to the budget constraint? Well, that moves the budget constraint to something like figure 11-3, where now there's still the same flat segment along the top. But now below that, the whole budget constraint shifted out. This is like the conditional block grant example from last lecture. The whole budget shrinks.

So basically what happens is, person X continues to go to C. They continue to get education. But now person Y also gets more education and person Z gets more education. So now you unambiguously increase educational attainment.

So relative to a simple, limited public education system, by giving a voucher, you can unambiguously increase educational attainment. And this is one of three arguments supporting what has become a very significant voucher movement in the US-- a movement in the US and around the world to allow students to essentially, instead of being forced to go to the public schools, to be given a choice where they can literally direct their dollars to the public school or to other alternatives. And there are three arguments people make for vouchers.

One is the crowd out argument, that it ends this crowd out of group y, and it actually increases attainment for group Z as well. The second argument that people make is a consumer sovereignty argument, that basically, look-- I spelled sovereignty, whatever. Basically, look, we think we should respect the consumer of lots of things.

Why do we think the government knows better than we do what the best school is? The government may just stick kids in some crappy school. Let's let people decide what's best for their kids.

And an advantage of allowing that is a third benefit, which is efficiency, which is basically efficiency from shopping. If people can shop, they'll choose the best schools. What are local public schools? They're government-sanctioned monopolies.

When you have a government-sanctioned monopoly, it's by definition going to be operating inefficiently. It's a nonprofit monopoly. A for-profit monopoly operates efficiently and sucks up all the profits. But a nonprofit monopoly has no incentive to operate efficiently because it can't keep the money.

So the last thing you want is a nonprofit monopoly. It's not the last thing you want, but it's costly to have a nonprofit monopoly because there's no incentive to operate efficiently. If operating efficiently is stressful, why bother? You get the kids no matter what.

So that's the clear arguments for a voucher system. And that is why there's a strong advocacy typically on the conservative side of the aisle. But this is a little more bipartisan than some other things we'll talk about.

It's typically conservative, but there's a little more bipartisan appeal to this for vouchers. So what are the arguments against vouchers? Why not vouchers? Enoch.

AUDIENCE: In the transition phase, it would harm [INAUDIBLE] things that [INAUDIBLE].

JON GRUBER: What about the kids left behind? Remember, what vouchers do is they say-- basically, you take your voucher go to another school. And the idea the efficiency-- I should have said this, by the way, a little clearer. The way the efficiency works is, when you go to the school, you bring your dollars with you.

So the good school get more dollars. The bad schools get less dollars. And ultimately, if it's a company, goes out of business. That's the idea of efficiency. Efficiency works through exit and entry.

The problem Enoch is pointing out is, if somebody's got an absent parent who's not paying attention and the school goes out of business, they're screwed. So basically, in some sense, the problem is you are essentially allowing people to make the best choice. But you're relying on family utility maximization that they will make the best choice.

And the ones who don't make that choice end up getting left behind in increasingly poorer and poorer schools. So that's one problem. What other what other problems are there?

Well, this is a related one to this, to this one. Let's come to this. What's the other problem with this argument? What's wrong with this argument? Yeah.

AUDIENCE: [INAUDIBLE]

JON GRUBER: It's hard to shop people. There's bad information. People don't do it well.

So there's basically an imperfect market for schools. Both market imperfections and market power are going to make it that you won't get efficiency from shopping. So you may do better from shopping. But the notion is, the first best is clearly wrong given imperfections in this market.

So the second thing is market imperfections. So that's what's wrong with that argument. What's wrong with this argument-- consumer sovereignty? How would you argue back against that? Steven.

AUDIENCE: [INAUDIBLE] consumers are able to switch schools, so if the nicer school is further away.

JON GRUBER: No, but that would be a market imperfection, or what gets left behind. But to relate to that, what else concerns you? Yeah.

AUDIENCE: How do we know that parents know what's best for their children?

JON GRUBER: Yeah, how do we know the parents are going to choose a school that delivers the socially optimal outcome to their kids? I mean, if you're in Texas and you want to compete for the best resources, you offer the best football team. You don't offer the best math classes, because basically the high schools with good football teams get all the rich parents.

They get a lot of money. Is that what we want, we're in a market where high schools are chosen based on their football team, not their educational attainment? So basically, the problem is that you could have excessive specialization, that basically, parents say, look, I care about my kid spending the entire class learning that evolution is fake and creationism is the truth. Do we want that?

This is not just a vague idea. There was actually a massive exposé of the worst schools in America by objective school tests. Certainly, the worst schools in the state of New York by school tests are a set of specialized Hasidic high schools-- Hasidic is a sect of Judaism, in New York City, which are set up as essentially religious schools masquerading as educational institutions.

The students in those schools are uniformly, on every single test, the very worst students in New York State. Students who have been those schools say they come out totally unprepared. They don't take math or reading or anything. They just learn religious studies, and they come out unprepared to live in modern society.

But these are private schools and they are sanctioned by the state. And basically, you have excessive specialization. Now, in principle-- yeah, Steven.

AUDIENCE: [INAUDIBLE] is there a way to open up [INAUDIBLE]?

JON GRUBER: Yeah, so in principle, you could try to address that by saying, OK, there's certain things you have to teach, certain standards you have to reach. But in practice, in the limit, it might just end up being easier to run the school. I mean, in some sense, given how difficult it is to maintain those standards and monitor them, you got at some point say you really want to just do that.

And that's, in some sense, the whole privatization debate we got into chapter 7, which is it better to let a private company do it and try to monitor the quality and the product, or you have the government do it itself? What else? What's another problem with vouchers? Yeah.

AUDIENCE: [INAUDIBLE] equity issue. So you're paying those who are already going [INAUDIBLE].

JON GRUBER: Awesome, great point. Think about the equity implications. Who is likely to be person Z? A rich person. Who's likely to person X? A poor person.

Now, in this case, it's not true because they all have the same budget. But in general, who sends their kids to private schools is richer people. And for those people, we are just paying them to do something they were already going to do.

We're inducing extra education, but not through changing their behavior just by giving them more money. We are going to spend a lot of the taxation section of this course talking about the concept of marginal versus inframarginal consumers. A marginal consumer is one whose behavior is changed by a change in government policy. An inframarginal consumer is one who benefits from the government policy without their behavior changing.

When you put in a policy that's designed to change behavior, i.e., to increase education, then all the money you give to rich people who are already send their kids to private schools inframarginal. It's just a waste from the government's perspective. It's only redistributional.

Marginal changes have efficiency consequences. If I induce someone to go to school who isn't going to school, that's a marginal change. That is an efficiency consequence. If I take someone who's already going to school and just give them money, that is an inframarginal change. It's redistributive, but it has no efficiency consequences.

Look, more people in group Z go to school, but they go to school because they're richer. We could have more people go to Z school by just redistributing money to rich people. We wouldn't have to have vouchers. So basically, if we think about marginal, inframarginal the marginal piece is about efficiency. The inframarginal piece is about redistribution.

So you have to ask yourself, well, who are redistributing to? Well, vouchers, we're redistributing towards rich people because they were the ones already sending their kids to private school. So it becomes an inefficient use of public dollars to offer a voucher, because yes, you might induce some poor people to get to go to private school. But you're also buying out rich people already sending their kids to private school.

Now, in practice, once again, you could deal with this. You could have income-related vouchers. And in practice, that is something you could approach.

But in some sense, then the question is, where's the income cutoff? And really, remember, on this x-axis, it is not income. It's desired educational spending. So you really like to target the voucher by who really needs to push to send their kid to private school versus who's already sending their kid to private school.

Well, that's correlated with income, but not perfectly. So cutting by income doesn't really solve the problem. You really want to cut by underlying educational spending desire. And that's immeasurable So another problem is the equity problem. Yeah.

AUDIENCE: Aside from, like, whether or not their children are currently enrolled in a private school, are there any [INAUDIBLE] preference metrics [INAUDIBLE] might approach that?

JON GRUBER: Not really. I mean, no, because actually, the truth is private school attendance-- while I parodied the private school attendance that we think about is Andover and Exeter. But 90% of kids in private school in America go to parochial schools, which are actually not that expensive, and actually attended not by the poorest, but typically often not by the richest either.

So in some sense it is hard to actually income is actually a reason is not a great proxy. It's correlated with private school demand and education, but it's not actually an outstanding proxy for it. And so basically, the problem is you deal with the equity, but you don't really get the vouchers who you want them to go to.

You want to induce the people who-- you want to get them to x. You want the people who you're going to most increase their educational attainment, but you don't know how to target them that way. Does that make sense? That's a very important concept we'll come back to over and over again when we talk about taxation.

One other problem that's very important here is, what about segregation? And segregation is interesting because it's on both sides of the line. Voucher opponents say, look, what's going to happen?

Well, all the motivated families got their shit together and pulled their kids. It's related to the first point. All the motivated families that had their shit together pulled their kids out of the public schools, put them in the private schools. The ones who are left behind are the less motivated, the people with less odds of succeeding anyway. And so you're further segregating society into those who are likely to succeed and those who are not.

Now, supporters of vouchers actually recognized that argument and said, well, that's actually bullshit because we already have incredibly segregated schools in America today. So the fact is that the typical white student attends a school that's 75% white, but 40% of minority students attend schools that are 90% to 100% minority. So basically, this is really the idea that, look, we're already segregated by race.

Maybe segregation by ability isn't so bad if it allows a poor Black kid who's stuck in a minority school-- but who's really able, his parents want him to succeed, to go to a private school with other white kids. Then yeah, you're separating more by ability, but you're separating less by race. So this is a tough one to evaluate.

That's the pros and cons of vouchers. This is how I want you to learn to think about problems. There's almost nothing we learn about in this class that has an easy answer.

This is not E equals mc squared. There's almost nothing-- not that it's so easy. But there's a formula.

So it's not [INAUDIBLE] just formula. There's always tradeoffs. And we want to think about how-- want to get you trained up and how to think about those tradeoffs OK. Yeah, Enoch.

AUDIENCE: Is there any evidence, outside of moral argument, segregation is a bad thing?

JON GRUBER: Actually, it's not clear-- well, two types of literature on segregation. So one type is you might specifically say, segregation in education, is that bad? The evidence there is mixed on that one, because sometimes putting students who are very high achieving together has positive externalities. And having a low-achieving kid with high-achieving kids can really have a big negative externality on them, so that evidence is mixed.

There's more general evidence of segregation in society, and that evidence is pretty uniform that's bad for the people who get left behind. There's not great evidence on how good it is for people who don't get left behind.

The trick with all this stuff is you really want to care about social welfare. It's pretty clear it's bad for the folks who get left behind. It's less clear if it's overall bad for society or not.

One sense in which it is overall bad for society is a lot of political economy research, which shows that more segregated societies are less likely to provide public goods that benefit everyone. Because if you don't know the other folk, if you're not with the other folk, you don't want to help them out. So we talked about social capital and altruism. That is, there's less social capital and more segregated societies. Other questions?

Now, when you're in a situation like this, what do you do? You call up the empirical economists. And you say, well, we don't know what's right or what's wrong. You tell us.

So that's what empirical economists come in. So we have a lot of evidence. There's been a huge literature built up on thinking about the effects of reform in education markets writ large.

Now, we don't have a ton of US evidence on vouchers. We have a little evidence. The evidence we have actually comes from a very clever, generalized approach that we use in empirical economics these days, which is what's called the waiting list design or randomized lottery design.

The way vouchers work when they're assigned is essentially, too many kids want the voucher relative to how many vouchers are available. They'll limit them. To limit the fiscal cost to the government, they'll limit them. Too many kids want it. So what they'll do is decide who gets them by lottery, to be fair.

Once you decide who gets it by lottery, you set up a randomized trial of the type we discussed in chapter 3. So you have a lottery. And Paul wins and Valerie loses, then you have two identical people, one of whom won and one of whom lost.

By random chance, you can compare them and see what happens to them five years later. Was it good for them or bad for them? So this randomized lottery design is essentially a way that society gives you a true randomized control trial without you having to set it up and run it yourself. And that method has been used in many ways to study voucher programs.

I think the evidence in the US is positive but modest. I think the evidence [INAUDIBLE] be interpreted as positive but modest. The more compelling evidence comes from other countries where voucher programs are much, much larger.

My colleague Josh Angrist did a very important paper on Colombia, which covered a large share of the population, and he found very large positive effects on the lottery winners versus the lottery losers. So there is some evidence from other countries where the lotteries are quite large where it's a more-- and the US voucher advocates would argue, well, you don't see big effects in the US because you can't get this effect when just a few people are getting vouchers. The only way to test vouchers is give them to a huge number of people, so you let the market react.

We have what we call in economics partial equilibrium and general equilibrium, another term we'll talk about in taxation. Partial equilibria is holding everything else constant, what happens general equilibrium is what happens not holding other things constant. And voucher advocates would argue, well, if you give 100 guys vouchers and look at what happens, that doesn't tell you whether it's good or bad for them because you don't get the market response. Yeah, question.

AUDIENCE: From the [? global ?] literature, is there any a correlation that you're aware of from [INAUDIBLE] size of the-- the magnitude of the voucher compared to an individual income?

JON GRUBER: Yeah, I mean, I think they're not at that level yet. This is still just voucher, no voucher. Now, this does, however, raise a very interesting question, which is, when you use this lottery study, you get the effect on the winners versus the losers. But you don't get the effect on society, just like I was saying about segregation. What you care about is whether society as a whole is better off.

So yeah, the winners may be better off. But are the losers worse off? Are the losers worse off in a way that offsets the gains to the winners?

There's starting to be some literature on this. In particular, there's a reasonably sizable voucher program in Florida, and the evidence suggests no. Overall, the whole cohort is better off [INAUDIBLE] school choice, maybe because of the competition, however it works. Maybe because of better sorting.

In other words, segregation is sorting. And that can be good or bad. Whatever the reason, the evidence seems to be that overall, the system improves. So with vouchers, the existing evidence seems to suggest there be improved educational outcomes, but at a cost of clearly lower equity and the other concerns that are raised.

The question is, are there other alternatives that might do better? And we've tried a number of alternatives. One alternative is, instead of having vouchers, have free choice, but only among public schools.

That is, try to get these benefits, but use it to send incentives across public schools, rather than subsidizing private entities. That's been done a lot, and there's two forms of that. One form is cities like Chicago or Cambridge, where they let you go to any elementary school you want in the city or any high school you want in the city.

So where my kids grew up in Lexington, you go to the local elementary school and the middle school, and the high school. It's all assigned to you. In these cities, you go to any one you want. And you apply and you go to the best one you want.

And once again, there's a waiting list, so we can study what happens. And the answer is not a lot. It doesn't seem like letting people shuffle around like that makes that much difference.

The other big change here that's made is the rise of charter and magnet schools, which are essentially public schools kind of outside the existing regulatory and union guidelines. So essentially, a charter school is typically private, often for-profit. But they are funded by the state, and they're still considered public schools, although in some sense they're halfway in between. So they're not private in the sense they're heavily regulated by the state and they meet certain state standards. They are private in the sense that they are not subject to some other rules that public schools are subbed to, in particular unionization of teachers and other standards.

And once again, people get into charter schools by lottery. There's a huge literature. And actually, the world leaders from that are my colleagues Josh Angrist and Parag Pathak. At Blueprint Labs here at MIT, they've done dozens of studies looking at the effect-- maybe not dozens-- but many studies looking at the effect of charter schools. And I would say the evidence is once again, on average, positive. The evidence seems to be that charter schools benefit the kids who go there.

And here's the exciting part. The benefits are the largest for the least advantaged kids. That's why it's more exciting than the voucher literature, because without giving extra money to people who are already going to private school, you're not giving away.

You're just taking people and shuffling them across schools. So no one's getting extra money here. But you're doing so in a way which actually improves equity because the charter schools are better for the more disadvantaged students.

Why is that? Well, the evidence once again is not determinant. But it seems to be, there's a set of things that correlate with success in school, most importantly things like stronger discipline, stronger standards, wearing uniforms, more norms, that basically things seem to correlate with success in school.

Basically, there's more zero tolerance strategies. Now, that raises separate issues of equity and fairness, et cetera. But that is what seems to be the reason that they do better. Yeah.

AUDIENCE: And those strategies aren't imposed in normal public schools.

JON GRUBER: No, they're not imposed in public schools because parents would bitch about it or whatever.

AUDIENCE: But it's not illegal.

JON GRUBER: It could be legal. The school could be worried about getting sued, cetera. It's a good question. I don't know why-- but some public schools are moving towards that. But really, the charter schools have been the lead on that. Yeah.

AUDIENCE: [INAUDIBLE] like teacher quality channel, is there anything [INAUDIBLE]?

JON GRUBER: That's a great point. The other thing that charter schools have done is moved towards more innovative ways of hiring and recognizing teacher quality. So once again, because they're free, they're more flexible.

There's no unionization. They're more flexible in terms of hire and fire. They'll do things like hiring people who are not trained as teachers, but have shown great aptitude for that set of skills and give them a shot as a teacher.

So there's more flexibility and more effort to try to find people who'll be better in teaching, rather than people who've just traditionally been in teaching. So that's a good point. It's another thing they're doing. So this has been successful.

Now, once again, here's a critical thing-- another big lesson for today. We always have to think about two views of evidence. There's data and anecdote.

There are also plenty of shitty charter schools. If you're John Oliver fans, he's the king of the anecdote. If you saw John Oliver piece on charter schools, you think they're the worst thing that ever happened. It's because there are some bad ones.

That's not the way we, as social welfare maximizers, should think about the problem. I think he's hilarious guy. But I've gotten kind of sick of him, because basically, he's not thinking about the way-- social impacts should be in aggregate, it's a good thing or not.

Now, there may be things you can do to bring up the bottom. The lessons of those anecdotes, maybe here's some regulations we need. But you can't take those anecdotes of some bad charter schools and say we shouldn't have charter schools. Basically what that says is, we need to change the regulations around them. But we deal in data.

And so for example, my colleagues have shown that the charter school program in Louisiana was not successful. Here's a particular charter school program that didn't work. It didn't work because it was badly run, et cetera.

So they're not always good, but the bulk of the evidence seems to be positive. So that's the second thing we've done. So we've done two things to try to fall short of vouchers, but go in that direction, which is, public school choice, doesn't seem to really matter. Allowing students these quasi-public alternatives does seem to be a good thing.

Finally, the last thing we've done is massively increased the way we use testing and incentives to reward and penalize schools. So remember, I said that the way schools are financed is probably, like, 47% state, 47% town, 5% federal. Well, the federal government, starting with George Bush and the No Child Left Behind Act, and then subsequent administrations as well, has started to put more of a thumb on the scale.

But the way they've done it is said, we're going to reward schools based on their performance. So it's been a massive increase in the amount of standardized testing. You guys went to public school, took a lot more standardized tests than I did. So the massive increased standardized testing. And that testing is being used to reward or penalize schools.

So it's not quite the "put them out of business" model of vouchers. But it is a little bit take money away from the schools that are doing badly and give money to schools that are doing well. It's like a smaller version of this efficiency point.

So basically that's caused a huge growth, and once again, evidence versus anecdote. The evidence is that overall, this has been quite positive for the US educational system. Basically, overall student outcomes have improved from this testing regime.

However, it's not been uniformly positive in two senses. First of all, if you talk to anyone from a high-quality school district, they'll say this is unnecessary. Well, sure, it's unnecessary. They're a high-quality school district, That's why it's the disadvantaged kids that benefit from charter schools.

This has really been a change that's mostly about bringing the bottom up. It's not really helping the top. They were already providing good schools. It's a pain in their ass. So ideal system, you'd figure who's a good school, not put them in the system, but you can't So that's one complaint.

The other problem is actually, there's a whole literature on funky ways people have tried to get around these tests. For example, I don't know how many of you guys-- I hate to say this because I'll hate the answer. How many of you guys have watched *The Simpsons* more than 10 times? Fuck.

[LAUGHTER]

People. This is the most important show in the history of television. This is where you should get your lessons today, your humor, is from *The Simpsons.*

[LAUGHTER]

And *The Simpsons* did a great episode, which actually mirrors reality, where it's tested at the school. And they take a certain set of kids like Bart and say, hey, this is a field trip. And [INAUDIBLE] they just want to take them out of the school, so they don't take the test to make the school look bad.

Turns out that actually happens. Schools would raise the rate at which they kick kids out for disciplinary problems on testing day. So the kids who were troublemakers, do badly in the test, wouldn't be there and wouldn't take the test.

One of my favorite papers on this-- schools would actually manipulate school menus to sugar up the kids right before tests. Literally, they looked at school menus. And literally, the days that certain grades had tests, their school lunches had more carbs and sugars in them.

Now, those are cool studies. I love them. They don't mean testing is a bad thing to do. They just mean that there's a trade-off to everything. So there's been these fun reactions.

But the bottom line is, where does this leave us? When I look at this whole thing, where does it lead me? Well, I guess the way I like to think about it is the following. Imagine that over on this extreme, we have no school choice. And over in this extreme, we have pure Chicago dream vouchers.

US education has been here. It's moving a bit to here. All the evidence suggests that's been positive, which suggests continued movement in this direction.

Should we go all the way here? That's a pretty extreme outcome. And I think we need more evidence to see that. But certainly the existing evidence says we should be moving towards more school choice along the way. That would be my read of the evidence. Yeah.

AUDIENCE: [INAUDIBLE] be properly read as dishonest or more like you're encouraging kids to get more sleep before a test or making sure they're eating well?

JON GRUBER: No. I mean, if kids should eat well, they should eat well. They shouldn't just do it before a test. So, no, I think that's pretty dishonest. Not dishonest, but profit-maximizing, which some people called dishonest. All right, so that's all I want to say about that.

Let me go to the second topic of the lecture, which is the field that we call "returns to education," which is a field of studying-- OK, we know we want government involved in education. But government involvement in education can mean lots of things. In particular, how much should the government spend on education? And that's going to depend on what is the rate of return to that investment.

Remember, government is always doing cost-benefit analysis. If the rate of return to education exceeds the rate at which the government has to spend to borrow the money, it should make the investment. If it doesn't, it shouldn't. So the rate of return to education is a critical parameter in thinking about optimal government involvement.

Now, the typical estimate-- this is a very rough. typical estimate is that another year of education raises your earnings by 7%. Every year of education, you get a raise of 7%. Now, that's not linear. And obviously, your MIT education is different than your other education.

But that's a number to have in mind. That would suggest a fairly high rate of return to education. A 7% boost in lifetime earnings is pretty large compared to the cost of hiring another teacher.

However, we have a problem. It's not clear how to interpret that result. There's two interpretations.

One interpretation, which is called the "human capital view," is that people are like machines. And just like as we spend more in a machine, we get more capital. If we spend more educating people, we get more human capital.

The more we spend in your education, the more the smarter you are, the more productive you are, the more you're producing valuable things for society. In other words, we are raising your marginal product of labor. So there's a 7% rise in not just your wage, but your marginal product of labor.

That's why your wage is going up. Your marginal product of labor is actually your value, marginal product of labor. It's the value of what you produce. And that's why you get paid more. That would be the human capital view.

But the evidence that people are more educated are paid more is absolutely consistent with another story, which is the screening story. Let's say that the way all educational systems worked is they consisted of memorizing baseball statistics. And let us posit that memorizing baseball statistics is totally irrelevant to producing what you're all going to produce in your jobs. [? It's ?] [? not ?] [? easy, ?] but let's imagine it is.

And furthermore, let's say that how far you get in education is determined by how good you are at memorizing baseball statistics. You will find that the people who get the most education earn the most. Why? Because the smartest people are the best at memorizing baseball statistics. So they go on the most and they earn the most.

But you didn't actually learn anything in school. School just separated people who are good at memorizing statistics from those who aren't. So you didn't raise your marginal product of labor. It didn't make you any better at making computers. It just was a way of screening out who was smart and who wasn't.

The problem is that would also show that those with higher education would earn more. Why? Because what you're doing is actually, if we go back to chapter 3 terms, there's an omitted bias in our regressions. We regress education on years of earnings, on years of education.

There's an omitted variable, called ability. And ability is correlated with both what you earn and how many years of education you get. So we have a non-comparable. The treatment group that got more education is not comparable to the control group that got less education, as well as you can't just compare them and say education improved your human capital. Yeah.

AUDIENCE: Is screening [INAUDIBLE] if it's a more efficient way of helping people navigate their way through the labor market to jobs where they're actually, like, [INAUDIBLE]?

JON GRUBER: Screening, could be valuable. The point is, it's not clear that you'd want to spend 35% of the entire state and local government budget in the US helping people navigate which job is best for them. We could probably have a lot more efficient system. In other words, the other name for screening is called Harvard Business School.

[LAUGHTER]

You don't learn anything. But basically, people who go to Harvard Business School are the cream of the crop. They get in. They have a great way of finding the best people.

Now, it's not true it's not productive. It's productive mostly making connections. I'm being extreme, obviously.

But the point is that basically, these are two different views. How do you distinguish them? Well, you distinguish them using the tools of chapter 3 to develop experimental or quasi-experimental methods to look at what happens when you randomly give some more education.

And there's a massive literature replete with incredibly clever approaches. So one approach, my Nobel Prize-winning colleague Esther Duflo, in her thesis, she looked at what happened when the government of Indonesia randomly built a bunch more schools in one place than another. The two places were identical.

One got more schools, one didn't. She found that years later, the ones-- place that got more schools, that kids were earning a lot more. That's evidence it was a human capital improvement.

Another great study is by Adriana Ileras-Muney out at UCLA. In the early 1900s in the US, kids didn't have to go to school. And then they put in minimum school-leaving ages. But these ages varied by state.

So compare two 17-year-olds one who's in a state where you have to go to school till you're 17, and one a state where you can leave when you're 16? Well, the only difference between them is one was forced to stay in school one more year. Do they earn more later in life? The answer is yes. So there's a lot of evidence for the human capital story.

There is some evidence for the screening story. Basically, there was this great study in Sweden, where they found that teachers discretionarily were moving students from not passing to passing. And they could look at teachers who were using the discretion to move students and those who weren't.

Now, it was the same score. Let me back up. You had two students, same score on the test. One's with the teacher that's a soft heart. And she'd pass a lot more students.

The other teacher was a hard ass and wouldn't pass the students. Those students had the same human capital, but the ones who passed earned a lot more. So that suggests, well, there is some screening function here too.

So both are operating. But primarily, it's human capital. There is a real return to more education There is a real return to more education.

Now, let me stop there. Does the fact that there is a high rate of return to education mean the government should invest in it? Why not necessarily? Let's say that it's true that every year of education makes earnings 7% higher. Why should that necessarily justify the government getting involved? Yeah.

AUDIENCE: It could be-- it could be the externalities in that your marginal product could go up by more than 7% in [? taxes. ?]

JON GRUBER: Well, no, you made it too hard. Let's say there's no externality. Then the government shouldn't get involved.

I mean, basically, the government should say, look, I should just-- why should I bribe public schools? I should just give loans to everybody. If basically, all I'm doing is increasing your wages, what's the case for the government to invest money in this?

Now, there's a case for all the other reasons-- making sure you're a good citizen, that you don't commit crimes, things like that. But basically, if literally all education is doing-- so once again, let's imagine education through ninth grade is making you a good citizen, makes you don't do crime.

Let's imagine all this stuff in high school beyond it's just about increasing your wages. Then the government shouldn't be doing it. The government should make it easier for you to do it, address the credit market failures, address the parental failures. But the government, unless there's an externality, an effect on others, the government shouldn't be doing it.

So the question is, are there externalities for education? And the answer is there's been a huge literature which has shown, yes, education leads to less crime. Education leads to better health for you and your children. Education leads to more informed voting and higher voter participation.

There's a lot of studies which show that education matters. It raises wages. But also, education has productivity spillovers.

If you're around more educated people, you yourself earn more. So there's clearly massive positive externalities for education. So the return is positive, not just privately for the individuals, but publicly for society too.

Now, that says we should invest in education. But the question then is, do we invest in that by just letting people go to school more? Or should we actually care about the quality of those schools? How should we measure whether better schools actually lead to better student outcomes, as opposed to just getting educated?

We've just said getting educated leads to better outcomes. People go to school commit less crimes. People who go to school are healthier. People who go to school earn more.

But there's going to school and there's going to school. There's a rich private school and a crappy public school. We just said going to school.

What about the quality dimension? How much does that matter? And here, once again, there's been an enormous body of work looking at this, looking at things like teacher salaries and class size.

One of most interesting literature has been on class size, where basically, this is in some sense, a little bit of a weakness of my field. I think, if I can be honest. For years there was this view, well, we don't have good evidence that smaller class size matters, so we shouldn't care about it.

But if you ask those same people, do you want your kids in a big class or small class, they'd say a small class. We knew it mattered. We just hadn't come up with a convincing way to get at it.

It's not like we didn't think it mattered. We knew it mattered. We tried to come up with a convincing way to but we have. And there's been a number of fascinating studies.

One really cool study, once again by Josh Angrist-- in Israel, they follow the biblical rule called Maimonides law. And Maimonides law says there is a certain number of kids, which is the biggest a classroom should be. And when your cohort size exceeds that number by one, they split you into two classes.

It's a random cutoff that determines whether you're in a big class or small class. If your cutoff is one below that number, you're in a big class. If you're one above that number, you're in a small class because they split into two. And he finds that being in the smaller class improves your outcomes.

There's also real trials. There was something called the Tennessee STAR experiment, where they literally randomized kids across class sizes in Tennessee. And they found the kids who were in smaller classes did better, not only in the short run, but actually, in the long run. They followed those kids up and looked at their earnings later in life, and they earned more. So it's really powerful.

Here's a fascinating fact, though. California, in 1996, passed a law mandating a maximum class size, which would be justified based on this evidence. So they basically said the class size had to be reduced to no more than 20 a year for grades K to 3. It cost the state $1 billion to do this. And studies of it found that it did not improve student outcomes.

Now, this is very strange, but it's a perfect example of partial equilibrium versus general equilibrium economics. Holding all else constant, is smaller classes good for you. But now let's say you're the state of California. You're a city in California. You've just been told you have to overnight, or very rapidly, reduce your class sizes.

What do you do? You hire crappy teachers. You put the first and second grade together so you can split them more equally, which has actually been shown to be bad educationally to mixed grades.

You do a bunch of stuff to meet this mandate, which is reducing class size through other actions which are not productive for education. So this is a fascinating example of, when we think about government policy changes, we have to think about all the reactions to them. And while the evidence says smaller classes are better, simply mandating California to have smaller classes without putting the resources in to make it feasible led to actually not an improvement in outcomes. Yeah.

AUDIENCE: I have a question about the [INAUDIBLE]. Is the evidence about the class sizes or about the teacher-student ratios?

JON GRUBER: That's a great question. I think it's typically viewed as teacher-student ratio. Yeah. All right? So once again, where are we in education?

First of all government should be involved. How should the government be involved? Well, basically, there's a trade-off with how much choice to leave. My view is there probably should be more choice, but we understand the trade-off.

Then the question is, well, is investing education worth it? The answer is yes. Is investing in higher quality education worth it? The answer is yes.

And that's where we are, except for one topic, which is a little bit germane to all of you, which is higher education. And that's what I spend the last 25 minutes on, which is the system of higher education, particularly focusing on the US. The reason I'm focusing on the US in particular is that we are by far the best in the world. The US, every year, 1.2 million foreign students a year spend more than $39 billion to enroll in American colleges.

At the same time, 60,000 Americans study abroad, typically just to go party in Europe. So basically, the market has spoken. And we have by far the world's best higher education system.

And if you are a free market advocate, you say, well, here's an interesting fact. If you look at non-higher education, we are terrible. We're way down in world rankings.

90% of it is public. If you look at higher education-- if you look at higher education, 40% of it is private. Only 60% is public.

So here's an interesting pair of facts. The system where we're the best in the world is where we have 40% private. The system where we're one of the worst in the world's where we're less than 10% private. So that suggests that gee, maybe competition and private incentives, there's something to it.

Now, I wanted more to say about that. It's just an interesting observation. It's not obviously the reason we're best in the world at higher education. But it is an interesting observation that where we have more private sector involvement, we're doing better, at least relative to the rest of the world.

Now, what is the government's role in higher education? Now, once again, here, we have to go back to the first question. It's not as obvious the government should be involved.

I mean, all our citizenship stuff should have been taken care of. Our crime stuff should have been taken care, et cetera. So it's not entirely clear the government should be involved in higher education. Indeed, what is the main market failure with higher education?

The main market failure is credit market failures. It is the fact that in principle, in a perfect world, we'd say, look, we're going to educate you through 12th grade. You want to go on, that's great. Just take a loan and go on. Most of the returns will be private anyway, so why not let you just go on?

And the answer would be two. One is there are spillovers even from education. So there is evidence that even educating people in college has positive externalities. So that's one argument for why we'd still want the government involved in higher education. There are still positive externalities for higher education.

Two is credit market failures. Like I said last time, you can't offer yourself as collateral. We call that slavery.

You can't offer yourself as collateral. As a result, you can't necessarily get loans to better education, even if that would be a good productive investment. So credit market failures is another reason why we think the government should be involved.

So how is the government involved? Well, the government involvement is illustrated in figure 11-4. The major way the government's involved is public universities. Like I said, 60% of university students do attend public universities. And by far, the largest expenditure of the public sector on higher education is these public universities.

The second biggest is what we call Pell grants. Pell grants is a program that provides grants to attend school for lower-income families. So it's a grant of several thousand dollars you can use to offset the cost of college for low-income families. We spend $28 billion a year on that.

The third and the smallest is student loans. Student loans are interesting. We used to have a system where we had two sources of loans.

Direct student loans, which we're borrowing from the government-- which is what all of you do now if you have loans. It's the only program available. We also have something called the Guaranteed Student Loan program, the GSL program, where basically the government subsidized private banks to loan you money. Fascinating story, I'll divert for a second to talk about this, because once again, it comes to a privatization issue.

The way this program works is the government said to banks, you loan money to students at a certain interest rate. We will guarantee if the students default. It said to banks, essentially, we are giving you a risk-free part of your portfolio.

Now, the banks were like, great, we'll make tons of money on that. Basically, why do banks charge high interest? Because of the risk. Well, the government was saying you can charge your regular interest rate with no risk. The banks loved it.

Now, people realized that was a problem. And they passed a law which said by a date certain, the government had to reset the interest rate for student loans. That date certain was while I was in the Treasury Department, so I was the guy in charge of this. I was in charge of resetting the interest on student loans. This is 1998.

And we looked at the data and decided that banks were being massively overpaid, given the lack of risk. And they should receive about a percentage and a half less. I forget the exact numbers. It's about 1 and 1/2% less in interest for these student loans. We should cut it.

We announced this. I was there the day they announced it. Al Gore and I even had the same tie on. I was very excited about that.

There they announced it. We're going to cut student loan interest rates. All the students were very excited. The banks were super-pissed.

Oh it's terrible. We can't afford it. We'll go out of business. Well, it turns out the banks have very good lobbyists. And the lobbyists started really putting pressure on Congress to not approve this.

Well, meanwhile, the Clinton administration, the student groups were like, we love you. You can't back off this. So Congress and the Clinton administration were caught in a tough position. They put this out there. Student groups were excited about paying lower interest. But the banks were mad.

So here's the interesting, depressing chapter 9 lesson. Between an immovable force-- between an unstoppable force and immovable object, there's actually something in between them. It's called the deficit.

[LAUGHTER]

So what did the government do? They said, OK, we'll continue to pay the banks who are paying them. Students will pay less. And the government will pay the difference.

So let's be clear about what they decided. They decided the government would send checks to the banks to make profitable loans to students. That is one of the saddest episodes of my time in Washington.

Fortunately, under the Obama administration, they actually got rid of the Guaranteed Student Loan program. And now the government makes the loans directly under the Direct Loan program from the government. And these don't cost a ton. These don't cost a ton. We'll come back later to the major issues with them.

Now let's look at this chart and ask, how is the government spending related to the market failures we identified? We identified two market failures. One is that there may be positive spillovers.

Well, that would be about the size of the pie. It's not really about how we divide it up. That would be like the bigger the spillovers, the bigger the pie should be of government spending.

The second is credit market failures. Well, that would suggest that the big slice should be loans, not state spending. So in fact, just like we talked about Tiebout and talked about how the way federal and local spending lines up with the model, this doesn't line up with the model. The model would say we should be making big loans, not just spending tons of money to provide this education for free.

So what is the justification? Well, it's hard, to be honest. I mean, to some extent, some of the justification is that students who get loans may not choose the socially optimal career paths.

So some really cool studies-- because you also forget the state schools. Let's leave that alone. Just look at the grants versus loan size. We spend almost 10 times as much on grants and loans. Whereas the credit market failure, you want the reverse.

But there's actually some cool studies which have compared people who randomly had grants versus loans based on school policies and stuff. And they find that when you get a loan, you're much more likely to pursue a higher-earning career, as opposed to what we might call a lower reward or more socially valuable relative to dollars career. So for instance, at NYU Law School, they changed from grants to loans, or vice versa. And students stopped going into public interest law and start going to corporate law.

Now, I don't want to diss the corporate lawyers. There's social value there. I'm just saying that those things do affect choice. So that's one argument.

That still isn't really a terrific argument for why we spend so much on state and local colleges. And that is, I think, an open and interesting question. The return to college is still high.

So there's been nice randomized studies-- there's a really cool randomized study recently super cool study. What the guy did-- I saw it this summer. Basically what he did is said, there's all these colleges in Texas. And essentially, he could look at the data.

And they each have somewhat different rules about the score you need to get accepted-- your GPA cutoff. And you can actually see the GPA cutoff in the data. So he did what's called-- we'll cover this later. Valerie, did you do regression discontinuity in chapter 3?

AUDIENCE: Yeah.

JON GRUBER: OK. Basically, this is a technique we'll spend more time in the semester. But essentially, the idea is the following. Let's say you have some score distribution You have some score distribution, and there's some random cutoff put in here.

Well, these people are really different than these people. But these people aren't so different from those people. So if you know if there's a random cutoff, it's called a discontinuity. You can compare people right around that cutoff who are pretty likely identical. But one got in and one didn't.

So it's like the lottery. But it doesn't come from a randomized lottery. It comes from a cutoff and comparing people right around that.

Now, it's not as good as the lottery. You can say, well, people are different. They're not identical. We have methods to try to see how identical they are and there's lots of statistical tests you can do.

But in principle, if you get arbitrarily close to this cutoff, it is random. Literally, if you have a million people who score 3.49 and a million people who score 3.51, and the cutoff is 3.5, those are pretty much the same people and you can compare them. And what this guy did is, he found that this line moved for different schools around Texas. There's all these little tests he could do.

At every school, he do a little test. And what he found doing that was, there was a very high rate of return to public education in Texas. That just says the size of the circle may be, if anything, too small. It still doesn't say why it should be public schools and not more loans to private schools.

Now, the answer to that, to come to that, we turn to the last big topic I want to cover, which is student loans. And why don't we just all do student loans? And here, we have the big issue of student loan debt.

As you know, we have about-- I think it's currently several trillion dollars. I don't remember what the stock of student loan debt is now. It's $1.4 trillion as of a few years ago.

It's bigger than that now. It's a huge stock of debt that students are bearing. And a lot of students aren't paying it back.

24% of students are delinquent at least one student loan payment. 5% have defaulted altogether on student loan payments. And 22% of workers have student loan payments that amount to more than 12% of their income. That is, more than one in eight of every dollar is going to pay back their student loans. That's a huge loan burden.

So one argument for why we should rely less on loans and more on spending-- although again, it doesn't tell you the purple versus the green. It's just the purple and the green versus the orange. Essentially, these student loans, people can't afford to pay them back. And that has led to a big debate over allowing people to default on their student loans, forgiving student loans.

This is something that Elizabeth Warren really raised people's attention as a candidate. And the Biden administration has made a focus of their efforts to forgive student loans. They had a big plan to forgive student loans, which would have forgiven like a huge share of them.

The Supreme Court turned it down, and then they put in a smaller plan. But still, they released student loans of something like four million people. Four million people got their student loans paid for. They didn't have to pay back their student loans.

So the question is, what is the right strategy here? There's a lot of arguments against just allowing people to default on their student loans. And one is the moral hazard argument. If you're going to let some people to follow, other people won't pay because they'll think they'll get to default.

There's also an equity argument, which is, what about people who paid back their student loans and struggled and worked really hard to pay them back? And someone else just had the government pay them back. That seems a little bit inequitable. So there's some arguments against that.

The argument for it is, a lot of these loans are based on students who are essentially fraudulently educated. I'm not just talking about Trump University here. But I'm talking about a broad sector of for-profit colleges that have actually shown to be very bad actors in many cases.

For example, the ITT Technical Institute-- do you guys ever see ITT Technical Institute ads on TV? They ran an aggressive campaign ad in radio. They found these commercials were dishonest. The government study-- were dishonest and targeted low-income students.

Basically, ITT would reach out to you and say, we're going to educate you. Here, it's going to be free to you, take out this big student loan to pay for it. And then they would give you-- and then they wouldn't give you a really valuable education. And basically, more generally, if you look at all students heading to for-profit colleges, one third graduate within eight years. So you define graduating graduate with eight years. 2/3 don't even graduate within eight years of attending.

A really cool study looked at what happened when for-profit colleges closed and the kids moved to community colleges. The graduation rates went up from 34% to 60%. So schools on average are clearly doing a terrible job. And there's fun anecdotes like ITT. But there's actually the data, like I just said to you, which is on average for-profit schools are doing a bad job, and in particular, a misleading job.

Now, as always, it's not easy. On the other hand, there are studies which show that many disadvantaged students who did not have the ability to access traditional education succeeded in for-profit colleges. So there are students who succeeded there, and it provided a road to success for some students who didn't otherwise have access. But on average, they don't seem to be performing very well.

And so the argument was, these people went to really scummy, for-profit colleges who misled them and made them take big student loans. They now have this big student loan debt. We shouldn't make them pay it back.

Now, that is an argument. But it turns out nobody's talking about forgiving loan debt just for those students, forgiving loan debt for everyone. So it's hard to explain, that's the minority of students with debt.

So the question is, are there better things we can do? And the Obama administration tried to do some better things. For example, they increased the quality available to students, so you understood what you're getting into.

Also, a more aggressive strategy was to basically deny eligibility for student loans to schools that didn't show a good enough graduation rate. Basically, unless your schools showed a good enough graduation rate, you couldn't get student loans. This is an interesting example.

We talked here about a disadvantage of vouchers as excessive specialization, or bad performance in this case. This is a way you could try to regulate that. You say, look, we are going to regulate it to make sure that you're a decent school by only giving you only-- we're not going to shut you down. We're going to let the market work. But you can't get student loans unless you can show you're decent.

The Trump administration killed that regulation. And it never, as far as I know, never went into effect. So that's one approach.

Another approach that I like a lot is to do what the UK and Australia do, which is to replace our current loan program with what's called an income-contingent loan program. Basically, we'll loan you money and you pay it back as a fraction of your income. So if you end up not making much money, you don't owe much back. You get rich, you owe a lot back.

And just the way it works in the UK is basically, they exempt the first, like, 15,000 pounds of your earnings. And every pound above 15,000, you pay 9% back in student loan payments until you've paid back your loan or until 20 years, at which point it just stops. Basically, the government is still losing some money.

They're not making them pay back enough to make up if people default. But it's not nearly as much as just paying for college. And it's doing it in a more equitable way because people pay back a share of their earnings.

Now, the US has a program like this. And in fact, it's fairly popular. The problem is that basically, people are still defaulting on it, not paying back.

So one change the Biden administration made was to make the income-contingent loan program much more generous. Basically, it used to be you had to pay up to 10% of your income. Now it's 5% of your income or something like that. I don't know exactly what they did. But they made the income-contingent program much more generous to try to encourage use of it.

There's two problems with this program. Once again, you'll get used to me saying that. Harry Truman once said, I wish I had a one-handed economist so he couldn't say "on the other hand."

The problem with this is twofold. First of all, as we'll learn later in the semester, taxes have distortionary consequences. And if you're going to have to pay an extra 9% in everything you earn, you might decide not to work as hard. I have a paper on that.

We looked in the UK. There's no effect there. It's meaningless in terms of people don't really respond to that.

The second concern is, does this really work when it's not mandatory? After all, if you're going to college and you're anticipating your earnings, who's going to want to take the income-contingent loan? And who's going to not want to take it? Steven.

AUDIENCE: [INAUDIBLE]

JON GRUBER: Yeah, people are going to want to take it those of lower income. The ones who aren't going to take it are the ones who participate. They're going to go to get rich. This is a problem that we'll discuss next lecture called adverse selection, a common problem in insurance markets. Basically, the problem is that if only the people who know they're going to have low income take it, you'll lose a lot of money on the program.

So the other problem is it's hard to have a program like this be successful unless it's mandatory, as it is in the UK and in Australia. You cannot take a loan. We're not saying you could not take a loan. But if you want to take a loan, it has to be income-contingent.

So it wouldn't fully solve the adverse selection problem, because people who knew they were rich, who were already rich, could just not take loans. But they probably, by and large, already don't take loans. So it's OK. Yeah.

AUDIENCE: [INAUDIBLE] are people allowed to [INAUDIBLE] take private loans if they think they will [? have ?] a higher income?

JON GRUBER: No, you cannot take a loan to pay back your college, unless it's from this program. And also private loans, they wouldn't loan to you because there's no collateral. I mean, the private market can't exist, and probably wouldn't exist, otherwise. OK, other questions about that. Yeah, Enoch.

AUDIENCE: You mentioned use of colleges and basically giving you useless education. Is there anything about useless degrees or degree paths that--

JON GRUBER: It's a fantastic question. So in some Scandinavian countries, where they had a certain number of slots in higher education, they would actually change the number of slots to reflect where they felt people should be educated-- more STEM slots, fewer English slots. I mean, I'm preaching to the choir here.

But basically, that is a really deep and hard question, which is fundamentally, what is the nature of the education being delivered? So the Obama administration said, we'll target loans on graduation rates. You could go further. You could target loans on who's ending up in a successful career.

The problem is, you have to define "success." And in some sense, the problem with the income-contingent system is that it has the opposite incentive. If you really think there's a lot of education that's useless-- education leads to useless jobs, then you don't want to do that.

Once again, do you think wages reflect social marginal value product or private marginal value product? We think wages reflect social value marginal product, then we should basically reward education leads to the highest wages.

If we think wages reflect private value marginal product, but that there's externalities that are aside from wages, we shouldn't necessarily target it. So that's a really interesting and hard question. Other questions?

OK, there's a cool study which tried to decide, is going to MIT worth it? Is going to better schools worth it compared to going to worse schools? How would you test that?

I mean, obviously, you're different than kids who go to different schools. How would you test? How would you set that up? Let's say you wanted to test, is going to school A better than going to school? B? Yeah.

AUDIENCE: You take a look at a sample of people that have been accepted to [? MIT. ?]

JON GRUBER: There you go. There you have one of the most famous education studies, the Dale-Krueger study. What they did is exactly that. They found a bunch of people accepted to multiple schools and asked, if you went to the better school you were accepted to do, did you end up doing better?

And the answer was actually remarkably little. A lot of it is screening. The answer is, the students who are good did pretty well wherever they went.

And indeed, there's a really cool study done by [? Rothschild ?] at Harvard. They got data on parental income and subsequent children income and ranked schools by their income mobility. That is, how much did schools improve your rank in the income distribution?

And the answer is-- I don't remember what MIT did. But the answer is the best schools are schools like CCNY in New York-- the City College of New York, which takes a lot of disadvantaged kids, gives them a really good education, and promotes them up the income distribution. Of the major universities, Berkeley was the best.

And I don't remember who did badly, but I'm sure MIT didn't do that well. I don't know how well we did. We probably did better than a lot of the Ivies, because once again, we're training in high-wage professions.

So anyway, bottom line-- higher education, fascinating topic, lots of work to be done, very relevant to all of your lives right now. A-- The bottom line is the government should clearly be in it. There's positive externalities. How much is still unclear.

B-- it's really unclear why we spend our money the way we do, as opposed to more loans. But C, if we rely more on loans, we need to think about the structure of who gets those loans and how they're paid back. Any other questions on that? Yeah, Enoch,

AUDIENCE: Why don't we-- I know a couple years back, they did free college.

JON GRUBER: Free college is another idea. Once again, first of all, the main reason, it would be unbelievably expensive. And second of all comes to your earlier question, which is not obvious college is the right thing for everyone.

There's a big debate right now about whether people are wasting their money in college, getting needlessly in debt to something that isn't actually making them do any better than not going to college at all. So I think that's an interesting debate to be had. All right, let's stop there.