

EEP100 Lecture (Dec 3, 2009)

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Let's go ahead and start. All right congratulations, this is the last class of new material. We have a GSI failure today.

So, congratulations, it's the last class of new material.

On Tuesday, I'm going to come with nothing on the agenda. So it'll be for review. I'll talk a little bit. I'll ask a little bit. We'll have a little bit of a discussion about what's going on in the discussion sections this week.

By now, $\frac{3}{4}$ of you, including the people that are not here, have hopefully gone through that discussion section and learned a little bit about public goods games. Besides that, I've got nothing planned for Tuesday. There will not be prizes. I know I promised prizes. I have no idea...except...how to do prizes...

I will be revealing your prize to everybody in about 20 seconds, but we'll just talk about new material. If you have questions, that's the time to bring questions in terms of the entire class. I'm not interested in continuing dialogue on e-mail about...do we have know this, do we have to know that. So bring your questions to class on Tuesday.

I'll give you back your homework's at the end of the class today. Homework 3. Your grading of the briefings is due on Tuesday. Like I said before, remember, do your grading, put an extra copy on top of that, staple it all together, put their name on the upper right, and put your SID on the upper left.

So the econ students anonymous e-mailer (or mailers, whoever they are) sent me a very good prompt on an email. They said, "Hey, wait a second, so-and-so graded this class much more generously. In fact, the curve, or whatever you want to call it, that you're anticipating, is harder than Chem whatever. The hardest class on campus."

So apparently, I'm a little bit out of normal. And I don't want to do that. I actually don't care, in a sense. I just want to fit into a normal distribution of grades. I mean...I'm not out here to punish you guys, and I certainly want to sit inside the norm. I was quite amazed to see that once you pass this class, when you get into 141, 142, 143...I think those are the next classes... everybody gets As or something like that? 80%, 90% gets As? Pretty interesting as far as undergraduate classes are concerned. But that is good news as far as your GPA is concerned, right?

So the upshot of all this...so I went and checked the economics 100A, which is roughly the equivalent of this class, and their distribution is...I'll show you. See that? See the As and the Bs and the Cs? And the no Ds? Right?

So I'm going to bump up everybody in the class based on the median up to about 86. That does mean plus six points.

Where did you get that?

I got this from a cool website. It's called course rank or something? And I actually had a bit of a chat with Ethan Legand who taught this class previously. And since it's only one teacher, and he only has a 100 grades, that's not a good distribution.

There's a 1000 grades on this distribution. So I figure that's average. So that means that I'm going to hit the median...I'm going to look at the median, I'm going to adjust that up by 6%. Now. Two caveats.

Yes?

There's another distribution website called [inaudible] and I think it's 62% As for EEP100.

Yeah, for EEP100, the data sucks. I don't want 100 students. I want 1000 students across professors. So I agree with you in principle that we want to look at the previous data, but I'm looking at more data. Now there's two caveats. Right now the median is at 79 point whatever .

But that's based on a denominator of 105, not 100 points, because I had to add in those bonus points that we've been talking about now and then. People that are getting points for good questions or people that are getting points in the discussion section. What that means is that if I take off those 5 points, that the median is not 79%, it might be 82%. If you do your math, you'll figure that out.

That means the bump will not necessarily...in fact it's probably likely to be less than 6%, so don't fix on your mind 6% higher than whatever I have right now. But do know that I'm going to hit a median of 86% as far as an across the board adjustment.

The likelihood is that...what that means is that half the class is going to get 86% or higher in this class, which is high Bs and B pluses and A minuses and all that. And half the class will be where they are. I'm not going to force a certain number of fails or Ds or anything like that. And that is...I believe...the last comment I have to take about final grades, right? And obviously, as you well know, there's still 45% of your grade to be assigned. So you only have 55% of your grade. People are sitting there going...oh my god I'm failing. You haven't gotten, yet, 45 points assigned.

Any questions on that? So that's good news. Merry Christmas.

Extra Credit. Ah...but wait, there's more! So a whole bunch of people gave me a million different suggestions for extra credit. All of which, except for maybe on that I rejected...the biggest problem with some of these suggestions is...number one: please read my essay on whatever. Please read my essay from another class (which is even worse...double credit). And I don't mind double credit, but what I'm trying to find in terms of these extra credit projects, is that I want you guys to either have explicit, obvious learning or results, and some kind of impact. So writing your letter to your congressmen when you get back a roboreply is not getting you anywhere. You might as well say hi. And then they'll say hi. And then it doesn't mean anything.

So here are four possibilities for extra credit:

One person said...well what if I go to a city meeting, I think the example was the Berkeley Marina, and I go make a comment, or something like that. Now you may not shift the Marina from a project that happens versus not happens, but if you do make a comment, or it is on the public record, as in you record it, or you have your friend record it, or you have a public official there sign a piece of paper saying, "So-and-so made a comment at this meeting." (good or bad) then that is worth something to me. If you want to hand that in, I want context, I want your comment, and it would be nice to find out if they did anything about it besides saying, "Thank you very much." But that won't be worth very many points. Maybe one or two points.

The points, by the way, are subjective, and they're up to me.

Do we get like three stabs at extra credit?

3 stabs? I'll tell you about how many stabs. You only can do that once. But there's four different types of extra credit projects here, so you can go all to town.

Can you specify the types of meetings?

Something like a local political thing. Not the deacon's society of Berkeley. We need more carrot.

The Q&A that they're having about the fee increases, would that count?

Nothing on campus, how's that? Politics. I want politics. I don't want bureaucracy.

It could be Berkeley, it could be Oakland, it could be LA. I don't care where it is. But it would be nice...it is a good idea to go to these public things.

And if you're already involved, then that's fine. You're getting credit for something you're already doing. But I want it recently documented. Again, less than a page, and I want it either notarized...recorded or...not notarized, but signed off by a public official.

They will go crazy, actually, thinking about what they're signing. That will be even more interesting.

Number two: solve a collection action problem in your household, co-op, or house. 5 or more people. Including you. That means you and 4 others.

Collective action problem...no ones cleaning out the dirty dishes, whatever, whatever.

I want you to write up:

#1 the problem

#2 the plan to fix the problem

#3 the agreement that was reached. I want everybody in that household to sign your agreement, and I want that.

#4 did it actually work?

Can you go over number one again? The previous question?

Something on a city calendar, or a local governmental calendar. Is that what you're talking about?

No, the steps.

Yeah, sorry. Let me write it down. That will slow me down too.

Problem. Plan. Agreement. Success. And that is a question mark, but you don't have to guarantee a success. I want you to have agreement on it, right?

Again. One page. I want signed agreements. I know your household members are going to say, "What the fuck?" but that's okay. Extra credit! I'll buy you a beer. Now, this is worth variable points. I'm just saying one to five points. If you do something awesome, then yeah, you'll get five points. If you say, "Oh, we figured out how to take out the garbage," yeah, maybe a point. Okay one point. Fine. One point.

If you live by yourself, but you have a group of friends that have a bunch of problems can you still do it...

You can go mediate a household. That's fine, go ahead. If you could mediate a frat, that would be awesome. The bathroom next to the front door of a frat. Who's going to clean that?

Right. Any questions on that one?

These are all due by the final exam. After the final exam's ridiculous, right? But like...give it to me at the final exam.

Yes, I am making work for myself, so don't make my work hard. If I can't read your writing or it makes no sense, I'll take points off just because I'm tired and lazy, okay? So be good to me, a little bit here.

Is this a page or less?

Yes. everything here is less than a page. Well...no. This next one...

Ooh here's an interesting one. Every time I walk down near Telegraph Avenue, somebody asks me for money.

Interview three panhandlers. They have to be asking for money. You don't interview the guy playing the guitar. You don't interview the guy who's asleep on the sidewalk. This can be team. I would be very cautious about going up alone to some panhandler and saying...let me...tell me about yourself.

And it helps to have another person. I don't know. You can have one or two people.

If there are two people, and they're both in this class, they will both get credit. The credit will be 2 points per trio of panhandlers. Maximum two times through.

Don't spend all day talking to the people on Telegraph, although you might. What you need are demographic data: Name (first name is fine), age, male/female, where are they from, and where were they born, as in last known location. As you may not know, or you may know, there's a lot of migrant panhandlers in Berkeley.

Can you accomplish it without giving them money?

Absolutely. If you give them money I will take points off. No. you can definitely...you can figure out if money is involved...that would be an interesting little side note.

Do you have to take pictures of them?

No. Pictures are optional. I actually thought about that, but that's a very difficult, private situation. I don't want to deal with that.

Why are you asking me for money?

How much do you make? (Hey, are we going to be economists or what?)

And then how often do people give you money? And if they say "Woah..." that's okay. that's an answer.

They're like teenage kids most of the time. They're like...oh I want beer money.

When will you stop asking for money? And...what's next in your life?

And do you care about fee increases of the university? Just kidding.

What if they get offended, and you're only halfway through, does that count?

You're out. No answer. You've got to complete your survey! And don't sit there and say, "Dude you have to answer my question! Because I'm going to get points!"

Do not berate these people. No one gets to go to jail. No credit for going to jail or getting hit.

Are you going to e-mail out this?

No, if you're not here today, screw you. In fact, I'm not doing anymore e-mail on extra credit. No more. Period. No.

You mean spam mail?

Yeah. No more spam mail.

How many times did you say you could do that?

This is going to be...you need three panhandlers equals 2 points. 1 to 2 people. That's you guys. Two sets max. That's up to four points.

And don't go there as a posse and interview the same person over and over again. If I see the same things twice, I'll start nailing people.

Are you going to e-mail the results to this? I think the results will be interesting to read.

I'll probably blog them. One way or another, yeah. I mean...it'll be very public. I think the results will be interesting to read. And in fact, if you come to me and you give the extra credit, and I like them, I'm going to ask you for a digital copy, because I'm not going to type it again.

Is that limited to Telegraph?

No. Anywhere. Anywhere that people are asking for money. No telemarketing asking for money people. Why are you asking me for money?

Number 3. So here we go to the politicians, right? Remember my rant about ethanol? Yes? Something like that?

Contact your house or senate. This is a variety of what you saw in the e-mail, right? Do you support corn-based ethanol? Given no environmental economic value? If yes, why?

That's what they have to answer. Why. If no, what are you doing about it?

Now what I want on this one...this can be worth again 1 to 5 points per representative or senator. Two times through, that's all you get to do. So if you want to flood out spam to 200 different senators, I don't mind that.

What I'm thinking of doing is somehow...because I don't want to have duplication of effort... I'm not quite sure...I think I'm going to set up a Google Spreadsheet. How should I do this in terms of not having everybody duplicating effort?

What do you mean by duplicating effort?

As in...everyone contacts Congressman Cambell. Whoever our congressman is in this district.

Send out a sheet...

Print out a sheet? That's too late. Like a signup sheet? I want to make it digital.

You can make a Google Doc

A Google Doc? Okay?

But people can erase...

I know...does Google Doc do tracking?

Yeah.

It does do tracking? Actually, you know what...here's what we can do...we can do it two ways. I'll do the Google Doc. It'll be a spreadsheet.

And when you sign up for something, e-mail it to me. If someone erases you, I'll just fail them in the class. Is that a good enough punishment?

Any other suggestions? Or questions?

I was wondering if we're still allowed to do the extra credit where we contact any politician, at local, state, or federal level?

I think I wrote something like...that's still allowed, yeah. That's number whatever. Option E. Here's the thing that's important about this one, and this is why I have the 1-5 points.

You can send this to a corn state senator who are usually pro-ethanol. But put a little bit of a blurb in here besides "given that there's no benefits" right? And I believe there's some...go look up the scientific consensus on this.

And when they say why, they need to answer that. They don't get to give you a link to their FAQ. I want them to answer your question. I don't want them to send you back corn spam. Or corn ethanol spam.

When you mean like duplicated effort, do you mean that only one person can contact one senator?

That's right.

And does it have to be in the U.S. congress? Not just the California...?

It's not at all in the California Senate. It's in the U.S. Congress. The U.S. Congress, period. It's a US policy...federal policy.

So are you limited to only two senators or two house of representatives per person?

2 each, how's that?

What happens if they answer the question, but they're incompetent, and they don't know any benefits or costs?

Incompetent is awesome, because it's going on the blog. If they sound like idiots, then highlight that to me, and you will get more points.

Now here's the thing. This is not "gotcha" citizenship, although maybe it is. I want you to express this question to them, and I want them to answer it competently or not. Because one of the things that's funny is that although they did it back in the day...like...oh my god corn ethanol! Corn ethanol is going to solve all of our problems!

Pretty much everybody agreed after the fact that it's a mistake. And yet, it is still a law. And there was even...I think...did I send you guys the post on ethanol and how it's like physically impossible to deliver even that much ethanol?

We're going to be dumping it in the ocean, right? Find any number of facts, make it short; you guys know how politicians don't have an attention span. And their staffers have even a lesser attention span, because they're always going to cocktail hour to be lobbied by somebody.

So make it short and sweet. They need to answer your points. And if you want to make it just one point...just please answer my one point, that's fine, okay? And if it takes a give and a take and a give and a take, that's fine.

Phone calls? Fine. Faxes? Fine. If you need a fax sent to the department? That's fine. If you need to put my name on it, that's okay too.

Any questions about all of these things?

So out of these four, we can do all four of them?

Yea. Cool. If you get a 120% in this class, I'm happy. It won't be that much, sorry.

This is 1 to 5. The collective action thing is...1 to 5. The city meeting thing is 1 to 5.

If you get like...Berkeley declares economics week, that will be awesome.

[inaudible] Can we do all four?

You can do all five. That other one...contact your other...the one on e-mail that I forgot about. So if you get 20 points...don't even...forget the final. I'll just do this. That's fine. Go ahead.

For a collection action problem, say that you're in a house of 150 people.

Awesome.

What's a realistic number...

Well if it affects 150 people and you guys have...what voting process do you have right now?

A voting process? We have counsels and stuff.

Whatever makes something supposedly in agreement. The question is...does that actually happen? That's not really the question...does it actually happen...that will be your learning experience.

If you're in a 150 person house and you get 5 of your friends to say, "Yeah, that's a good idea to have free beer on Fridays paid by those guys." That's not exactly...you are now the special interest group.

So solve a collective action problem, and you'll know what I mean.

Okay. any other questions on this extra credit?

I don't think it is a good idea...like...we can do all the extra credit assignments. Because like...I'm not planning to do it, if others are all doing it, then I'm pushed to do it.

You're not pushed to do anything.

But then if I'm not doing it...

Good question. So this is what I'm going to do. I'm going to curve the class, and then I'll add the extra credit on top of that. How's that? Then you're okay.

Don't worry. It's math. That's why you're in the right class.

When they reply to you, can you ask for like...more detail?

You can go into much detail you want. The more detail in terms of the answer you get from them, the more points you get. But up to 5. Not 22 points.

So you're okay...if the final...after you curve everyone and you add the extra points, then you end up with more than 40% As.

I'm okay with that. That's called good work. There is such a notion as good work, right? I'm not rigidly attached to 10% fail 10% A distributions.

Good? good.

Whoops...I forgot to teach you the class. This was interesting. I got this evaluation in my box, and it said...course learning goals.

The course has highlighted several specific learning goals. This is the first I've heard about it. You're going to do this evaluation next Tuesday, so we're going to cheat. And I'm going to teach you what you're supposed to know before the evaluation. It is surreal. You're right.

I wrote an e-mail back, "What the fuck!"

And they're like, "Oh, you weren't on that e-mail?"

Now let me tell you. I hope you guys have a clue about these four questions.

Be able to construct predictions of demand for private goods from a model of a utility maximizing consumer. Have you heard of that? Utility maximization?

Okay, so if I have utility of 2 goods, X and Y, and I have P_x , P_y , and M , I'm not going to write much more than that, but keep taking notes, and I want to go to a demand function. now there is a mathematical derivation where you take derivatives and you find the optimum demand function. You guys remember that? You've done that stuff before.

So let's just say that these goods are both normal goods in a sense of...they're not [inaudible] goods, which is that stupid idea where price goes up, you demand more.

If the price of X goes up, do you demand more or less?

Less.

Price goes down, you demand more or less?

More.

Okay good. So you understand.

If you get more income, do you demand more of a good? But the rate that you demand more depends on whether the good is what? What's one kind of good?

Raise your hand?

Inferior.

Inferior good means it goes up. 1% increase in income? Does it fall?

How does that work again? Inferior good means that you go up 0 to 1 percent. No. Inferior good is negative. Income goes up, but demand goes down in normal, right? Sorry. Inferior.

Normal: income goes up by 1%...0 to 1%...that's a normal good. Luxury good goes up by more than 1%. Congratulations. You've mastered demand function.

Now, if X and Y are substitutes, and the price of X goes up, the demand for Y goes...? Up.

If they're complements, the price of Y goes down, the demand for X goes what?

They're complements. The price goes down. Demand goes up for that good and for the other good. they're complements. Great. You've mastered course goal number 1.

I should've done this on the first day. Okay. Be able to construct predictions of supply for private goods with a model of profit maximizing firms.

Guess what? A firm has two inputs called X and Y. The price of X, the price of Y, and what are we going to do here...predictions of supply.

X and Y are both what for this firm? They're inputs, right?

This is a profit from X,Y. We have to do a transformation. Start it again.

Z, X, Y. the final good that they produce is Z.

The two inputs are X and Y. Holding demand equal, if the price of input X goes up, the costs of the firm for supplying X goes...up. Supply is shifting in or out?

The cost of delivering goods goes up, the supply shifts in.

If demand goes...starts here...this is your equilibrium. Demand shifts out, are you going to make more money or less money?

Who thinks more money? Who has a hand in this room? Who thinks less money?

It depends.

It depends? Oh, this is a good one. True or false. Demand shifts out. Does the firm make more money or less money?

More.

Thank you. Maybe helps to do the graph, right? And all these words, words, words.

Congratulations, you've mastered goal number 2.

Be able to combine predictions of supply and demand to understand the possible effects of changes in policy or improvements in technology.

What goes here? P or Q?

P.

Remember that? So supply and demand. Technology changes in the production process. Does supply shift out or in?

Out.

Oh...technology changes. Technology improves, it'll shift out, right? Technology changes...it could be...technology gets worse, in a sense. But if technology improves, supply is going to shift out.

There's a change of policy. Let's just say that the government decides to start buying corn on the market and turning it into ethanol. Does demand shift in or out?

Who thinks that the demand shifts in? Who thinks the demand shifts out? Who hasn't raised their hand? At least we have some honest people.

Demand shifts out. Price goes up, quantity goes up.

Congratulations, you've mastered goal number 3.

Understand the roles that externalities play in environmental problems. Positive externalities are good or bad for us? Good.

Negative externalities are good or bad for us? Bad.

We want to have fewer or more positive externalities? More. There we go. This is like kindergarten, isn't it?

Ok, Pigou. What did Pigou say we should do about externalities? Let's say there's a pollution from gasoline combustion. It's choking people that are walking by and going on their bikes. What shall we do, says Mr. Pigou?

Pigou says tax it, right?

So the problem is...what's the biggest problem with Pigouvian tax?

What should it be? It should be more than zero, but we don't know how much more than zero, right?

The tax, theoretically, is based on the amount of damage. Theoretically, right? But you can miss that one quickly. It doesn't mean it's a bad idea, but you want to put the tax on it in order to affect behavior, change the quantity that is being produced. And if the quantity being produced is still too large, what do you do with the tax? Raise it.

Okay. That's hard isn't it?

Does he specifically say where the tax is supposed to go? The tax revenue from that? Is it supposed to actually go to the...

Good question. No, the tax itself is supposed to change supplies so that the demand is correct.

So where the money goes doesn't matter?

Well...it could go...this is the big debate on what to do with revenues from...if we should actually have them...auction of carbon permits.

Should those revenues go into the general fund? Should those revenues go towards green jobs or whatever, or should those revenues be refunded per capita to citizens? I actually think...and this is a learning moment no on this thing, right? But besides the fact that cap and trade is opaque, it's opaque intentionally, because then the politicians get to control a lot more levers than a tax. A tax is much more transparent.

Politicians do not like transparency because it takes away their freedom of action and manipulation in terms of their friends.

So if you have a tax or a cap and trade revenue, you can either put it in the general fund, which is what happened in New York recently...who's the governor? What's the governor of New York...Patterson? The blind guy. He basically seized a bunch of money set aside for environmental something or other and put it into general funds to try and balance the budget, right?

That's not exactly a good way to solve environmental problems if the money was earmarked for environmental problems. The second thing that I think is the best thing to do is to refund it back per capita because that makes it...it becomes kind of a progressive tax because everybody gets money back, but the people that are doing the most polluting pay the most. So that changes the distribution of income in society—punishing the behavior you don't like, and refunding it back, which, from a social welfare perspective, either helps out poor people, which is a good thing or it's neutral, right? It helps out everybody by making them whole. And they can use the money on something else.

So on the margin, that pollution is more expensive, but the block transfer...didn't i...

We didn't talk about block transfers of income did we? Let me do that for a second. This is actually really useful.

We can even call that new material.

So if I have a demand function for gas. Or...this is society. And let's just say that this is supply, and then we increase the raise the price because we put a tax on there. We've raised the price and we've shifted quantity inward. That's essentially the point. The point is to use less fuel.

This is known as an effect on the margin, right? You're affecting behavior on the margin where supply and demand are crossing.

That's what we mean in economics when we say on the margin. Now...if that revenue is then rebated back to consumers in terms of a lump sum of income, then it doesn't affect the price of any individual item. It doesn't affect the price of tennis shoes or donuts or coffee or haladine, or anything like that in particular. It just is a chunk of money that arrives on your doorstep. It does not affect the relative prices of things, but what it does do, is that it gives you more purchasing power. Go back to utility function. we say...we give you...no. Consumption function... P_x, X

plus P_y , Y equals less than or equal to m , your income. If you're increasing income, you can consume...you can have more consumption. And I mean broadly defined. Consumption of donuts, consumption of education, or savings of money for consumptions of tomorrow.

So when you increase this, you're not affecting the relative choices of these items. You're not distorting behavior. Therefore, this is the most efficient way to transfer money to somebody.

If you want someone to do the right thing, you might change the price of that item. If you want to affect the behavior with respect to Y . You might change the price. That's like changing the price of gas. If you don't want to distort their behavior (you want to maximize their freedom of action) you give them a block transfer. And that's what is behind the idea of tax carbon, and rebate the proceeds per capita.

It's also the same idea of the stimulus idea of giving everybody a \$500 check. Cash for clunkers was a disaster, from an economic perspective, because it told people...stimulate the economy by buying cars. This particular thing.

A lot of people weren't even helped by that because they weren't in the market for cars. And that's how we started to see that the Cash for Clunkers was actually just a giveaway to not even auto manufacturers...dealers.

Did you have a hand up?

But then...if we assume that all consumption has environmentally harmful effects, which all actually does, that actually doesn't do anything to solve the problem because if you tax one thing, you redistribute that and everybody has a higher income, and we'll just buy more of everything. Then there's still... It's just the shifting...

In a sense, but what your argument relies on is all consumption has a negative impact, which might be possible philosophically, but then we don't think that all consumption is equally environmentally harmful.

So if you consume a bicycle repair, that's not the same as buying a gallon of gas and burning it. So you're trying to tax the most harmful behavior, if you want to do that. Or subsidize the most inefficient behavior, which is one of the reasons why education is often subsidized. Even gifts to charity are subsidized in a tax cut. Do you guys see what I'm saying with a block transfer? Not to distort behavior...or it's the least distortionary way of making people wealthier without distorting their behavior. You get it. Silence is consent?

I have this as an explicit idea in water.

In water...here's your water economics lesson. There's a demand water...and let's just say there's a flat price for water. But let's just say there's only this much water in the system because of precipitation.

The headlines came out yesterday that they're expecting 40-60% total water supply for next year. Which is drought year number 4, officially. So these prices are set based on a bureaucratic price setting.

If you have supply, and it only goes to here, and this is the price, do we have a shortage? Yes?

I've got point A, point B. Which one is supply? A or B? Which one is demand? B.

The shortage is the difference between them, right? So what an economist would say is...hey, let's raise the price.

So let's say they do raise the price in the most efficient way, and now supply and demand are equal. But this block here of revenue from your monopolist to your supplier, is profit.

There's a very big problem with this as far as public policy people are concerned (or activists). You're not allowed to be making a profit on water. Making a profit off of a life good. Whatever the rhetoric is.

So what you would do, is you would actually rebate block C back to consumers. And more importantly, you rebate it back in proportion...would you rebate it back in proportion to how much they would consume? Or what's the best way to do it?

Like a flat rate. Everybody gets the same value?

Yeah. Per capita. Every person gets the same rebate back. That way the heavy water users end up subsidizing the light water users. But the heavy water users are actually paying the cost of the system. If you use 80% of the water, you're paying 80% of the costs. But the rebates go back per capita because if it went back according to use, what have you done with the price? Nothing.

You've essentially just...you discount the price back again. Some people might be a little bit slow to figure that out, but all the economists are going to be like, "Woah, doesn't matter."

I spent \$2, I get \$1 back, but that means I only spent a dollar. So that's how you could do water. That's how you could do carbon taxes. That's how you could do a lot of different things. In terms of rebates.

Tax and rebates. Tax and...oh feebates. Tax and feebates. Fee and rebates. So that's how we want...why block transfers are good because they do not affect behavior at the margin. It's a very, very useful concept that...if I hadn't said it, and I'm criminal in my negligence, so now you guys know it luckily before the end of time.

What would Coase say about an externality and how to solve it?

Ronald Coase?

[inaudible]

Almost, no.

Did you read that paper? Did I give you that paper? She's nodding. Was it an optional reading?

You handed it out in class.

I handed it out in class. Oh. Scrap paper.

Didn't he say something if there are a few people, and they can do it with a few parts, then they can do it without government intervention?

Okay...you know how that thing goes. Now here's the 3, we don't know. What's number two?

Property rights? Like...does it matter who...

That's right. So property rights...that's part of the solution. What else?

Transaction costs.

Transaction costs.

So you need to have few people. And yeah...this is a 1A, property rights. You have to assign property rights to one party. Just think of a two-person game.

You've got the upstream person, there's a stream, and there's A, and there's B, right?

A is polluting B. It's going the downstream. What Coase would say is not that A has any given amount of rights. Or B has any set of rights. Coase would just say...hey just give the rights to one of the two of them. If you give the rights to pollute to A, and there are...there's only two of them. We have given the rights.

Let's assume for a moment that the transaction costs are low.

If you give the rights to A, what's going to happen in terms of addressing pollution?

If A is the polluter, and B is the person that's experiencing the negative externalities, they're going to pay up to a point, which there's no equilibrium.

Who's going to pay?

B?

To?

A?

To do what?

Because it'll stop it...

Or there's optimal pollution. Pollute less. Not stop. Right? So if A has the property right, the right to pollute, and B doesn't want that to happen, then it's B's job to reduce that pollution. Buy paying A to reduce it, right? The pollution reduction could be between one and a hundred percent. It depends on what A is willing to accept.

We're not dealing at the moment... with bilateral monopoly because A has the power to accept or reject the offer from B.

So in a sense, that will be a transfer of surplus from who to who? It's complicated, actually. B is going to pay money to A, but B is going to receive a benefit from less pollution that is greater than the money paid.

Otherwise B wouldn't do it. A is going to receive money that is more important than the reduction in benefits from polluting. Otherwise A wouldn't do it. It's a typical gains from trade scenario. In fact, you can put it into the bilateral monopoly if you want to.

Remember the bilateral monopoly? We weren't sure where equilibrium was? We just knew that it would be somewhere, in some range? But even so, there's going to be some surplus left over at both sides. The bargaining power will determine who gets more of the surplus, but both are going to have surplus, otherwise, they would not do the trade.

Okay so...surplus. What's going to happen if B has the property rights?

A will pay to pollute?

A will pay B to do what?

To pollute.

To pollute right?

If B wants to, will there be no pollution?

If B wants to though, there could be no pollution. If B is a hardass about this. It could be bad like...you know...radioactive kill my children water...maybe there's no pollution. That would be an outcome.

But B might negotiate...you know what? It's worth it to me to receive some money and to receive some pollution as compensation, right? So A will be doing some polluting and paying some money, and A will be better off compared to doing no polluting at all.

And B will be receiving some pollution and some money, and B will be better off compared to either no pollution at all, and certainly to 100% pollution. That make sense?

That's Coase. So...we're done teaching the course as far as this is concerned. Hold your hats.

Yes. The property rights...so this is the politics.

The economists may not care, Coase may not care (I think Coase is still alive. He's like 120 years old or something like that). But Coase may not care who gets the property rights, but if you're a politician, and you get to assign the property rights, you are going to be very popular. Because A will come to you and say, "Give it to me!" and B will say the same thing, right?

Now there will be some rents attached to that. So let's say rents. There will be some value attached to that in terms of literally the money changing hands. If you're paying for the right to pollute, who has the property rights?

The other person.

The other person, good. which one? A or B? B, right? B has the rights. A has to pay in order to pollute. That payment to B is a rent for the ownership of the rights.

If I'm a politician, and you're B, what do I want? Money, that's a good start. Is it going to be greater or less than the amount of money you're receiving from A?

Less

It better be less, otherwise B wouldn't be paying it. It's not even worth it for B to bribe you.

But there is some notion of splitting the gains with the person who gets the property rights. This is in a sense what's going on with the cap and trade negotiations in the senate and congress. The house. And the congress in general.

What they're doing is they're saying...we want the government to be assigning these property rights. And remember...let's give all these permits away for free. Boy...is that worth something.

So those congressmen who are pushing for the free option...number one we know that they are not generating income for the treasury, despite our government having a deficit that's sky high. Because giving it away is less than selling it.

So why is the congress deciding to give away our property to polluters instead of selling it and making money for us?

Coal industry is very large and powerful

Large and powerful, but more importantly, the coal industry makes campaign donations. So in a sense, our representatives, especially the ones from world famous West Virginia and all of their friends, because there's horse trade and log rolling in the congress—they are basically saying. "We will give these free permits to polluters, and they will give us...not even a penny on the dollar, more like 1/1000 of a penny on the dollar (in terms of campaign donations)". These permits might be worth up to a trillion dollars in terms of value. In terms of the right to pollute.

I don't know the exact numbers, but if you're really interested in this, go look up the amount of carbon that's being produced, tons of carbon...

Here's your formula. Tons CO₂ equivalent US times the reduction. Let's say that's 20%. Times...lets just say 30 dollars a ton. That's the value of those permits in terms of markets. They get the for free; they sell them for \$30 per ton of CO₂ equivalent. That could be worth...I don't even know...a whole bunch of money. But we're giving them away to our...

We. We wish we were. I wish I could give away carbon permits. One of the radical egalitarian things to do is to send every citizen, or if you want to, every taxpayer a bunch of coupons in the mail, and here are your carbon permits. You get to emit this because you're a US citizen. And if you want to sell them because you don't use that many, because you bike around Berkeley, and you drink fair trade coffee, then you can sell them. And if you're going to be an SUV coal miner, then you'll have to buy them. Make all of us who are below average in pollution wealthier at the expense of our polluting. But that, unfortunately, is not happening. Instead, our leaders are giving permits away to people that are polluting—mostly people that are energy customers in the northeast.

Is this just another collective action problem?

Yeah. Special interest groups destroying society in the congress thought that mechanism, right?

Do votes matter too?

Citizen votes? That's the interesting thing. I think the correlation between campaign contributions and electoral success is somewhere around 90%. So more money gets you elected. Even worse, if you're the incumbent, the likelihood that you will be voted out of office is something like 1 in 10. So incumbents...there is very little competition to get reelected in the congress, which is kind of sad. When I told you I might run for congress...it's just to blow the hole into that thing. Or lose, whatever. It's fun anyway.

I mean this whole campaigning in the US...I think it's really crazy, especially for people that are not from the US because it's insane what kind of money is spent, and I don't understand why people don't just say...okay...everybody gets 1 TV ad, everybody can write online whatever they want, and they get two articles submitted to the newspaper, and if they haven't got their points a cross, then that...they can't hand out free caps and pens and...

Campaign finance in this country...so other countries...I mean...I'm sure you guys...you aged noticeably in the last presidential election. It took two years to do the presidential election. In the UK, the labor party is going to have to call an election, I think, before June? It's pretty sure that they're going to lose. But the campaign has not begun. Because I think they call one election, and I think there's...45 or 60 days? Does anybody know? UK elections?

So they call the election, and you've got 60 days to go. Now that's a limited time span. That's one dimension of the problem. The other one is shall we have limits on campaign finance or advertising, or stuff like that. That has been struck down in terms of limitation of free speech. So if you limit my speech (which is limit my ability to advertise myself as a candidate) then you are limiting my constitutional rights. As far as I know.

But pencils are not speech.

Pencils are not...well...you can consider...pencils are for speech.

Have you heard of the clean campaign in Arizona? Clean elections campaign?

No, how does it work?

They restrict the amount of money that you can spend on running your election. And I think they just passed one in California too. I'm not sure...

I'm not sure if it's happened in California, but it could happen. Clean election campaign...

I know the bill has...but I don't know...

Oh, oh, oh. But did it come through?

I think it was...I don't know. I lost track.

So the idea is to limit/cap total spending.

Pretty much.

So that makes sense to me. Because what ends up happening is you...but look at our shortage here. We've got supply and demand. You're limiting total spending, right? We know we've got supply, but the demand for spending is higher. So it will be like...oh yeah, we're not doing spending, but my friend here has decided to host a free chicken dinner for everybody. It's not spending; it's free! It cost something, but chickens are cheap, or whatever. Who knows, right?

So there's different ways of getting around it. And every time they do campaign finance, it goes around in a different way. This is a bit of a nightmare in the US.

If we had publicly funded elections that would...

Publicly funded doesn't necessarily affect that, but it's a different way of doing it.

Because right now...you can check the box in your tax form, but if you accept the public funding...

You're capped.

Right.

McCain was capped in the last election, I believe? Or not? Did he breach that?

He didn't take it.

He took the public money, but did he limit his spending to that?

Think it went through the R and C.

Oh yes. So they shuttled it through the R and C, which is a proxy for the McCain campaign. See, that's another way of getting around it.

I would say the same thing about the public funded...a lot of them don't even take it because it's not enough money to get elected. For the presidential elections [inaudible] so you're capped...a lot of the past candidates haven't even taken it.

Yeah. I think Obama said he would, but he didn't, as soon as he got popular.

As soon as the wall of money showed up, he's like, "Woah, I'll take the wall of money."

So competition in politics is very important. Because those are your representatives. There's an even bigger problem which is called...let's stop that that there. Just push the red button.

So...what I was saying?

Wall of money? Competition? Competition.

Oh yes! So it's an aggregation problem. Because I'll tell you the exact same problem. Say that you have utility from goods 1 to X_{1000} . And let's say that it has cap X which has a numeric value. 22.

You're consuming 1000 different goods, and your utility is 22.

If all that I see is 22, I have no idea what mix of goods you're consuming because you might be 22, and the person next to you might be 22, but you both are consuming different bundles of goods. Keep this analogy in mind when you think of votes. Because your representative might vote 200 times during a 2 year term in the congress, but you vote for them once. Right?

And a lot of people are saying, well, this is a make or break issue. If they're pro-abortion, I vote for them or against them. If they're pro gay rights...I mean...notice how the republicans have used this as a campaign technique to get voters to vote for this emotional thing. The democrats will use the same thing. So some people will literally go and vote based on one thing called... that person is pro or anti abortion. They're single-issue voters. But then that person gets into congress and they're going to vote on whatever. A thousand things, 200 hundred things, a whole bunch of different things.

And what happens if they say...oh yeah, I agree with your abortion position, but I'm going to disagree with you on the other 99% of the votes. Are they really a good representative for you? That's representative democracy. We have to be very careful about that. In some ways, that's why candidates are all about "feel good". This is why Palin is so popular. I don't know if you've seen the videos. It's pretty hysterical when they interview Palin supporters.

"What do you think about her position on foreign aid or foreign affairs?" and they're like "Woah, what? I like her!" And that's why she's popular. In some ways, that's why Obama's popular. "I like him. I have no idea what he is thinking, but I like him."

That's why in...there's lots of countries, including ours, where ex movie stars become politicians. Or sports figures. Or professional wrestlers. Because "I like them!"

We've had two governors that were movie stars, right? I don't know if Reagan was one, but anyway. So that's what's going on. My representative is someone that I like, who I can identify with, who I can sit in the bar with and have a beer.

As far as their...

And those are executive. Those governors and presidents are executives, but representatives are exactly the same. As far as individual votes, you might disagree with your representative 90% of the time even though you voted for them. That's a bit of a democracy deficit, as far as I can tell.

It does point towards direct democracy, which we could do right now with all this texting. You guys could be voting all day. Actually, probably not all day.

But everybody could log on and vote on various bills. I mean...you want to go to war? You want to expand the forces in Afghanistan by 40 thousand? Go to your Calbears account, and vote. And your votes would actually affect policy. That would be cool, as far as I'm concerned.

Including all the idiots voting. Remember, everybody thinks everybody else is an idiot. But we're all idiots to everybody else. So you have to trust in the idiocracy. Maybe more than the representatives we have. That's the whole peer-grading phenomenon as well.

Hand in the back?

Seriously? Trust everyone? Middle America?

Well you have to trust...it's not just trust, but verify. When you have democracy, you have to also have rights. Because you don't want mob rule. Right?

One of the definitions of democracy is...two wolves and a sheep voting who to have for dinner. You have to have sheep rights where your individual rights cannot be trampled by the majority. That's why we have a bill of rights in this country. I heard just this morning that in Iran, the government, which is...you know...semi-democratic...it's kind of a little bit thuggish right now...but they're arresting people in Iran whose relatives are on Facebook criticizing Iran in the US. If you're an Iranian student, and you go to study in the US or France or whatever, and you criticize Iran, the security services in Iran are reading your Facebook account, and they go and arrest your parents and put them in prison. There's a little bit of a problem there in terms of free speech. It might be free in this country, but it's not free in another country.

But isn't equally important, as a right, to have...for democracy...it was the original idea to have actual citizens, and by citizens, not just people who pull out a passport and they're born in that country, but the independent thinking, educated, it used to be men at some point...I mean...

Educated, I think it's....

Wouldn't that also point...if you have a lot of people that are not informed on issues, I mean of course everybody thinks the right choice is the choice I make...

Their own choice.

But it still should require a certain amount of knowledge.

That's what they had in the constitution. It said you shall be white (which means you're knowledgeable), you should be a man (which is also knowledgeable). You should hold property (which means you are knowledgeable). You shall pass a literacy test (which means that you are smart). You should pay a poll tax (which means you have money).

All of those requirements in order to vote have been thrown out.

The only thing now is that you be over 18 years old. Oh, 18 to 21. They didn't have the right to vote for a long time either, right? Thall shalt be mature. Although you can vote, you can't drink, which really sucks because you can't get drunk and go vote.

You don't think there should be a certain threshold for education? And I wasn't referring to...

PhD obviously. You guys can't vote. I'll take care of it. Put PhDs in charge...

The problem with thresholds and filters, and...oh you're not smart enough for me, is that, number one (here's the biggest problem) is that you're making policies that affect those people. If I'm a man, and women don't get to vote, and I make a policy that affects women, is that anything close to democracy?

Then should democracy even be for a whole country? Or should there be a ground level where you can make any decision for people that are actually...I mean....

Subsidiary. The idea of pushing decisions down to the most local level possible is a good idea. I am a big fan of that. I'm a big fan of the 10th amendment of the constitution which says something along the lines of...all rights not given to the federal government are hereby given to the states. The federal government has used a million different excuses to expand its authority into the states based on interstate congress clause. So the fact that...

I think the drug laws are a big one as well. Or the fact that drugs can cross the border, means that the federal government gets to do drug regulations. And if they couldn't do it directly, then they use the carrot and stick. If you won't do what we say, we won't give you federal highway funds. That's why the 55 mile an hour speed limit was intact for so long. And it was repealed because no one was paying attention to it.

With the respect to rights, I feel like direct democracy looks over rights. I mean...look at prop 8.

Voting against gay marriage?

Yeah. Like...those were people's rights, and the majority just overruled them.

I would say yeah...that ends up...goes towards mob rule. Amartya Sen, who's an Indian development economist who's also I think...won the Nobel Prize. Did he win the Nobel Prize? Does anybody know? Deservedly. He has a book called...*Development as Freedom*. And he talks about democracy or rights. As in...can you vote, or do you have rights in terms of participating in a market and making decisions and things like that.

And if you think about the contracts...in this country, we tend to have both.

But if you're in China, where there is no democracy, certainly not at the federal level, but there are rights to make money in the marketplace, you have to ask if those people are better off in China versus in a country where you have lots of democracy, or mob rule democracy...say... Zimbabwe, but no rights.

And Sen said, rights first, democracy second. One of the reasons there has been sectarian violence problems in India is...in Gujarrat, there was a massacre of Muslims and a counter massacre (I don't know who started it...Muslims and Hindus).

But the political leaders actually led the massacre of Muslims. Not exactly a good example of democracy. These rights for Muslims did not exist. So on the one hand, it's not like you can sit there and say, "We won't let you vote", but you have to be very careful with democracy if it leads to mob rule.

In this country we tend to be very good, but we've had a lot of push back by people who are in charge of taking care of us. We can tap your phones; that's okay, because we're taking care of you. I worry about that.

I got completely sidetracked. But that'll be on the final, don't worry. Any other questions?

It's political economy, dammit. Keep that in mind.

Two more things. If you put a monopoly in charge of the forest, is that monopolist good or bad for conservation?

Good.

Why is a monopolist good for conservation?

Because you restrict output to raise it's own price

Right. So a monopolist will make more off of that item. So monopolies...that's kind of...if you want to call it...it's either a silver lining or the entire cloud, because it's not necessarily a good thing to chop down forests.

But monopolists will allow that forest to come into the market more slowly to maximize profits. Which, from a resource perspective, is actually good. From an environmental perspective, it's spectacular. Because what's the difference between resources and environment? Resource good, environment good? What's the number one difference that of course you know because you're taking a class called environmental policy.

Price?

Price.

What kind of price?

Because you can buy resources, and you can buy environmental goods?

Just exactly that, right? Environmental goods are not priced. Resources are priced.

That was Coase. Coase says that you can solve an environmental problems by creating property rights, which makes them into a resource. Pollution is a resource.

As a definition, you should know this...this is officially new material. But I'm going to discuss it at length in the next class.

Free rider cooperators reciprocators. Where is this contextually relevant? In what example does this matter? This situation?

Public goods?

Public goods.

Let's say that you have 50 tokens to give out or to allocate in your public goods game.

And I'm covering this up intentionally. Hold up a second.

This is one of those maps...those draw the lines between the things. You guys have seen that before? Here's the donation to the public account based on a total of 50 tokens.

Everybody remember how a public game good works? What happens is...you have 50 tokens. If you put on token into your public accounts, for example, everybody in your group gets $\frac{1}{2}$ a token. The economic decision is to donate how much?

Everybody in your group gets half of a token.

The economic decision is to donate how much?

50?

No.

Oh, to donate? Zero. Yeah. The economic decision is to donate zero. Because your cost is one, and your benefit is $\frac{1}{2}$. Cost is greater than benefit. Therefore you do not donate anything. But there are other people in your group, right? Let's just say that there are four. If you donate one, and there are four people, that means you generate 2 total. So you actually double wealth.

So let's match these behaviors.

If you have 50, you either give less than 25, you give more than 25, or you give something to depending on what [not you minus I] gives. That's what that jargon is. Minus I. Your I. Minus I means everybody but you.

So how do I connect these lines here? Free rider goes to which one?

Who thinks that free rider goes to A? who thinks it goes to B? who thinks its goes to C?

Iterate. Who thinks that it goes to A?

What does A mean again? I don't really understand...

You donate according to what everybody else does.

So other people put in 10, you also put in 19?

Could be.

Now everybody put up your hands. Come on, let's do it again. Lazy, lazy, lazy.

So who thinks A? Raise your hand?

Who thinks B? Right on.

You're a cooperator. A? C? Ooh. Split decision. By definition, we also don't know what you are if you're a reciprocator.

Who said A if you're a cooperator? Who said A? Why?

I thought cooperation was more like putting in the same amount as everyone else?

Cooperators give the same amount as everyone else.

Who thought C?

Because the reciprocator has to be A.

A negative definition, all right.

Because A relies on a reaction.

That's right. A relies on a reaction. This is the mastery of a multiple-choice exam.

A reciprocator is going to reciprocate, which is kind of what you said, except that's a reciprocator. A reciprocator will reciprocate, and therefore, by definition, the cooperators will get more than 25. These...you can also call these two here unconditional.

This is a conditional behavior conditioned on the behavior of other people.

Why would the cooperators give more than 25?

Because they cooperate. They're good.

Then wouldn't it be they give more than zero?

That's a good question. I would say that you have to set a break point somewhere, and if you set it at zero, and someone gives one...I've got 50 and I gave one, therefore I'm a cooperator. Well...not exactly, right? So what actually ends up...that's a very good question because this ends up mattering when you're repeating the game, and you're getting into their dynamic of "what did you do?" "what am I going to do?"

And if you give more than half of the money in the public account, it tends to show some notion of good faith in terms of supporting public account.

If you get less than 25 in public account, then you're getting less than half of your stuff. Half meaning some kind of psychological threshold for people.

So that's the reason that that breakpoint is used, but you're absolutely right that the free riders will give, in a sense, less.

Zero being less, right? So you can draw the line between cooperators and free riders somewhere between zero and fifty. This being 100% cooperator, and this being 100% free rider.

So the line is going to be there somewhere between these two different behaviors and if you draw it low, you might get people that are being classified as cooperators, and you look at their behavior, and they're not really that cooperative, in a way.

It's kind of one of these pop definitions...pop psychological definitions, but it's not strictly mathematical. That's a great question.

All right, that's the end of new material in this class.

Transcribed and checked for accuracy by Brynna Bunnag