[SQUEAKING]

[RUSTLING]

[CLICKING]

JONATHAN GRUBER: OK. So today what we're going to do is talk about health economics. Essentially, this is really just an applied lecture where I want to talk about a particular policy topic and throw in along the way what we've learned in this course that informs how you think about that topic. So this is just an example of how you can take the set of things we've learned in the semester and help understand, really one of the two or three most fundamental public policy issues of our time, and also the one I happen to work on, so the one that I find particularly important and appealing, OK?

So let's set the stage to talk about health economics by talking about health care in the US. And let's just throw out a couple of facts. The US in 50 spent 4% of our GDP, in 1950, we spend 4% of our GDP on health care. That's pretty big. That's a 25th of the economy. But it was the 10th biggest sector of the economy. Today, we spend more than 18% of our GDP on health care. It's the largest single sector of the US economy, OK? So spending on health care has grown enormously.

Now, the question is has it been worth it, both overall and distributionally? So overall, if you want to think about how it's been worth it-- many people look at these numbers and say, oh, my God, we've got a crisis. Well, that number does not tell you there's a crisis, OK? What we care about is what has been the benefit and cost of this growth in health care spending, OK?

Maybe this number is just disturbingly low, and maybe this number is still too low. Maybe we're not at the right level. You can't look at these big numbers-- and this is how we want you to think coming out of this class-- is to not have the knee jerk reaction people do and say, oh, my God, we have a crisis. Think, well, do we have a crisis? It's been worth it. And the answer to that is mixed.

On the one hand, if you look at the overall average health of the US, the growth in spending has been worth it. That is, as I've referred to a few times in this class, economists have methods for trying to value health improvements, trying to value life. I talk about them more in 1441. We'll get to the methodology now. But we have methodologies for putting a value on extending life, a value on improving health. And by those estimates, it's been massively worth it.

Health care sucked in 1950. Babies who were born prematurely were four times as likely to die, OK? I have a friend who just had a baby eight weeks premature at four pounds. That baby would have been dead in 1950. They just went home today. The baby is perfectly healthy. If you had a heart attack in 1950, chances you were going to die. Today, you'll live. Four times as many people live after heart attacks today as they did in 1950. The odds are four times higher.

Or you guys aren't having babies or having heart attacks. Let's talk a relevant number. OK. How many skiers do we have here? OK. If you were skiing in 1950 and you crashed and tore your ACL or sprained your MCL or one of those things, you're in the hospital for a week. You're on crutches for six weeks, and your arthritis the rest of your life. Today you get arthroscopic outpatient surgery within a day. You go home that night, and you're back on the slopes within a few weeks, OK? Health care is just much, much better. And if you look at a typical value of how economists value improved health, it has been worth it. We are better off as a nation spending 18% of GDP on health care today than we were spending 4% in 1950.

But there's another way to test that. What's the other way economists would say-- if someone says, well, we're worse off today, how would an economist challenge them? How could you prove that people don't want 1950s health care and 1950s prices? Yeah.

AUDIENCE: People are paying for it.

PROFESSOR: No one's demanding 1950s health care at 1950s prices. No one's out there saying, oh, yeah, I want crappy health care for low prices. It's the opposite of the airline example. Remember with airlines we talked about people bitching about service. But the truth is, if it was really a problem, there'd be expensive high-service airlines, which there aren't. It's the same thing with health care.

So fact one is we spend a lot more. Fact two is overall it's been worth it. Fact three is the distributional consequences have been very bad. So the other fact, the reason people say US health care is bad is you'll hear facts like we are the most expensive-- by the way, 18% plus, we are on average about a third relative to what you'd expect based on our income. Richer countries spend more on health care. It is a luxury good. As your income goes up, you spend more of your income on improving your health. It's a luxury good. The income elasticity is greater than 1.

So richer countries do spend a higher share of the GDP on health care. But if you draw a line, we're way off that line. We spend about a third more than you'd expect. Or the other way to put it is, relative to other countries at our income level, we spend about a third more than you expect. And if you look at overall outcomes, despite the fact that I just told you about how we're healthier overall since 1950, today our outcomes on international standards are terrible. We are about 16th in the world in infant mortality. On any measure of health outcomes, we look terrible than other countries.

So we spend a third more than we predict based on our income. We have outcomes in international comparison that are terrible. Well, how is that consistent with the facts I just said that's worth it? It's consistent because the outcomes that we point to are driven by the bottom of our society, which is not true in other countries. A white baby born in America today has the same chance of seeing their first birthday as a white baby born in Europe. A Black baby born in America today has a lower chance than a Black baby born in Barbados, OK? And we talked in the inequality lecture about those neighborhoods three miles apart, Freddie Gray's neighborhood versus the rich neighborhood, a 17-year differential life expectancy.

The bad outcomes in the US are not relevant for the people in this room. For the people in this room, the US is where you want to be for health care in terms of outcomes. What's the way economists would test that? What would prove that for those who are in the system, the US is the best place to be? Well, every year about one million people come to America to get medical care. No one leaves. They might go to Canada to get cheaper drugs. But no one's flying to France for surgery. They fly to America.

Once again, that's how economists think about testing hypotheses. We look at the data. The real preference is for those who are in the system we have the best health care in the world. The reason our outcomes are so terrible off to other countries is we have tail outcomes other countries don't have. And that's about access and equity. So the bottom line where we stand today in a system that's expensive, that delivers to those in the system as good outcomes as other places but is highly inequitable.

Last point, I did say a white baby born America today has the same chance of seeing their first birthday as one born in Europe, but not a 50% better chance even though we spend 50% more in health care. So while we spend 18% and it's been worth it, we still may waste a lot. The fact that it's worth that 18% doesn't mean we couldn't have equally good outcomes at 12% or 13%. It doesn't mean we're on the efficient frontier. It doesn't mean we're using health care efficiently. In other words, there were so many good opportunities to improve health that even though we might be wasting money, we're still better off spending it.

And that's the key point. Remember, one lesson from this course, is let's avoid extreme thinking. If you have something that's wasteful it doesn't mean it wasn't worth doing. You've got to compare the benefits and the costs. We are probably-- and I'll come back to this-- relative to the efficient frontier, wasting a lot of money. We could produce the same health care outcomes in the US for a lot less money. That doesn't mean we're worse off today than we used to be. It just means we could be even better, OK? Questions about any of that.

Now, what I want to do then is focus on two topics today. The first topic is the fairness topic, and that revolves around insurance coverage. So I want to talk about the fact that the US is the only developed nation in the world without universal coverage by insurance and what we're doing about it. The second topic is, what do we do about the fact that we spend much more in health care than other countries that have or at least comparable outcomes to ours? So let's talk about the first topic.

The US is the only country in the world where citizens face the risk of being uninsured. So I want you to cast your mind back to when you were little kids, before 2010, OK, before the Affordable Care Act. The way the US looked in 2009 was about 60% of Americans had employer-sponsored insurance. They had insurance through their employer, like I have through MIT.

About 20% of Americans had public insurance, OK? That's insurance through two programs, Medicare-- Medicare, which is universal coverage for the elderly. So we do have universal coverage once you turn 65-- and Medicaid, which is health insurers coverage for the poor. So we had public coverage entitlement, but only if you were poor or elderly.

The other 20%, OK? Why? Because remember what I talked about insurance market equilibrium. When I talked about insurance market equilibrium I said, given adverse selection, several things can happen, OK? And the thing that is going to happen-- now, I don't know what they're going to do with that on the video. They bleep my swears-- I guess they're going to have to like-- sorry, I'll erase that because I'm going to be in trouble on the video.

[LAUGHTER]

They'll have to white it out or something. So I'll have you know, proudly, I'm the most bleeped professor at MIT, at least who has videos online. So we have a situation, whereas the other 20% of people, the insurance market is broken. If you work for a big employer, the insurance market works. Remember, we learned in our insurance lecture, people want to be insured. That's optimal. They want to smooth their consumption across states. If you work for a big employer like MIT, it works. MIT offers me insurance. They offer the insurance at basically a pretty fair rate given the health risk of people at MIT. And I buy it, and MIT subsidizes it for me to help me buy it.

Public insurance is typically free or low cost. For everyone else, if you wanted insurance, you have to walk into insurance company and say, I want insurance. They're like, whoa, why do you want insurance? You must be sick if you want insurance. I'm going to test the wazoo out of you, deny if you're at all sick. If you're not sick, I'll offer you insurance. But if you get sick, I'm going to drop you.

So essentially, there was no insurance. Essentially, the rest of this 20% of the population had no access to insurance. And we know that's a huge market failure. We know that people are much worse off uninsured than insured. We had about 50 million Americans, about the majority of this number were uninsured. And about another 4% to 5% of Americans were-- about 15% of Americans were uninsured. About 4% to 5% of Americans were buying insurance because they were the healthy ones who could get in the market and buy it.

So what did we propose to do about this? What we proposed to do was first proposed here, so by Governor Mitt Romney, a Republican, and then eventually picked up by President Obama, a Democrat, was to propose what I call a three-legged stool solution to this problem. I actually wrote a comic book to explain this-- it's called a graphic novel, but it's a comic book-- ambitiously entitled *Health Care Reform.* It's like $9 on Amazon. And to try to explain this, I think a graphic image is about how we think about this law. And I think it's a three-legged stool.

Leg one is to say, insurers, you can no longer discriminate. Anyone of a given age-- you can charge old people more than young people, within reason, and you can charge people in an expensive area more than a less expensive area, within reason. But for a given age and a given area, if I come in coughing and hacking and sick, you cannot charge me more than someone who comes in running-- having run in and looks healthy, OK? You can no longer discriminate. You can't charge women more than men for health insurance, which they did. You can't charge sick people more than healthy people for health insurance, OK?

But we realized that alone would not work. And in fact, we had evidence why that wouldn't work because in 1997, states, including Massachusetts, tried to do that. They passed laws which said, for those-- we'll leave these people alone. But for those remaining of people, the people have to buy in what we call the nongroup market, the people have to buy in the nongroup market, for those people, we are going to say insurers can't discriminate.

What do you think happened? So think of yourself as an insurer. You're the guy, like I set you up selling insurance to MIT students. You suffer a massive adverse selection or that risk. And I tell you, you can't discriminate. What do you do? You quit. You say, well, forget it. The market's going to fail. If you're going to tell me I can't discriminate, I'm not going to make money because I know I'm going to get selected against. So I'm just going to beg.

And that's what happened. The insurance markets collapsed in all these states, which is you can't regulatorily enforce a pooling equilibrium by just saying you should have to charge everyone the same. That doesn't work if only the sick buy. So the market collapsed. So that's why I realized we need the second leg of the stool. And by we I do actually mean we. I worked with Governor Romney on this and helped design this program. We realized we need a second leg of the stool, which was a mandate that individuals buy health insurance, which was to say, look, if we're going to tell insurers they have to charge the pooling price, then we got to enforce the pool. And the way you enforce the pool is a mandate.

So an individual-- it's called an individual mandate, a requirement that people buy health insurance, or they have to pay a big fine, OK? So that was the second leg of the stool to say we're going to have a fair prices. Insurers were able to offer a pooling price because they know what the average price is going to be because everyone's going to buy.

But that laid a third problem. In 2004 when we were writing this law, the average family health insurance plan was $12,000. And the US poverty line, the family plan-- and the US poverty line for a family of four was about $18,000. You can't mandate a family pay 2/3 of their income for health insurance. That's both infeasible and bad politics.

So we need the third leg of the stool, which was subsidies. We need to make health insurance affordable for the lower income groups. So the pool was the three legs of the stool were no discrimination, or what we call in health insurance terms community rating, which means you have to charge everyone the same thing, that matched with the mandate was the second leg matched with subsidies, OK, to basically make it affordable.

So essentially, the idea was, by doing all three things at once, you make health insurance affordable for low-income people. We set up a program called Commonwealth Care. Remember, I talked about the poverty line in our lecture on inequality. We said anyone who lived below three times the poverty line, we would heavily subsidize their health insurance to make it affordable.

Then we said, we're making it affordable. We're going to make you buy it. We're not making it free. You make it affordable. We set up what's called a sliding income scale. You had to pay a certain percent of your income to get health insurance. We have a sliding income scale. We're going to make it affordable. We're going to make everyone buy it and make insurers offer insurance with no discrimination, offer community rating. And we passed that law in 2005, OK?

What happened? 2000-- God, now my dates are bad. Was it 2006? I don't remember. I'm getting old. Anyway, 2005, 2006, I don't remember. What happened was an enormous success. Now, you won't find anyone more biased than me on this topic, but I think it's hard to argue it was anything but a success.

How would you measure success? First of all, was it popular? Yes, it never had below 60% public support. Second of all, did it achieve its goals? What were its two goals? The first goal was covering uninsured people. The Massachusetts uninsurance rate fell by 2/3, bringing the uninsurance rate to 3% in Massachusetts, which is as low as many countries in Europe. That was a success. The third element was did it fix the broken nongroup market, the market we'd broken by just trying to do this alone? We tried to do this alone first and broke the market. And the answer is, it did fix it. Many new insurers came in. Prices came down 50%.

So what you had at the end of the day after this was a state where anyone, regardless of health, could get fairly-priced health insurance, subsidized if they couldn't afford it. So this was viewed as a huge success, let me say, on the right and the left, OK, if I can delve into politics a little bit because I'm personally-- personally upset about this. This was a law signed by a Republican governor. The speaker at the event where they signed it, the main speaker on the podium was a conservative, someone from a conservative think tank. This was viewed as a victory for individual responsibility. Conservatives praise individual responsibility. We're going to make people take responsibility for their own health care by having this individual mandate.

And indeed, it was so successful that many other states wanted to replicate it. Probably my favorite experience on this was getting to work in California. Now, as a child of '80s action movies, getting to work personally with Governor Schwarzenegger was pretty cool. Indeed, in the ante room before you meet him, he has the sword from *Conan the Barbarian.* So I got to hold-- I have a picture holding the sword from*Conan,* which was really cool. And Schwarzenegger really does-- he says we must cover all the uninsured in California. It really sounds like that. And that was very cool.

And I worked with California, among other states, and we'd get almost to the finish line. And then every time they'd say, wait a second, how are we going to pay for this? This is really expensive. In Massachusetts, it turned out we had a cheat, which is we were already spending a lot of money on the uninsured. We could just rededicate. Other states didn't have that benefit. So every state when they got to the finish line were like, yeah, it sounds good. In theory, we can't afford it. And they stopped. And we realized that if you're going to do this nationally, there had to be a national source of financing. And that's what led President Obama to propose the Affordable Care Act.

The Affordable Care Act was basically the Massachusetts law with three more zeros. It's basically the Massachusetts law at the federal level. What does the Affordable Care Act do? It imposes community rating and insurance. It mandated individuals to have health insurance. And it set up subsidies to make that health insurance affordable, in particular, subsidized in two ways. One is it expanded the Medicaid program. The Medicaid program used to be only for very, very poor people, people living below like a quarter of the poverty line, super poor people. Now it was available to everyone up to 133% of the poverty line, so like $30,000 for a family. Still poor, but many more people.

And we set up subsidies, like in Massachusetts, for those who were above 133% of the poverty line but below four times the poverty line. So it was a three-tier system. If you're below 133% of the poverty line, insurance is free. From 133 to four times the poverty line, we're going to subsidize insurance on a sliding scale. And then above four times the poverty line, you're on your own.

But we did one other thing, which we set up exchanges so people could easily find and shop for insurance. So they could go into the exchange. We set up these exchanges. People could easily find and shop for their insurance using these subsidies to buy health insurance. And that's basically what the Affordable Care Act did.

Now, let's talk about the Affordable Care Act. On policy front, it was an enormous success. Within several years of-- the law was passed in 2010, implemented in 2014. By 2016, we'd covered about 20 million Americans with health insurance coverage, OK, which was-- and we had fixed discrimination. There was no longer discrimination in insurance markets.

I cannot emphasize this enough. People do not talk about this enough when they talk about the Affordable Care Act. They talk about its effects on costs or coverage. They don't talk about the most important part of the Affordable Care Act, which is the US is no longer a nation where you can be denied insurance because you're sick. It's no longer a nation where women get charged more for insurance than men. And these are critical change. Every other nation in the world has this principle. No other nation in the world allowed insurers to discriminate the way we did. And that ended.

So on policy grounds, enormous success. Politically, massive failure. Why? Why a massive failure? Well, books have been written and will continue to be written on this. I think a couple of interesting lessons. One lesson is-- we don't talk in this class about political economy, which is the study of how voters make their decisions and how politicians make their decisions. But if you go back to these numbers, the idea of both the Massachusetts Bill and the Affordable Care Act was, look, for 80% of people, the system is working. Let's leave them alone. Let's focus on the 20% it's not working for.

In Massachusetts, that worked great because 80% said, hey, look, I don't care when you're helping uninsured people. Great, I'll support it. Nationally, we had the problem that there were many people out there saying this law was terrible. And the 80% said, wait a second. Maybe it is terrible. It's not doing anything for me. So maybe this law isn't so great. So the conversation was changed in a way it wasn't in Massachusetts.

So essentially, by leaving 80% of the people alone, the theory was, gee, they'll at worst be neutral, at best be supportive because we're doing good things. We missed the fact that they were up to being persuaded. And they're easily persuaded because of these important numbers. If you pass a law in 2010 and don't implement until 2014, you give four years to people who don't like the law to talk about how terrible it is with nothing to point to.

So for four years, people said this is going to be a disaster. It's destroying the US economy, da, da, da. And all the supporters says, well, wait, after 2014 things will be better. But by then opinions had hardened. So it's interesting lessons, politics. What's the economics of this? The economics of this is that basically that in some sense, when thinking about optimal policy design, politics is another constraint that we can't just as economists and policy advisors say, well, I studied 1401.

Here's the optimal policy. We have to recognize that optimal policy is constrained by what politicians want to do and voters want, and that's OK. That just means that when you optimize, there's another constraint on optimization, which is recognizing that you need to think about the real-world political consequences of decisions you make, like delaying four years to have the law take effect, or like doing nothing for these 80% of the public, et cetera.

Now, a funny thing happened. In 2016-- well, not a funny thing happened. First, in 2016, partly as a result of this, the Republicans took over both the presidency and both houses of the Congress. And their number one policy platform was repealing the Affordable Care Act. And so we pretty much figured, all the supporters figured, well, it's been a good run, but it's over now. But then a funny thing happened. By the time 2017 rolled around, the law had been in place for years and people were like, gee, this law isn't so bad. We kind of like it. We don't want it to go away. And so actual repeal never happened.

In fact, in 2017, support went above water, went above 50% for the first time. And the law was not repealed and now will not be repealed. Candidate Trump has talked recently about wanting to repeal the law again. It's going to be politically very challenging because it's now popular. It's now a popular piece of legislation. It's now embedded into our system. It's an interesting lesson here in some behavioral economics as applied to political economy, which is we talked about loss aversion and the endowment effect.

Another version of the endowment effect is what's called status quo bias, which is once a law is in place, it is harder to take it away than it is to implement it in the first place. So one of the main criticisms you heard of the Affordable Care Act is, oh, it's socialized medicine. And those same critics would say it should be more like Medicare. Well, Medicare is socialized medicine. Medicare is government-provided health care for the elderly. It's a government system. And one of the most famous moments in the Affordable Care Act is people holding up a sign saying, keep the government's hands off my Medicare, which is ironic because it's a government program.

But it's embedded. It's in our endowment. It's in the status quo, so we kind of like it. So it does speak to how behavioral economics matters in real-world political decisions as well. That's what I want to say. Just last thing on coverage, obviously, there's still about on the order of 25 million uninsured Americans, maybe 30 million uninsured Americans. We still do not have universal coverage. We've cut the number almost in half with the Affordable Care Act, which is great. But it's still much too large. The question is, what next? And that becomes the debate that your generation will have to engage in, which is how do we take it all the way to getting everyone insured, OK? So that's what I say about insurance coverage. Questions about that.

All right, now let's talk about the other big topic. Let's talk about health care costs. By most estimates-- this is imprecise-- by most estimates, about a third of what we spend on health care in the US does not actually improve health, which is consistent with the notion that we spend a third more than other countries at our income level, OK? About a third of what we spend in health care is not actually health-improving. So what is going on?

What's going on is that there is no market that exists in history, which is as rife with market failures as health care. Every market failure we learn about in this class is central to health care. Let's go through them. What's the first market failure we learned about market power and monopoly? Well, talk about market power, what defeats market power is the ability to shop. When you're in the back of an ambulance having had a heart attack, you're not a very good shopper. There's no shopping in health. Information is incredibly bad. Transaction costs are huge. There are very few competitive pressures in the health care market, leading to massive market power.

Some of the market power is geographical, OK? If you have a heart attack on Nantucket, there is one hospital on Nantucket. You're done. Talk about ultimate market power. Some of it is not geographic, but reputational. Boston has probably the highest density of hospital beds per capita of anywhere. You cannot fall down without hitting a hospital, OK?

Yet, when David Ortiz was shot in the Dominican Republic and flown to America for treatment-- because remember, we do have the best health care if you're in the system-- did he go to the official hospital of the Red Sox, Beth Israel, one of the nation's top-rated hospitals? No, he went to MGH, which is slightly higher in the nation's rankings and paid considerably more, OK? There's also reputational monopolies. Monopolies don't have to be purely natural. They can come for other reasons, which is people always want the very best hospital, and that gives market power to the very best hospital in Boston, which is MGH, Mass General Hospital.

So basically, first market failure, massive market power. Second market failure, information imperfections. We talked about the imperfect information in insurance markets. What is the imperfect information in medical markets? I go to the doctor. They tell me what tests I need. How do I know if they're right? How do I know whether that's-- whether I need that test or not? How do I know whether I need the treatment? There's enormous information asymmetries in health care.

Third market failure we talked about, externalities. Health care is a classic externality. If I don't have health insurance and I get sick and I come and cough on you, you get sick. That is a classic negative externality. Or more realistically, if I'm uninsured, there's a law in America called EMTALA, which says emergency rooms must treat everyone who shows up regardless of their insurance coverage.

So when uninsured people go to the hospital, they have to get treated. How does that get paid for? By the hospital charging more to their insured patients. That's an externality. So every market failure we talked about is rife in health care. You would never find a market, which is less well-suited to the classic analysis we did in the first half of this class. And yet, unlike the rest of the world, we allow the free market to determine many of our outcomes in health care settings. And in particular, there is a fundamental difference from the rest of the world in the US. We're the only country in the world that does not regulate our health care prices.

Let's go back to the monopoly analysis. We talked about how with monopoly you have a situation where you can improve outcomes through regulation. Not necessarily. You can go too far. But basically, there's a deadweight loss from underproduction, and regulation can improve outcomes. We talked about information asymmetries. We talked about regulations like mandates and subsidies can improve outcomes. Externalities, we talked about corrective taxation. When there's market failures, you need government involvement. And the US--

Now to be clear, let me be very clear. The US does not have a purely private health care system. Literally, if you look at US health care spending, 50% is government, and 50% is private. We're a very mixed system. The difference from-- and other countries are mixed too. Every other country also has some public and some private spending. The difference is other countries regulate the private sector in a way we don't. Other countries set the prices that doctors and hospitals and drugs can charge. And the US does not.

And that is the fundamental-- I think, where health economists now are, that is the fundamental difference, the fundamental challenge that we face. It's a challenge that leads to a number of problems. The first problem is we know in the monopoly case prices will be too high. The first problem, prices are just too high. Price too high, we spend too much money. So for example, for a typical drug or procedure, we pay two to three times what they pay in Europe, OK? An MRI in a Boston hospital is $1,500. In Japan is $75. We have massive differences. That's the first problem.

The second problem is more subtle, but it's important that we think about market design, thinking about more sophisticated models of markets than we cover in this class, which is when you have imperfect information, and so when selling goods and buying the good, there will emerge a class of middlemen which will help negotiate between the informed seller and the uninformed buyer of the good, which in principle is good. They can help squeeze the rents out. The problem is, in practice, a whole extra layer of expenses you add in America you don't have in other countries.

The bottom line is we spend a lot more simply because we do not regulate prices, OK? And the answer is really easy. We just need to regulate price. We do what the rest of the world does. They regulate prices. The problem is the politics. And it's, once again, the status quo bias. It's one thing to set up a new system with regulated prices. It's another thing to take an existing system and regulate the prices. And the reason, as the famous health economist Uwe Reinhart once said, is that health care costs are also health care income. And when you cut costs, you're often cutting someone's income. And that person will get politically involved to stop you.

So let me give a classic, depressing example. Some drugs we buy at the pharmacy. Some drugs are injected. Those injected drugs are at the doctor's office. Those injected drugs are reimbursed by Medicare for elderly with a specific rule, which is when the doctor gets you with those drugs, the doctor's reimbursed. Besides the cost of drugs, the doctor's effort is reimbursed at 7.5% of the cost of the drug. Think about what that means. That means if I give Andrew a shot that costs $100, I get $7.50. If I give Andrew a shot that cost $1,000, same effort, same risk of carpal tunnels, OK, I get $75.

That makes no sense. Remember? We should reward marginal cost. We should set the marginal benefits of the marginal cost. Well, here the marginal benefit of my giving the more expensive shot is way higher. My marginal cost is the same. That makes no sense. So 20 senators wrote a letter to President Obama shortly after he entered office saying, this system is broken, we need to fix it. And President Obama then developed a proposal to fix it. He said, no, we should pay doctors the fixed amount. It's a fixed amount of effort, so it should be a fixed reimbursement. Makes sense. Every economist in the world said that was sensible, OK?

Shortly after he made that proposal, 80 senators, including almost all of the original 20, wrote a letter to him saying, how dare you propose such a radical and destructive reform to the US health care system? You'll destroy the US health care system with such a proposal. What happened? Well, the guys who give the $1,000 shots are called oncologists. They're cancer doctors. They lobbied. They got to their congressmen and said, look, we want to keep getting $75 for $1,000 shot. We'll make up some bullshit reason why it's a bad idea. And you'll advocate for us because we contribute to your campaigns. And they did, and the proposal was killed. We're still paying this broken way, OK?

That's the difficulty that the status quo bias. So while status quo bias in some sense was my friend, as a fan of the Affordable Care Act and preserving the Affordable Care Act, as someone who wants to ultimately rationally regulate health care prices, it's an enemy. It makes it hard to go forward. So what do you do? Well, it's very hard, and I don't really know the answer. This is really, in some sense, the struggle of your generation.

Let me be clear. This 18% number we can afford. We can afford to spend 18% on health care in the US. The projections by the end of the century, this number is 40%. We cannot afford that. Something has to give. We are going to have to take steps. The burden on-- I like to say there's only two things in the world that really matter for the long run, which is global warming and health care costs because either way you're underwater. We cannot, as a nation, afford to spend 40% of our health care spending-- 40% of our GDP on health care. Something's going to have to give.

So how do you do this? Well, the first step, the first ba-- the first victory has already been struck, which is that the place where people are most interested in regulating prices in drugs, pharmaceutical sector. Why are they most interested in regulating pharmaceutical prices? Well, the theory most people give is because they're the most transparent prices in the health care sector. You don't know-- when you get surgery, you have no idea what the doctors get and what the hospitals get. When you buy a drug, you see the price of the drug. So that transparency in the enormous high prices make people upset, and that's why they come at it.

I have another theory. My theory is that people are mad at the drug companies because their ads. Now, you kids are a little bit younger than my kids but grew up in a similar era. Did you ever ask your parents as my kids did, what's viagra? And why is that guy throwing that ball through the tire over and over again, OK? I got pissed. I was like, why are they putting this stuff on TV?

Indeed, I have a friend-- true story. He's a pediatrician in Lexington, where I live. And he said a nine-year-old come into his office and say, I'd like to talk to you about Cialis, which is an erectile dysfunction drug, for those who don't know. And the pediatrician said, why? And he said, well, it's said on TV. Talk to your doctor about Cialis.

[LAUGHTER]

OK? I think people are mad at the drug companies. The prices are high. And so, in the recently passed Inflation Reduction Act, for the first time in our nation's history, we came in and regulated drug prices on a very small set-- 10 drugs, 10 of the thousands we take. It was an incremental step, but it was a step forward. So maybe that's a good sign that we can move forward to this. By the way, editorializing, many economists would not agree with my position on this, OK? But I think that that's a step forward.

Now, why would other economists not agree with me? What is the best counterargument against regulating prices? Well, there's two. The first is the government will screw it up. And that's an absolutely valid argument. Remember, we talked about monopoly price regulation. If the government set the price too low it was worse than not regulating it at all. Totally valid point. We can debate that all day.

There's a second point, which is less valid, which is it will kill innovation. And here's how the argument goes. The US has the highest drug prices in the world. We also do the most drug R&D in the world. Indeed, a huge share of all the R&D done in America is pharmaceutical R&D. It's the largest source of manufacturing R&D in America is pharmaceutical. Where do they get the money from that R&D from the excessive prices they get for their drugs?

So the argument was if we regulate drug prices, pharmaceutical companies will no longer innovate and deliver the incredible drugs that are amazing, miraculous, OK? The drugs we have are miraculous now, OK? Look no further than the COVID vaccine to see the miracle that we get from drug development.

That argument is, in theory right, in practice very misleading. And why is that? And once again, I want to think about how we apply what we learn in this class. Think about that. So you can see the argument, which is monopoly profits. The rents monopolists earn have a different effect because remember I showed you an externality. We underinvest in R&D, right? We underinvest in R&D.

So it's a totally economic legitimate argument that the costs of the distortion from monopolists making too much money is worth it because we subsidize R&D. That's a positive externality. The externalities could cancel. The market failure of monopolists getting too much money could be canceled by the positive externality of producing more R&D. People, see? So that's just a classic externalities argument.

What it misses is R&D consists of two parts. The basic science and applying the science. And in fact, the basic science is not paid for by the drug companies. It's paid for by the government. And it turns out the rate of return innovation to basic science is incredibly high. So here's a super cool empirical study done here at MIT. Give you an example of the kind of empirical work economists do.

They looked at NIH grants that got funded and get funded, that were very similar, got funded and didn't get funded. And they followed on and found what happened. And what they found is that NIH funding, funding from the National Institute of Health for basic science, is incredibly productive in causing innovation. And by their estimates, if we regulated drug prices and took that money and gave it to the government to fund basic science, we'd be way better off.

In other words, the notion that you in some sense have to give monopoly profits to fund R&D is not right. You can fund R&D with public dollars, and you raise a lot of public dollars by regulating those drug prices. This is an argument-- if you want to see this fleshed out much more in my book *Jumpstarting America* with Simon Johnson, we talk about how public R&D is an incredibly important part of the American growth story. And these are places where it could play out.

So that is a very rapid overview of the US health care system. If you want to learn more, there's lots of resources. You want to learn about the ACA, you can read my comic book. If you want to learn more about health care, you can take my class, 1441. I spend about four lectures on this topic. We don't currently have a health economics class, unfortunately, at MIT. We may have one eventually. But there's lots of resources you can look at to learn more. And this, as I said, is the key public-- this and global climate change are the two key public policy issues facing your generation going forward.

OK. Stop there. New material. Here's the good news. OK-- hate to say it now-- nothing I taught you today is on the exam, OK? This is all for "fun," in quotes, OK? So I hope you enjoyed learning that for pure learning's sake.

OK, last thing I want to say, which is what I hope you got out of this course. What I hope you got out of this course was learning how to think like an economist. I hope I inspired you to take more economics. That's awesome. Even if I didn't, I hope that you will take from this course the ability to think like an economist, the ability to think critically about the important problems and to recognize that everything has an opportunity cost. Everything has a trade-off. Nothing is easy, OK? Everything requires thought. Everything requires some subtlety in trying to figure it out, OK? And we've given you the tools to do that, OK?

We've given you the tools to always think about the marginal cost and marginal benefits of different decisions. We've given you the tools to think about where markets work and where they don't, and to use those tools in everyday life. And the best way I think we can do this is with a joke. And the joke-- which quite frankly, could be told about engineering as well as economics, but I like economics-- is about the priest, the doctor, and the economist who go golfing.

They go golfing, and they get on the golf course. And they're behind one guy golfing alone, which is already unusual. What's more unusual is he's awful. He takes about 30 shots per hole. And what's even more unusual is he won't let the people behind him play through. Good golfers are supposed to-- if you're much worse than the people in front of you, you're suppose to let the people behind you play through. He wouldn't let them.

So after nine holes, the queue behind this guy is like 100 people. These guys are so pissed they just quit. They go back to the clubhouse. They're so mad. They're pounding their fists like, what an asshole. Why did he not let us play through? Someone comes up to him and says, you must be new at the club here. And they said, yes, we are. And they said, well, I can tell you're new because if you weren't new, you'd know the guy who's playing ahead of you was blind.

And actually, it's pretty amazing he can get the ball in the hole at all. And you should be pretty upset at yourself that you would criticize this guy who's actually a pretty amazing golfer, given that he's blind. He walks away, and there's a hushed silence. And the doctor goes like, I feel terrible. I can't believe-- I'm someone who's supposed to heal the sick. And here I am insulting the sick. I'm going to dedicate a wing of my hospital to the blind.

And the priest goes, you feel terrible? I feel terrible. I'm supposed to be giving comfort to the ill and the sick, and here I'm insulting the man? I'm going to have a free soup kitchen for the blind. And they go to the economist, and the economist says, well, if he's blind, why doesn't he golf at night?

[LAUGHTER]

Which points out that the role of economists is to be a pain in the ass, OK, is to actually ask the difficult questions, point out the challenges, and to really think through the trade-offs that are inherent in every decision we make in life. And I hope you'll take that with you. I hope it will inspire you to take more economics. And thank you very much for coming to class.

[APPLAUSE]