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**Keywords**

Good question value price more income average income high income minimum income own income only income low income threshold good average value entire income future income own good income change high value threshold value only good

**Transcript**

Speaker 1 00:00  
I don't know if you're anything else, but I have a question. So I don't know if I can.  
  
Speaker 2 00:05  
Yeah, let's get started and let's and proceed otherwise, but it's fine with me.  
  
Speaker 1 00:12  
Okay, perfect. Thank you so much. Okay, so basically I was trying to understand the slides of class 5. Okay, particular question regarding the default with contingent assets in the part of tags, because actually I don't really understand like what is p zero. I try to read a book and I understood that it's like something constant that you subtract from the consumption. And yeah, basically that's what I understood. So I cannot like, yeah, yeah.  
  
Speaker 2 00:43  
So what I propose, I can share the slide on my screen. Maybe that would makes it things easier.  
  
Speaker 1 00:49  
Okay, perfect. Thank you so much, p.  
  
Speaker 2 00:54  
Yeah, so he should see that. So with the contingent assets, that was later. Okay, you have a particular size in mind or.  
  
Speaker 1 01:08  
Yeah, I would say 2424 and 2530 is the one with the graphs. Okay, that one.  
  
Speaker 2 01:18  
So I mean, so you don't understand what is P0 in is about or?  
  
Speaker 1 01:29  
Yeah, I think it's hard for me like to ask a very a specific question, but I would say that I don't really understand what is P0 and how we determine it and how, like, what are the following steps in order to like much these equations with the graphs are in the next slide.  
  
Speaker 2 01:45  
So the issues are, let me make right pixel when there was no issue of default. So if we write a contract and we're sure that we're going to be okay, whoever has to pay with pay. Yeah, then which was the first part, the previous slide, then the P0 was not there. Why was that? Because it's the payment that either from the consumer who the insurer in case you have a high income or the other way around. Remember that the lender of the insurer can click either way is a risk neutral. And on average, they want unexpected terms. They want a payment and issue.  
  
Speaker 2 02:34  
Now you could think of it as an insurer, as an outside option. It could be an interest rate that it can get on another asset. For simplicity, we say that this is the to say is zero. So the insurers say, look, as long as I'm on average breaking even, I'm okay. So when in that case, what we would.  
  
Speaker 1 02:55  
Do is.  
  
Speaker 2 02:57  
That we say to ensure that we take the stock. Testing part of the output. And this is your payment or what you pay. Yeah, so the insurers will face risk, but that's okay. That's is risk neutral. So it doesn't really care.  
  
Speaker 2 03:14  
And we say given that we only have the epsilon again, you know, we don't have the P0 in the case without default, sure say, okay, what is on average my payoff is the expectation of this epsilon, which is zero. I'm okay. The consumer in that case will get the consumption would be constant at what?  
  
Speaker 2 03:35  
Remember that why is the expected income? Okay, so the small count 3 as an income, which is of expected value y, but the actual income is y plus minus epsilon.  
  
Speaker 2 03:50  
And this absolute effect, so the optimal contract, if there is no issue of default, say that, well, we have a risk averse person, which is a consumer, and we have a risk neutral person who is insured. What we should do is take the risk and have it own the person that is risk neutral because for them is the risk is irrelevant. By contrast, the consumer bearing risk averse for them risk discussed. So in any insurance contract, what you want to do is put the risk on the person who doesn't mind or minus relativeness.  
  
Speaker 2 04:25  
Now that's what this consumer looks like. You tell the consumer no matter what happens, you get your average income and whatever deviation from that, if you have an income that's actually higher than that, the difference you give to the insurer. If your income is lower, the insurer will pay you. Okay? So that's how you get the full insurance without default.  
  
Speaker 1 04:47  
Is that clear? Or.  
  
Speaker 2 04:53  
Is it up? So without default, there is no P0. Basically, the problem when we say we bring default, we say, wait, if the I if the income one is the income that the country get is very high, the country may be tempted to say, well, I can find income in contract says I have to give some to the insurer, but I don't want. Now of course, if the incomes accounts we get is low, the country is not gonna tell the insurance, please don't pay the behind. And in a visit Assumption we may hear is that the insurer itself would not default. If the insurer is reliable, the country may not.  
  
Speaker 2 05:38  
So that's, but from, at the nature of the problem, it's to say when we have states where income is very high, then in that state, the country wants, wants the one want to pay. So do they determine the optimal contract and. Maybe not, maybe here.  
  
Speaker 2 06:00  
Let me jump a bit to the graph. Don't worry about the lines yet. Just to say that on the horizontal axis, we have this epsilon. So zero is the income is at its average value. If we are to the left, default is not gonna be a problem. If anything, the country is very happy to be paid when default is a problem.  
  
Speaker 2 06:21  
Is we on the right? Cuz that's when the income you make is quite high. So there will be an issue that there, if you want to. So the idea in approaching the solution is to say we should have a situation where towards the left, so low value of either is no default may become an issue for high value of it. So we want to think about these two regions separately. Let's just say as a general step. Now, how, what does this mean specifically?  
  
Speaker 1 06:55  
Requirements are, yeah, you have a question?  
  
Speaker 2 07:00  
Okay, good. So what I'm gonna do here, say we start with low income. So I'm gonna start thinking on the left part of the chart, the, the, that means that the FCR is below some threshold. This threshold will have to calculate. Even I know that when to the left there should be no default. We are happy to be paid. And then, and so if we're happy to be paid from the contract, if that there is insurance in that region, there is insurance. But the thing is there may not be full insurance that mean that you full insurance would mean your consumption is always equal to some value. Why he was saying, well, you couldn't be insured. We're going to smooth consumption but at a lower value. Now why would that, why do we think that's going to be the case? Well, this is okay as you don't have to default. So this is a case where you're gonna have to pay premium as a tour. So I will assure you, but bear in mind that services other region where there is a problem case, notice that case that because there is a problem in that other region, the towards the right of the chart, as an insurer, I will always write a contract. So it's not my problem that on average I get zero. So ultimately, the problem is on the country. And given that there is a region you have a where you have a problem, this form has a cost that we also see in the region, the lab. So that's why we take the state. There's gonna be some easy work. Do we going to ensure consumption? But let's at such a great level.  
  
Speaker 2 08:48  
Okay, now, what is that value of p zero? We still have something that we need to compute. So if we say no, I show you what my. Zero. Well then basically why is payment to the insurer is y minus consumption and and so it's I income and remember income is y plus epsilon. So we take the income, we remove consumption, and we get the pain. In other words, what you have is always P+C is equal to y perception, which you can check when you just take the sum of these two things. So we tell to ensure that you going to bear the risk as you normally do, but it's gonna be an extra. And why is that? Because neutral, when there is a default state, maybe a state where we will get little, so we have to be compensated.  
  
Speaker 2 09:46  
So at this stage in the first line, the idea is just to say either region to the left where there is insurance, what does the payoff look like? And they basically looks like an insurance. So it looks very similar to the case of low frictions, except that we have this P0, this fixed amount that the insurers say, look, in that region, on average, I have to make a positive, I have to have this. Yes, which will have to determine what happened in the other region. That's a high income. That's why the country has an incentive to default.  
  
Speaker 2 10:22  
Okay? And so there is a constraint. And remember what the constraint is. The constraint is saying like, if I tell I default, you can still get some of my income. And that's distraction, ETA, misleadu.  
  
Speaker 2 10:36  
And here, so as an insurer, what are you gonna say? And you, you know, you never ask me to pay more, but what you can get a by force, so to speak. Okay, so if you have to tell me, look, in that state, you owe me 10 and say, well, look, if I tell you, if I send an exact state as tell you, never mind, I know that you can only get eight. So as an insurer, we say you will never ask me to pay 10 knowing that if you do so, I would say yes. And when the day comes, I say never mind. So there's no point of asking for a payment that is beyond what you can actually get because then you ensure the country will differ. So there is this limit how much you can get as an insurer has to be at most wet, you can go and seize. Otherwise the country will just default. That what is the point of writing contract when you know it won't be respected. So that's you wasting your time in schedule. So are we gonna write contracts such that we know that if the state happens, the contract is actually met. Okay, so there is, you know, the word no default if the contract has to be lenient enough on me that I choose never to walk away.  
  
Speaker 2 11:55  
Now what does this mean is you cannot ask me to pay you more in the contract. And what you can. Can actually get on your own, so that's why you have the payment that is there given by this constraint. Okay. And that actually is gonna be the as a P during the nanty for what you have here is the insurer said, okay, what I get is whatever I could get on my own by going in this country and grabbing the resources. Then that's. So the constraint is binding. And what I get as a concern consumer is just a rest. So in fact, if you that region, the region on the right is actually the one that a bit easier to solve because you have a constraint that gives you the solution there. But we say give the right account. This is a region where as a country, I will pay the insurance. So, you know, the contract is gonna be such that are we paying why they would get anyway, and then I get the rest.  
  
Speaker 2 12:59  
So this is what the two regions look like. We still have to do two things. The first thing is to serve for the threshold. And the second thing for this p 0. And so how do we do that? Well, we know that when we are at the threshold value, but we basically are the junctions of these two regions. So it should be that if epsilon is just a little bit below the threshold, we will have the top expressions here. If epsilon is just a little bit above the threshold, we would have the expression here in the middle. So at the threshold, okay, we never say epsilon is equal to the threshold. Well, then the two have to be equal, right? So you have basically a junction. So in you see that on the chart, this is a payment. So what you see that you have two different lines on the threshold. And what this is, when we get at the limit to line me that's higher, that's the condition we use. These two lines are actually as a junction. You can actually show that it's optimal not to have a discrete jump there. That would be a bit too tricky. So I say, well, I know one thing at when I am at the threshold. Okay, Zappy Epsilon, which in the middle, that's also the payment under the right part has to be equal to the payment under the letter. And so what this does is it tells me what is this P0 I need for this to be true. So the way I get P0 is basically the fixed part of the contract under insurance, such that where we are just at the border of the two regions, the payments is the same, not this one thing that's not a food solution yet. Because in there I still have this value of the threshold, which I have to solve for. Yeah, so the solution, the first step again is to say. Okay, let's look what happens when the, the, we are just at the limit of the two regions, which means that pe, the first row is equal to the one in the bottom. Or you can do, by the way, the same computation from the consumption side, saying y minus P0 should be equal to 1 minus ETA times y plus the threshold. It's give you exactly the same solution.  
  
Speaker 2 15:26  
So this tells us, okay, give me the threshold and I know what this fixed element would be. Now, how do we get that threshold? And here with we say, remember that the expected payoff to the insurer has to be zero. So we say we know what the payoff looks like on the left part, we know what it looks like on the right part, we know we can rewrite this P0 as a function of the threshold. So what we do is we simply compute the expectation. So we take an integral, not the threshold. So the threshold look, the function of payment looks like something like first you have a steep line, you have a threshold. So what we do is say, let's take the integral of this. You see, you, we first have negative values and we have positive values. So the surf the negative surface as to be equal to the positive surface. And this gives us what the threshold should be to the threshold, the E comes from the zero profit condition of the lender.  
  
Speaker 2 16:37  
Takes a bit of a computation. It's a uniform distribution, so takes a bit of a computation. But here is the threshold. And what you see, and then we say, oh, the threshold is above the lowest possible value of the shop. Okay, which means as there is some insurance, there is a region. When you have address short, when you have insurance provided, the ETA is positive. So the, what ensures, what makes that you can ensure in some region is because when things go wrong, you can actually group grab something on your own adassist, Adams.  
  
Speaker 2 17:16  
If I were to tell the lander, look, if the borer tells you to walk away mad, you get nothing. And so the Landosa, but then there's never a state where I get anything. So I'm not gonna go in this contract and I'm not gonna assure you because all I can do is looks. So mathematics cases is how you solve this thing.  
  
Speaker 2 17:37  
Now, what is the intuition behind all that? And here what is useful is this job on the left part. What you see is the slope of the Blue line is very steep. In fact, it's a 45 degree. Yeah, perfect. So what you have is for whatever move. Movement of the shock.  
  
Speaker 2 18:01  
It's just, you know, if it is minus 1 instead of minus 2, so you have a movement of 1 unit. The vertical movement is also 1 unit. Yeah, mathematically, that's what you see here that the derivative of P epsilon visa vpsilon is 1. So that means that the steep line admit that all the violation around the income is absorbed in the payment. In other words, when you look at consumption, that means consumption is constant. Yeah, that's what you have here.  
  
Speaker 2 18:33  
Now, when you get to the right part, say we hold on here, that's a region where the country may want not to pay. So the maximum that landoc can get is whatever they can sees. But that's a fraction of, you know, so if in that region epsilon moves, the derivative of the payoff visa Vpsilon is not one anymore. It's smaller than one, it's atom. And that's why you see that the blue line becomes flatter.  
  
Speaker 2 19:06  
Okay, see what it means as well when there is a threat of con country walking away or you willing to ensure if you the marginal insurance you're willing to give, it's not the full insurance, it's only what you could get on your own anyway. So you only insured for what you can get without the agreement of the company, okay? And that's why this line is flatter.  
  
Speaker 2 19:31  
Of course, when the blue line is flatter, that means that the consumption starts moving up. Because if I say, okay, we're gonna write a contract here. So if you get one more unit of income, ammonia, I'm gonna ask you to pay me half of it. So the other half goes to you. And that means for more income, more consumption. And so what I hear, what you can see, look at the blue line, that the very right is a flashlight. So the lander, I said, look, there's a bit of a problem here. Could it be that this blue line goes through zero? Where have my concern? The answer is no. Why? Because on the left you will have a big triangle negative. On the right, you'd have first triangle and then flatter. So the surface on the right would be smaller than the surface on the lake, IE the lender, the insurer would lose money on average. And I say there's no way I can, I'm going to do that. So what I'm going to want is to move the line, the blue line up. So when the shock is zero, the blue line is not zero, it's a bit above. Why? And this ensures that the surface on the right and between the horizontal axis and the blue line is the same as the surface on the left. And again, the fact that the blue line on the left is always very steep, whereas on the right there is a flat set.  
  
Speaker 2 21:00  
Man means that if you want the same surfaces, you have to push up the line. If you go, if you draw the line to zero, the negative triangle on the left will be larger than the positive semi triangle, should I say. So that's why you get a PCO that is positive. Okay, because once you go very bad, the insurance pays a lot. When things goes very good, the insurance doesn't get so much. You get data. So you want the insurance is fine.  
  
Speaker 2 21:28  
But for me to enter that deal where, which, where my payoff is asymmetric, it has to be that my payoff is pushed up. So on average, and the fact that you have the blue line going above zero means that pay mirror the green line of consumption is below y bar. So that explain why you need now a constant.  
  
Speaker 2 21:50  
Again, they would say, but the key reason he is at an, when do you have the blue line, the margin of. So it's like, I tell you, let's share risk. If since if my income change, you pay a full change. But I say if I tell you, look, when my income change, when it's positive, your sensitivity, your exposure to that with the same that my income is low, that would be the case without default, then you say, okay, so on average, I'm good. And I don't ask you a fixed aspect. But if I tell you a look, when things go wrong, your exposure is actually bigger. So you're more sensitive to wrong use, meaning the left part of the blue line is high and you are relatively less sensitive to the good news. The right part of the blue line is flatter. That means you're really exposed to the bad news and not so much to the good news. Your actions say, well, then what I want is to, this is to be compensated. Okay? If I don't get so much of the upside, but I get all the downside, it has to be that when the middle actually get a little bit. But Johnny, otherwise, if the line was going to zero, say you're giving me all the downside full force, you're giving me only part of an . Sure. That's why you need to have this. The fact that the blue line is about that and the reason P0 is there is because this blue line is asymmetric. Does us clarify a problem?  
  
Speaker 1 23:34  
Yeah, thank you so much. It was very useful. Thank you. Okay, sure. Okay.  
  
Speaker 2 23:39  
So stop the sharing, save.  
  
Speaker 1 23:43  
Next question. Could I ask a question? Yeah, okay, perfect. I think it's quite short, but I was just wondering if you could walk through the solvency equation from.  
  
Speaker 2 23:59  
Lecture 2 in. It's speaking at.  
  
Speaker 1 24:01  
One of the final slides. Yeah, and you still read me some function, which I didn't sort of mean.  
  
Speaker 2 24:07  
Do you have the number of.  
  
Speaker 1 24:08  
Slides? Good question. I think it's a, it's from slides 27 to 31.  
  
Speaker 2 24:20  
Okay, so let's, but let me share. Okay, so is there a particular a point that wasn't clear or.  
  
Speaker 1 24:37  
Well, I think just the intuition of the relationship between the assets and the growth rate wasn't particularly.  
  
Speaker 2 24:48  
That's the 2 moon that goes straight. Where did I put there?  
  
Speaker 1 24:51  
No, see, in the group. Sorry, I don't have a spec.  
  
Speaker 2 25:01  
Okay. Okay. So it's also, again, we see the, we say what is the threshold good we solve. And basically, so, so if or as a position is above this special no, not this is a minus sign. So of course, if the asset is positive, there's no problem, right? We always solvent. If we actually start with someone in our pocket, the issue is like, oh, we may start with a debt and a debt is a P that is negative if this debts is bigger than the present value of the over trade shops. So imagine that's if you were a household, you trade surfers would be like you wage and you say, was the present value of my wage for its 10,000. If I have a debts of 8,000, okay, I have enough to pay it except a debt of 12,000, no way. It's more than my lifetime income. So before wardrobe, such. So solvency requires that your debt is not too big. So B is above, in my example, minus 10,000, that will be the stop.  
  
Speaker 2 26:15  
Now if you say, well, if it's a manifest energy could be that I could actually afford not to consume at all. That mean that we just look at. So present, that would be it. So here the IDS they were wrong on, but there would there could be limit to consumption. And if there is a limit to consumption, that means that you say, well, my wage, my net present value of wage is 10,000, but look, I get a E. So really all I can spare would be like 8,000 because I need 2,000 for my basic living expenses. So that's what's this cost in the first. So the first size. So when we go to spending and investment, anyway, you could think. For simplicity lesson of this share as you it is output can be used only for consumption. And we. So, okay, no, the question you say, well, what is the threshold is if there is a limit of consumption. So the most I can give you payback is if I consume the basics. Okay, so the idea is to compute the the lowest possible the highest possible income I could give you, which is in other word, mirroring the lowest possible consumption I will have. If my minimum consumption is zero, then it's easier. I can pledge all my income to you and that's the limit of it.  
  
Speaker 2 27:42  
So the floor is proportional. Cuz at time t, this is really a rational time. This is not all the time. At time t, we have this proportion, but this proportion may vary through time because what we say looks a minimum threshold rose, but this growth rate is not the output growth rate. So what you have is the out, your output will grow at 4%. Say your minimum consumption would grow, maybe it won't grow at all or it would grow at less than 4%. So that means that is, if you look at t plus 1, t plus 2, the ratio of the two, this side would actually set the change. And so once you put this and you say, okay, let me put consumption as the lowest possible value and then you put to the present value computation, you get the minimum debt, assuming that you have the transversity condition and you get this relation here. No, what you love is when you go it with CDT, where is the limit of that? And this value depends on whether your consumption is follow you, if your minimum consumption is following growth, or whether your minimum consumption goes stored. So there will be following roasted rose. The meaning my heart is always equivalent of 10% of my ink because I get, as I get more income, my needs also go. All you could say, will my knee go up and not as fast as it. So that would be GC, Min, Azure, vendor groups.  
  
Speaker 2 29:30  
How does this translate into your threshold? So if we say my minimum income is a, my minimum consumption is going quite low, what this mean is as we look far in the future, my minimum consumption compared to our income will go to zero. Because if my incoming, even maybe now my minimum consumption is 20% of my income, but that my income grows by four. 4% a year, my minimum consumption by, let's say, 1% a year. So these two things are gonna do with support takes.  
  
Speaker 2 30:07  
So if this is the case, and the why do we converge in this economy? This is an economy that after a while, let's say, I nearly can pledge my own income to you. Got what I really need that is I is go tiny. And if that's the case, what I basically do is the threshold, the biggest debt conversions ratio. What it means, it's basically my, in the norm future, all my income goes to payment. I can pledge dear a death. That is nearly all of my future income. Oh, why? Because I have a minimum consumption, but it's gonna go down. It's gonna become very minimal in a few years. So it doesn't change the computation. And if that's the case, you're in a very corner situation.  
  
Speaker 2 31:00  
Say, well, now I get my income and give it all to you and basically I survive on water and fresh air, something realistic or not. That's not the point here. And so basically, all you all you export, yeah, put in fact, you can see that if so it was a zero, it would export the entire route. You basically, you know, become a subsidiary of the other country.  
  
Speaker 2 31:27  
Now, if you have the case where your minimum consumption grows like GDP, and this is a bit fair, for instance, think of how poverty ratios are built. Open poverty ratio express. Okay, this is 25% of the median income. Okay, so what you have in country where the median income grows, the poverty threshold also grows. The ID is, that's the meaning you have is also related to what other people consumer that would be the situation here. Then basically this ratio of minimum to output is constant. So there's no point of thinking what about for in the future? Because for in the future will be exactly like today more. And so once you do that speyo step, you can compute the minimum income count and the current account already tells you the highest debts you can sustain is such that all the income that you don't need for your basic consumption goes to the other. Okay, and what is this? And again, let's say that government spending is zero.  
  
Speaker 2 32:36  
So this side term is gone. What is a, if you take your entire income, remove the product you have to eat and all that goes, so you basically, you don't survive just on fresh water and air. You survive maybe on pasta, water, nail, something like this. So you consume something anymore, but as that give you the highest possible. So the two are similar. Seller in a way that you say the highest you can sustain is pay is when I push you to the limit. Okay, I if I push your consumption lower down, then everything beyond that to give away. And then that means that you can sustain is high debt.  
  
Speaker 2 33:17  
The only difference is that when minimum consumption and income track each other, okay, so you don't have to think about some dynamics. You can basically take the situation of today and project it to be constant. Whereas if you minimum consumption tends to fall behind you income, then there is kind of a transition phase and you ultimately get in your situation or 100% of your income, but it's never really. Thirty hundred percent. So we'd be more something like 99 point 99 goes to the payoff and that gives you the hiring. But one thing to notice, it is a purely accounting statement. Okay, so this is what you could do. I haven't talked at all about any optimization. I didn't tell you about the utility. So whether you will actually choose to get such a big debt, oh, that's another question. Okay. Even if I tell you, look, you could borrow, you present that your income be, it's gonna grow, but you need really, you can survive on 10% of your income. So you could take a big debt so that you in the end spend 90% of your income paying it. You could, do you want to? That's another story. Then you'd have to bring an optimization on top of that, do an error condition, etc. So this is just that. This is really a discussion about budget constraints. It's not about an optimization that clarify things.  
  
Speaker 1 34:44  
And very much that's really, yeah, that's very useful. Thank you. Yep, Sarah, I had a doubt in Chapter 3, in Lecture 3, from slides 22 to.  
  
Speaker 2 34:58  
20. Okay, let me just that we will help. Okay, which side you.  
  
Speaker 1 35:05  
Set a slide 22 to 28.  
  
Speaker 2 35:08  
Okay, nice. Okay, consumption application, maybe a share. Okay, so, oh, okay. So that is the setting where we have the constant elasticity of substitution here. And the idea that we first allocate this of, without thinking of any dynamics, okay, if we have a given consumption, how do we allocate it? Positive. Okay, and so what we have is this in term.  
  
Speaker 2 35:43  
So what you do basically is as you needed the problem set, you minimize expenditure. So pH MCH+ PF MCF, you minimize the cost of this such set. This index is up to a target value. Doing this optimization, give you the demand.  
  
Speaker 2 36:04  
And essentially what it says is any goods you consume first in proportion to your total consumption. If I consume more of every, of overall, when I would consume more of each item, every single sequel, it's in proportion of the weights of these goods in your basket, because it thedized is a weight.  
  
Speaker 2 36:24  
So if this is goods made at all, Mrs. Goods made of broth, if I'm really a fan of Rio cheese and I cannot, I sometimes have a bit of cream. Maybe that's really a common, my Theta would be very harsh. So that's what that's often called domestic bias. That tells you I put a higher weight on traded goods that are made at home. So, and of course, you see that in the team. And finally, what you have is the relative, so the price of the foreign is normalized to 1. Okay, that's what you have a 1 here, qtos at the price of the whole good.  
  
Speaker 2 37:04  
So what it says, if my own good is expensive, so if this ratio in the bracket is high, my demand moves away from it. And that's why you have this minus exponent.  
  
Speaker 2 37:16  
Now the one over V is the elasticity of the steamer. And what does d mean? If a V is very high, what the hobbies is good. They're very similar. So a very high means as one of a V is very small. So I'm not sensitive to the price, which means I've used as good a fundamentary and you say, look, breeze, very cheap, thank you. But it's just not the same thing.  
  
Speaker 2 37:47  
And once you have these demands here, you take these two expression and plug them in the basket, the consumption, the C will cancel out. And what you end up is with an expression for the price index. And the price index is basically an average. Remember the price of the phone is one. So it is here, basically. So it's an average of the price of the two goods. Now this average is a bit special because it has its exponent. So why is that it not simply, for instance, a geometric average? Because this average is a true cost of living. And what this means, it does take account of the fact that if one could become very expensive, you shift your consumption basket.  
  
Speaker 2 38:32  
So say that I consume two goods, okay, and let me, let's say she doesn't want. Yeah, as you know, I'm, but I'm about to go and come on my dinner soon. But let's say you have the and so half and they say all the cost of wine is double. Okay. And say, so like you may say, oh, well, you need half one at top cost of the first hundred percent. So your total cost. So eating hasn't gone 50%. Actually, it gone by less. Why? Because yes, wine is decrease, but as a wine becomes expensive, I will shift my mix towards more cheese. I shift towards cheaper good. So actually my cost of living will not increase by as much. In other words, in term of the price index, the weight of this goods will actually move. Yes, my expenditure, my consumption is not anymore half, half. It's actually, it's gonna be something like point eight, point two. Okay, now the fact that I move away from the expensive good means that my true cost of living, it's a dampened. And that what this expression reflects often when you have consumer price index is the data, they do not adjust for that. Okay, so you have, if an asset price index is something where you take initial weights and then you look what is the cost of your basket if you keep this weights constant. And so that's why this pricing next year is slightly different. By the way, if you just linearize it, you can forget about all that I say it is, if you take a linear approximation, ignores this reallocation because the linear approximation will look at the impact on prices at the steady state weights. But if you go more general than that, this expression is actually taking account of the fact that you rebalance your construction basket. Let's see what we, so then we do the in total port choice. So that's a, the standard owner condition liquidity. Do you want me to go over that again or. Oh, yeah, a particular point that was not clear.  
  
Speaker 1 40:45  
Just the second point, the output of domestic credit good is an environment only the equation for the two equations.  
  
Speaker 2 40:53  
Here. Okay, so, so. So what we have, yeah, so in income is a down. Okay, so I'm not gonna talk about any production function now. Of course, my end, the only good that I have is the one I produce. Yeah, so if I'm a winemaker, I have to buy my cheese from abroad. So my only income, my endowment is only, that's a y, H. Okay, so it has a value price of Q1 in my example would be the price of wine. And it's a price of wine relative to the price of cheese. So it is my terms of trade is a cheese value of my wine and darmen, if you want, which I can consume or invest. And the bond is a cheap bond. Okay, so it's, you know, we need cheese. That's why there's a price of one. And tomorrow I will get a return on that phone. And my endowment tomorrow is, again, an endowment of just wine. I don't get an endowment in wine and cheese. Your cheese is a good from abroad. So the endowment is important in mind now that we have two goods. Redundant is only one good, not the two when we had traded and untraded, you had a dominant in both goods. Yes, there you. But you could train one of them here. Basically, the, by definition, the foreign good is foreign. It's not you producing. You could have situation where you say, okay, most of my endowment is in wine, but I have a bit of endowment on cheese. And for the other country, it's the opposite. And working through the whole, the message would be similar. So you could have a, you know, the tool, as long as they are symmetric, you get yourself.  
  
Speaker 2 42:38  
Yeah, then do I have the earlier so gonna exist and as usual, the earlier when you have many goods, I'll answer your books to a basket of goods. Always bear in mind when you write a real interest rate, real, but in which good, in a cruise economy, you have one good. So we always, we all, that's obvious. In an open economy, watch out because there's several goods. So you have be careful when you write a real interest rate, it's real in which unit. And so never for, always careful not to forget the relative price. Somewhere there were the points. Is there anything else clear about this slide or cuz I mean, I was up to live in like 10,15 minutes, so I want to leave also room for question if there are here. Yeah, okay, good.  
  
Speaker 2 43:46  
So there are no other question. I think these are the points if you want.  
  
Speaker 1 44:02  
I think it's very clear for now. So there's, oh, no question on my side at least.  
  
Speaker 2 44:08  
Okay, then maybe that he also, it seems to be in mind for the exam. So there will be some short questions, some longer question where excellent thinking, 2,6 to bring in mind.  
  
Speaker 2 44:22  
First of all, you can write answer in bullet point 4. Okay. And all of this, I will say again, on the day of the examples, I understand it's two hours in short. So writing takes time and effort. So if, for instance, if you have to explain an earlier condition and you say all the recognition paid off, the marginal utility of consumption today versus the marginal TTF tomorrow. We adjust for patience interest rate night, if you want to say the creative or majority today, maternity tomorrow. I just for interest rate, take account of patience. Four bullet points, let's say. I, when I see that, okay, you have the point. I want to see. No need to write sentences. So feel free to write in a bit of a no telegraphic style. I don't expect, and often if you, if start writing a lot, it takes time and energy system. You don't have to think about the question. So my recommend, the first recommendation is right short. If it's bullet point and a bit like a telegraphy, that's fine. As long, you know, as a key is a key concept out there. Second point, don't feel like you have to go in the order of the questions, but what I recommend is to do a quick scan of the exam. And then you say, oh, here I, yeah, I see what he wants here. It's more. So start with easy ones. There may be question 4. Let's start with that. Because all you do at the beginning is stuff that is in your pocket. Okay? Be aware that if you say, oh yeah, that's it. Just, but I want to first look at this question I'm not so sure about because it's question one. Let me spend half an hour on that and say half hour comes the overnight nearly get it. So I do more and then you and end up spawning 50 minutes and you in a rush and you may not have enough time to answer the question for which you know the answer. And so that's a very unfortunate. Yeah, so start with the easier stuff and then believe you, the data believes the stuff that is less clear for the end. That's for very useful. And because often people go in the order one, the question 1 first, question 2 first. So some people it makes sense because you, you have you're clear on question 1, but for the others or question 1, you're not so sure, leave it for us. Fine.  
  
Speaker 1 46:43  
Okay. Thank you very much, Dana. Thank you so much. Noah, thank you so much, chair.  
  
Speaker 2 46:49  
Have a good weekends. Thank you. And let's see you on Wednesday. Meet.  
  
Speaker 1 46:53  
You. Oh, yeah. Bye. Bye five.