International Economics

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Module No. # 01

Lecture No. # 19

Good afternoon we have been discussing the asset market approach to balance of payment. It also comes with another name called the portfolio balance approach to balance of payment. Here, each house hold is assumed to be risk averse. So, the assets that he will hold are domestic and foreign bonds and the money. Unlike the monetary approach to the unlike in the monetary approach to balance of payment where you had assumed that each one of us is a risk neutral person. You had assumed that the domestic and the foreign bonds are perfectly substitutable.

But, here because you are risk averse you do not want to take risk. So, you want to hold all types of assets and there are three types of assets that you hold it is domestic bonds, the foreign bonds and the money, the idle money.

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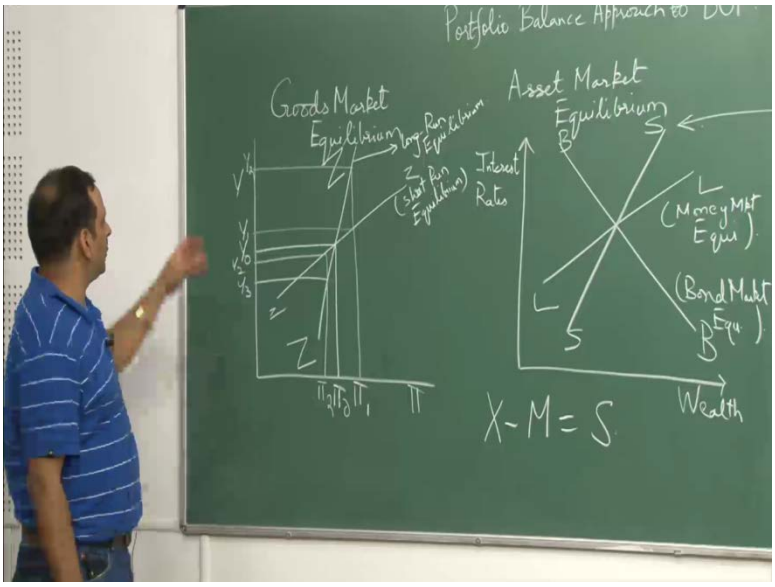

So, here you study the interdependence. There are more parameters here. There are certain set of assumptions which are little different from the monetary approach to balance of payments. And as in the monitory approach you have the short run and long run analysis. Same here also you analyze this under the short run and long run. So, if you look at the goods market equilibrium you have on the Y axis national income and you have on the X axis the exchange rates. Now, you have these two curves the small Z Z curve and the big Z Z curve.

Now, this big, the small Z Z curve shows different combinations of income and pi which will give you the short run equilibrium in the goods market. You also have a long run equilibrium which is depicted by the big Z Z curves. So, if you are here or the economy is here with incomes y 0 and exchange rates pi 0. If your currency depreciates or the foreign currency appreciates. Then this small Z Z curve shows that if your currency depreciates it would lead to an increase in incomes. Why?

Because depreciation of the currency improves the current account balance if the M L R condition holds. So, it improves the current account balance and the current account balance inturn leads to an increase in incomes. And when you have a current account balance you have positive savings because here like the monetary approach you have X minus M is equal to S. So, if you have a current account surplus you would have positive savings.

So, that is what happens in the short run. If you depreciate your currency you would see an improvement in current account balance because of the M L R condition and you have positive savings and because you have a current account balance. If you recall right at the first we had some equations where we said that income is a function of many right hand side variables. Do you recall D I A minus D S A we called it D A A plus D A G plus D N A. Remember that D N A term D X A minus D M A.

So, if there is an improvement in the current account balance we saw a direct impact on the incomes, incomes would go up and why because x minus m it is like an aggregate demand. If aggregate demand in the economy increases. So, it increases the income through the Keynesian multiplier.

So, that is what happens in the short run you depreciate. So, you see an increase in income. So, there is nothing new of what we were discussing say a month back. The only

difference is that here we have brought in savings because M X minus. If it is positive it would lead to positive savings and so, this is the short run they say it is a short run behaviour of the economy.

At that time we did not say anything about short run and long run. Till we discuss the monetary approach where we had short run and long run. In the long run any disequilibrium will be wiped out and the balance of payment disequilibrium will be wiped out that was monetary approach. Here this is the short run phenomenon. In the long run there is something else which happens the incomes increase beyond this y 1 level it reaches a level which is y 2.

Reason because in the long run it is defined as such where the savings becomes 0 the current account balance become 0, but the wealth rises the interest rates go down. So, each point on the Z Z curve shows that the savings are 0 current. There is 0 current account balance, but it shows different levels of w.

So, remember this is a point where you have savings to be positive and you have current account balance which is positive. And this is a point where each point shows that the saving should be 0 and current account balance should be 0. Now, that is possible only when the incomes go beyond this from y 1 to y 2 because higher the incomes, higher the imports any current account surplus is wiped out. So, current account surplus comes back to 0.

But, there has to be something else to bring savings to 0. So, with the rise in incomes further rise in incomes. So, wealth also has to go up and if the wealth goes up savings reduces. So, here when you talk of the long run you say that the wealth goes up, incomes go up savings come back to 0 you have a balance of payment equilibrium there is it is a long run equilibrium.

So, further then. So, each point on the Z Z curve shows the long run equilibrium savings are 0, current account balance is 0, but, wealth is different. What would have happened if your currency would have appreciated? Instead of pi 0 increases into pi 1 if foreign currencies price comes down or your currency appreciates. If it comes to this point then can you argue what will happen? What is the short run thing and what is the long run thing?

This is short run say y 2 long run is the point corresponding to Z Z it is y 3. Can you now argue it out why would the incomes fall beyond y 2 and it will reach y 3. What will happen if your currency appreciates? What will happen? Here what happened when your currency depreciated the current account balance moved into surplus and you have you had positive savings. When your currency depreciates what do you or sorry your when your currency appreciates or their currency depreciates because this is their currency depreciating, our currency appreciating. What do you think will happen to the current account balance? What will happen to the savings?

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You have a current account deficit and you have disserving and remember appreciation of the currency leads to decline in incomes. Because there is a current account deficit when there is a current account deficit it leads to lower incomes. That short run dissaving negative savings and current account deficit. So, then if you have to wipe out this dissaving, if you have to wipe out this current account deficit then what do you need to do? You have to further reduce the incomes because that will reduce your imports and bring back your current account deficit into equilibrium, but, there is negative savings also.

So, then the wealth has to go up or go down? The wealth has to go down because in that case only the savings would go up. So, that is what happens in the long run. Long run you are on the Z Z curve incomes will fall further wealth would come down, savings would be back to 0, current account deficit will be back to equilibrium. So, this is what happen in the goods market. Then I further said that because this is a relationship between incomes and the exchange rates. All other factors like the expenditure, the foreign expenditure done on our good that will have an impact on the Z Z and the big Z Z curves.

The changes in interest rates and wealth will have an impact on the small Z Z curves, but, not on the big Z Z curves why say start with the increase in foreign expenditure on our goods that is like increasing exports. What do you think will happen to the big Z Z curve, the small Z Z curve? Remember foreign expenditures on our good increases. So, incomes go up. So, if incomes have to go up the big, the small Z Z curve goes up. What about the big Z Z curve? It will also go up, but, for the different reasons. Why?

Because you have a current account surplus. If you have a current account surplus and if that has to be taken care of you need to increase your incomes because raising incomes would raise imports and it will take care of the current account surplus. So, please note it down that whenever there is an increase in foreign expenditures on our good both Z Z both Z Z curves the small Z Z and the big Z Z curves they shift upward. What happens if there is an increase in wealth? If there is an increase in wealth it leads to reduction in savings, consumption expenditure goes up. If consumption expenditure goes up through the Keynesian multiplier incomes go up.

So, what do you think will happen to the small Z Z curve? It will shift up. What happens if the interest rates go down? If the interest rates go down remember the savings, if interest rates go down the savings go down, the savings go down the consumption expenditure goes up. If the consumption expenditure goes up the incomes go up. So, you would see an upward shift of the small Z Z curve.

Changes in I and W does not have any impact on the big Z Z curve. Reason being that in the long run savings are 0, current accounts surplus or deficit is 0. There is no question of these changing in the long run and the W already it interchanges to bring about the final changes that is the savings are 0 and the current account balance is 0. So, there is no question of big Z Z changing when the interest rates and wealth changes. There is no shift of the z big Z Z curve. So, this was about the goods market equilibrium. That is what I was talking about yesterday. Then you had the asset market equilibrium.

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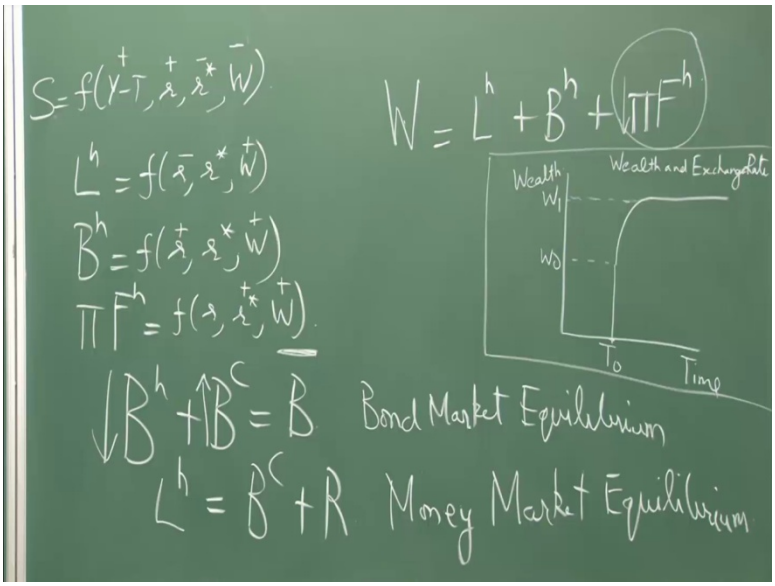

Where you had three markets, one was the bond market, the other was the money market and then there was the foreign bond market. And further I said that the if these two markets are in equilibrium by walrus law, the third market also has to be in equilibrium. So, it suffice to focus your attention to these markets only. And this is well depicted in this diagram looks complex, but it is not B B is the curve which shows different combinations of interest rates and wealth which would give you bond market equilibrium.

So, higher the wealth higher is the demand for the bonds. So, interest rates had needs to go down to bring back you demand back to equilibrium. That is why it is downward slope. Money market it shows different combinations of interest rates and wealth which will give you the money market equilibrium. Why it is upward sloping? Higher the wealth higher is the demand for money. If you have to bring back this higher demand back to normal you have to increase the interest rates because interest rates and money demand are inversely related.

So, that is why it is upward sloping. There is also something like an S S curve which shows this particular equation and it is like a long run depiction. So, higher the wealth more would less would be the savings. Higher the wealth less would be the savings. If you have to bring back savings to normal then interest rates need to rise. So, this is showing relationship between interest rates and wealth.

So, there is a curve which shows relationship between these two. So, anything which is not any variables which are not R and W will be the shift factors. So, then further we said what will happen to this L L curve if there is an increase in money supply? If there is an increase in money supply what do you think will happen to the L L curve if there is an increase in money supply?

So, something needs to be equated to bring back this money market equilibrium. So, money demand has to go up, if money demands has to go up something needs to reduce and that something which needs to be reduced is the interest rates. So, if the interest rates needs to go down. Then if you see an increase in money supply you would see that this L L curve will shift down and when do you see an increase in money supply? You see an increase in money supply if there are large open market purchases of bonds. If there are more open market purchases of bonds or if there is an increase in reserves it would lead to a right ward shift of the L L curve.

What about this bond market equilibrium? Now, if you see this if say open market purchases go up and this is fixed because there is a balance budget multiply there is a balance budget. The total bond supply is fix because you have fix taxes. Remember balance budget government expenditure is equal to taxes. So, this bonds supply is fixed.

So, now what happens is this goes up and if you have to have a bond market equilibrium this needs to go down. These are bonds demanded by the households. So, if this demand needs to go down the interest rate needs to go down. If interest rate needs go down the B B curve will shift downwards. So, this is what happens if you have open market purchases the B B curve shifts down, but remember when we were when you have open market purchases there is something which happens to the L L curve. It also shifts to the right.

So, this is the point that I did not mention yesterday. I just talked about the B B curve that it will shift down, but, I did not add that. At the same time when you had increase in open market purchasers the L L curve shifts to the right. So, this is what we discussed till yesterday and then I said that we will try to bring in some shocks we will bring in some shocks to the economy. And then we will see what happens to the goods market equilibrium and what happens to the asset market equilibrium?

So, that first shock is that the foreigners decide to spend more money on our good. They start liking our goods. So, there is an increase in foreign expenditure on our goods. What do you think will happen in the economy? What do you think will happen in the goods market? What do you think will happen in the asset market?

So, please have a look at the hand out that I have given because the figure looks little complex and I do not want to go to the bond to explain those looks complex, but, it is not. So, I am referring to page 463 of the canon and what is interesting about their approaches that they try to study the impact of this increase in foreign expenditures on our good in case of two regimes. One is the fix exchange rate regime; the other is the flexible exchange rate regime. So, if you look at this diagram it again it shows the goods market equilibrium and it shows the incomes on the y axis, the exchange rate on the x axis. And then they have host of curves Z Z and the big Z Z.

So, remember what happen when you increase foreign expenditures on our good? Both curves Z Z and the big Z Z curve will shift upwards. Why? Because remember when they start spending on more on your goods, your aggregate demand increases, your exports increases. So, your incomes go up. So, the Z Z curve shifts up. The big Z Z curve shifts up because it would lead to current account surplus. If current account surplus has to be managed then you need to raise the incomes because increasing incomes would lead to increase in imports. So, the big Z Z curve also shifts.

Now, what is interesting is that the income and we are talking of the fixed exchange rate. Remember this is the first case where you are taking of fix exchange rate, exchange rate remains at pi 0. What is interesting is that the incomes do not rise to a level of y 1dash. What is y 1 dash? y 1 dash is that level of income where the big Z Z curve which is z dash z dash intersects the small Z Z curve called Z Z double prime z double prime. It incomes do not straight away go to from y 0 to y 1 dash.

They first go from y 0 to y 1 why because in the short run when you see an increase in expenditures incomes go up. There is a current account surplus there a positive savings. Long run point is E 1 dash, but, your incomes only reach to a level which is y 1. Something more has to happen, something more has to happen in the long run. So, that you reach a point like E 1 dash.

So, you are at E 1, but, if you have to reach E 1dash something more has to happen. That something more is that there is a further increase in incomes to take care of the current account surplus. That something more is that the wealth also has to go up because if you increase the wealth, the savings have to come down. So, higher incomes would take care of the current account surplus, higher wealth will take care of the savings which had become positive.

So, finally, you reach a point in the goods market as y 1 dash where the Z Z curve shifts up, further up and reaches the curve reaches z double prime z double prime. So, this is what happens in the goods market. What about the asset markets? Now, remember in the short run you had a current account surplus and if it was a fixed exchange rate regime you know what will happen. The central bank would gain reserves, if the central bank gains reserves something will happen to the L L curve. Remember when you have increase money supply the L L curve shifts down. Why?

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Remember when you increase money supply something has to be equated to that increase money supply. That something is money demand and if you have to increase money demand the interest rates have to go down. So, in the asset market you will see that the L L curve shifts to the right depicting that in the short run you have increase in reserves. And then interest rates have to come down to take care of this increased money supply. So, the interest rates come down wealth goes up. Why does the wealth goes up? Because it has to care of that savings which had become positive because of the current account surplus.

So, then in the asset markets you will see an increase in wealth and a reduction in the interest rates. This is the case when you have a fixed exchange rate regimes. If it was a question of a flexible exchange rate regime something interesting happens. In the short run the behaviour is the same as what happened when you had a fix exchange rate regime. Your income goes up right to a level from y 0 to y 1, the savings are positive and you have a current account surplus.

But remember that this is a flexible exchange rate regime and if you have a current account surplus the exchange rate would change. Exchange rate would appreciate remember you have a current account surplus. So, exchange rate would appreciate. If

exchange rate would appreciate then it would have a negative impact on the incomes because when you depreciate you improve your current account balance. When you appreciate you the current account balance deteriorates. It has an impact on the incomes, incomes come down. If incomes come down you would see that in the long run you would see an appreciation of the exchange rate and no change in the income levels.

This is what happens in the goods market. What about the asset market? That is figure 18.8. If in the long run there is no question of changing of the current account surplus because it is the exchange rates which are moving. If there is no question of change in the savings in the long run then there is no question of change of the wealth. The wealth would be the same; interest rates would be the same. You would remain at a point which is a 0.

So, it is different when you had a fix exchange rate regime where the wealth increased interest declined. Here interest rate remains same, wealth remains same, but, what you need to understand is that why does the wealth remains the same because remember in the short run. What had happened was that because you saw an increase in foreign expenditures on your good, incomes had gone up. Then you saw current account surplus, positive savings and savings when you increase savings W also goes up in the short run.

Now, if have to explain it to you that W does not change when in case of flexible exchange rate. Something has to happen in wages, something needs to happen with the W. So, that it remains at the same level because remember in the short run savings had gone up. So, W needs to go up, but then I also say the W remains at W 0.

So, what other thing happens? Now, remember when your currency appreciates, when your currency appreciates their currency depreciates. If their currency depreciates please focus your attention on this term this goes down. So, see what happens to the wealth, wealth will go down. So, inherent in that thing when I say W remains the same. You say in the in the short run savings go up W goes up, but, then it leads to an appreciation of our currency or depreciation of their currency. So, a capital loss this is a capital loss on the value of the foreign bonds that you are having.

So, then the wealth comes down. So, if wealth comes down here it had gone up. Something is pulling up something pulling down. So, you see no changes in the wealth. So, that is why I say that in the in case of the flexible exchange rate W remains at W 0.

There is no change in the interest rates, wealth remains as it is. No question of any reserves falling or increasing because it is a flexible exchange rate. You remain your wealth remains at W 0 interest rates at R 0.

So, this is about the behaviour under a pegged and a flexible exchange rate when there is an increase in foreign expenditures. Tomorrow we will discuss a little more complicated case of an open market purchase of the domestic bonds. And if you recall the results that we got when we were discussing the monitory approach that if L m curve shifts to the right. If you have an increase in money supply and if it is a fixed exchange rate regime you would see that it is ineffective in rising incomes and employment because as the income goes up it leads to depreciation and if it is a fixed exchange rate regime you would lose reserves money supply will come down.

There is no question of raising incomes and employment if you have a fixed exchange rate regime and you want to increase the money supply. Money supply is ineffective in raising incomes and employment in case of fix exchange rate regime. And if you have perfect capital mobility this whole process speeds up. So, monetary policy is ineffective in raising incomes and employment if you have a fixed exchange rate regime.

A similar result will follow here when we discuss the portfolio balance approach, but, with a slight difference that there the money supply entirely came back. You first you saw in increase in money supply then the L M curve shifted back. Here you would see that the money supply increases, but, it will not come back to its original position.

So, there will be a slight increase in money supply. So, that is what we going to discuss it are a little complicated. So, I am going to devote more time tomorrow on this and then third shock will be that what happens if you devalue your currency? Remember what we did when we discuss the monetary approach and when you have a flexible exchange rate. If you have a flexible exchange rate money demand is equal to money supply. You would get pi as a function of the relative money supplies if you were discussing the monitory approach. Here also we will see what happens if you devalue your currency. That is what we are going to discuss in our next lecture.