International Economics

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Lecture No. # 07

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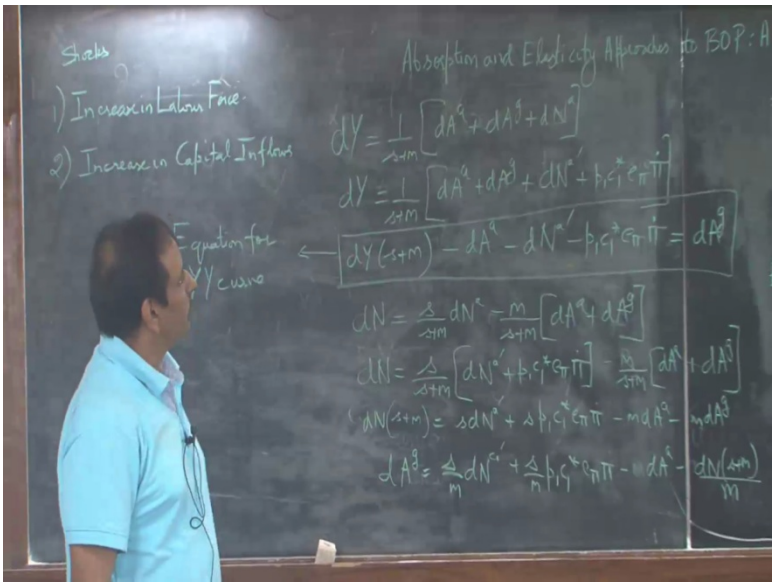

Good afternoon. So, we will carry on with what we have been discussing the absorption and the elasticity approaches to balance of payment a complimentary view .We worked on the equation relating the changes in income to autonomous changes in expenditure and autonomous change in net exports. And after discussing, the Marshall-Lerner, Robinson condition. Now this d N a term is further bifurcated into purely autonomous term which is d N a dash.

And a term which has the Marshall-Lerner, Robinson condition e 1 star plus e two minus one. Where e one star is the foreign import demand elasticity, e 2 is the home import demand elasticity and e 1 star plus e 2 minus 1 this e pi is greater than 0. That means, we are assuming that the Marshall-Lerner condition holds. So, if you work on this equation you get a relationship between the policy induced expenditures. And, the changes in exchange rates autonomous purely autonomous change in net exports, private changes in expenditures, and the changes in the target level of income. When I say target level of

income it is the income which is required to maintain the internal balance. This is the equation for the y curve here which is upward sloping.

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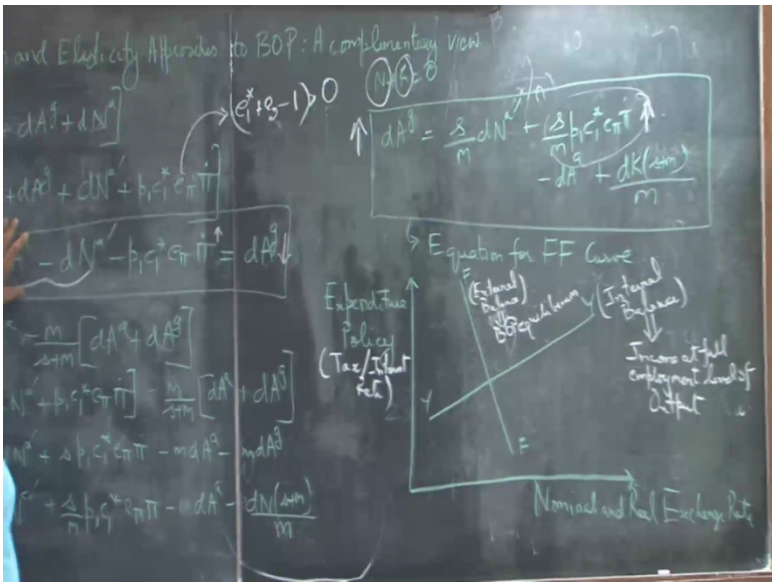

So, it shows different combinations of the expenditure policy and nominal and real exchange rates .There is no difference between nominal and real exchange rates, here because we have assumed prices to be a constant in home and foreign. So, expenditure policy is tax interest rates. So, as we move up in the y axis, you see an increase in tax rates and interest rates. It leads to more restrictive expenditure policies and if you move on the x axis on the right hand side, you see depreciation of the exchange rates.

Now, this shows that there is a direct relationship this y y curve shows different combinations of exchange rates. And tax rates or interest rates which will maintain internal balance; the internal balance is the income at the full employment level of output. So, say for example, if there is a depreciation of the currency you need reduction and policy induced expenditures to maintain internal balance. So, when I say reduction in policy induced expenditures, it means that the tax rate or interest rate should be raised to reduce the policy induced expenditures.

Now, the economic logic is that, if you devalue your currency there is a shift there is a shift of expenditures from foreign to domestic goods. And when there is shift from foreign to domestic goods, this leads to the changes in incomes. The incomes go up, now when the incomes go up; it goes beyond the income which corresponds to the full

employment level of output. So, the only way to bring it back to equilibrium is through reducing the policy induced expenditures. Or by raising the tax rates or interest rates. That is why you see an upward sloping y y curve.

If you see this equation, this equation has also the shift factors which are these. So, any changes in these will bring about shifts in the y y curve. Because the y y curve is a relationship between the expenditure policy and nominal and real exchange rates. All other factors are shift factors, if you work on the FF curve shows different combinations of expenditure policy and nominal, and real exchange rate which brings about external balance, External balances, when you have a balance of payment equilibrium when do you have a balance of payment equilibrium when the current account balance which is n is matched by the capital inflows.

So, n plus k is equal to zero or the some autonomous receipts is equal to the sum of autonomous payments. Then only you have a balance of payment equilibrium. So, you can see a relationship between policies induced expenditures and the exchange rate, if you devalue your currency; that means, there is a shift of expenditure from foreign to domestic goods. It leads to an improvement in the in the balance of payments. So, it leads to a surplus in balance of payments. Now if you have to curve the surplus in balance of payments, then you need to raise your policy induced expenditures.

And, you can raise your policy induced expenditures by reducing tax rates and interest rate. So, that is the reason that if you move to the right; that means, if you increase the exchange rates, you need to reduce the tax or the interest rates to achieve the external balance. As in the case of the y y curve, here all other terms, all other terms beat the capital inflows, beat the expenditures, the private expenditures, beat the purely autonomous change in net exports.

These are all shift factors; they will lead to a shift of the FF curve either upwards. If it moves upwards then it means that you adopt more restrictive expenditure policies, if it moves downwards you adopt less restrictive expenditure policies.

So, then we had discussed two shocks which happened in the economy, the first shock was the increase in expenditures. And then we saw that if you cutback you expenditures, you will bring back your economy back to equilibrium. So, by changing one instrument you can focus on your two targets. This and I and then I added a rider saying that this is

an exception. Otherwise the number of policy instrument should be at least as large as the number of policy targets then we also discussed a switch in expenditure from say domestic to foreign goods.

So, the only way that you can bring back your economy is to switch back that is from foreign, you switch back your expenditure from foreign to domestic goods. This is equivalent to saying that you depreciate your currency. This is this thing that you need to understand, when you depreciate your currency. You shift, you switch your expenditures from foreign to domestic goods. Remember, how remember the in your own country in your own country the price of imports in terms of domestic currency goes up.

So, if that happens you try to move out of imports and concentrate on your domestic production. Then another thing which happens is that your exports in terms of foreign currency, the price of exports in terms of foreign currency goes down. So, as that happens and if the law of demand holds, if the price of exports in terms of foreign currency goes down, then the demand for it goes up.

So, in both the cases you are shifting or switching your expenditures from foreign to domestic goods, because imports have become dearer. So, you start preferring your own goods and foreigners have start have started liking your own good. Because the prices have gone down. So, there is a reorientation you start focusing more on your own product.

So, in this case when you there was a shock in the sense that there was a switch in expenditure from domestic to foreign goods. The only way that you can bring the economy back to equilibrium, that is maintain both internal external balances to depreciate your currency. You switch your expenditures from foreign to domestic goods. And we saw shifting of both y y and the FF curves, and we saw that you depreciate your currency. You change one policy instrument you achieve two policy targets, this was an exception, again I added a rider saying that this as an exception.

So, this is what we covered in our last lecture. Today we are going to move beyond that we are going to discuss two more shocks which happen in the economy. One is the increase in labor force, and the other is the increase in capital flows. So, when there is an increase in labor force .Say if for example, India starts producing more of I T personnel,

skilled manpower increases in India, which we have seen over the years that the skilled manpower has gone up. How will it have an impact on the economy?

Now, looking at this equation this increase in labor force, increases this target level of income which is y t. It increases this target level of income, when I say target level of income; it is that level of income which is required for having full employment level of output. So, when this goes up this equation shows that d A g should go up if d A g has to go up then this y y curve has to shift down.

Because, you need to have less restrictive expenditure policy to maintain internal balance. And the logic is that, if you need to increase the target level of incomes, you need to reduce taxes or interest rates or adopt less restrictive expenditure policy, for achieving higher level of the targeted income, higher level of y's. So, as the y y curve shifts down you, see two things happening .One the, you need to reduce the tax and interest rates to maintain the internal balance, and the other is that you depreciate your currency to take care of the balance of payment disequilibrium which happens due to an increase in labor force.

Now this is different from the other the first two cases that we discussed, because here you are changing two instruments. One, expenditure policy, the other nominal and real exchange rate to achieve two policy targets. One is internal balance, the other is the external balance, and there is no shift in the FF curve as in the earlier cases. Because, If you see the second equation, it does not have this term d Y here.

So, this is what happens if there is an increase in labor force if you. So, the simple logic is that when the labor force increases, you need to increase the target level of income. The only way that you can do it, is to reduce interest rates, reduce the taxes. So, that the aggregate demand increases, incomes go up. (( )) Absolutely and it does. (( )).

So, we are looking it in this way that, when you do this, its tends to increase the imports. As the incomes go up you take care, you increase the imports. So, your balance of payment goes into a deficit and. So, if there is a deficit. So, that that deprecation of the currency takes care of that imbalance, which is created here. Why it is reflected in it is not reflected in the equations.

Because, whatever you are doing as a first policy change, is having a impact on the imports. So, you are saying that increase in incomes leads to increase in imports, which are leading to balance of payment deficit. So, you need to do something beyond increasing the expenditures. You also need to depreciate your currency. So, that the balance remains. So, this is when you increase the labor force.

What happens if there is an increase in capital inflows? What happens, if there is an increase in capital inflows? So, the first thing if this happens is you need to look at this equation, if capital flows goes up d A g should go up. The expenditures should go up. Now, what is the economic interpretation? What is the economic interpretation? That as the capital flows come in, the expenditures should go up, remember capital flows come in. So, there is a balance of payment surplus right and when the balance of payment surplus, then what happens?

Please think of, now you have to refer back to the concept deficit and surplus. So, there is n plus k is equal to 0. So, if the there is a capital inflow coming in and you have to add up n plus k is equal to 0. So, then what it means? That, the current account should have been deficit.

In deficit which has an impact on the incomes. Remember the current account deficit has something on the incomes; the incomes have to go down. So, the way to. So, see what is happening? The there is a balance of payment surplus. But, the net exports are going down, when the net exports go down it has an impact on the incomes. The incomes also go down. So, the way is to increase the expenditures to increase the income. So, that you have the internal balance.

And, when you have a balance of payment surplus, you know what you should do. If there is a balance of payment surplus; that means, if there is a the autonomous receipts of foreign exchange is greater than the autonomous payments. Then to take care of this, you need to appreciate your currency. Why because, you want to shift your expenditures from domestic to foreign goods. Then only surplus will be taken care, now all this what I have told can be seen by the shift of the y y curve.

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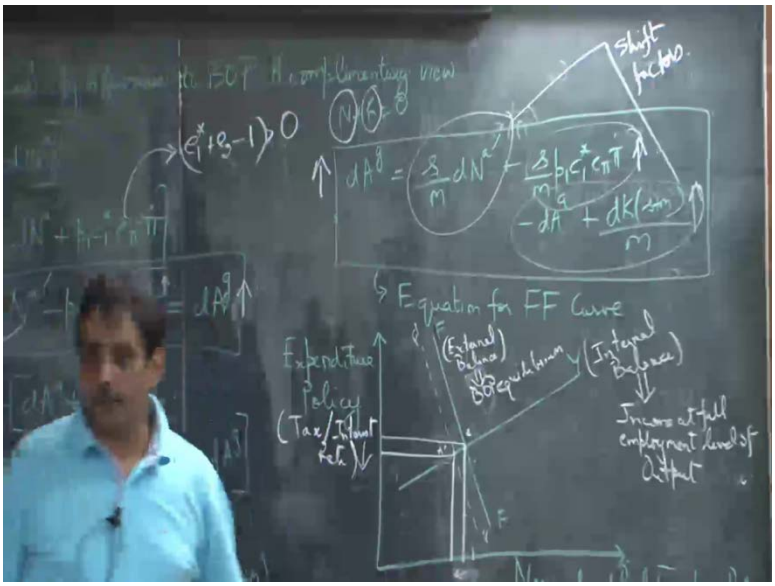

So, I am rubbing the shift of the FF curve, I am rubbing this. (No audio from 19:48 to 19:56). So, from here d k goes up, d A g has to go up. If d A g has to go up, then you need to reduce the tax and the interest rates. If you have to reduce the tax interest rates, this FF curve shifts down.

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Now, see what happens? You are reducing the tax and the or the interest rates for maintaining internal balance. And you are appreciating your currency to take care of the capital inflow which has come in poured in. So, you are using two policy instruments to maintain two policy targets. Expenditure policy for internal balance, exchange rates for the external balance.

Now in the exam I may ask you, say for an example, I may ask you what happens, if this purely autonomous change in exports this change. What happens to the FF curve? What happens to the y y curve? So, I may we have discussed the case ,when d N a dash goes up, I may ask you what happens if d N a dash goes down? Then, what changes would you see in the y y and the FF curves. I was do, I will ask you if what happens if this expenditure goes down? What happens to the y y curve? What happens to the FF curves? And then, I will ask you the economic interpretation?

So, what you need to do is to, when you get a question like this, you write the equations and then immediately work out that. If this changes, what will be the change in this policy induced expenditures? The second thing that you need to do is, to work out the economic interpretation. The third thing that you need to work out is, whether there will be a shift in only y y curve or only FF curve. And then, the fourth thing that you need to remember is that, the number of policy instruments should be at least as large as the number of policy targets. If by changing one instrument, you are you are achieving two policy targets, then it is a matter of exception, it is not a rule.

Now, let us shift to shift our attention to what professor Mundell, the Robert Mundell was concerned in the sixties. He was concerned about this problem, of this problem which he called as the assignment problem. It is a problem of paring instruments with policy targets; it is about choosing appropriate policy instruments for achieving policy targets. And his answer is called the effective, the rule of effective market classification. And, that rule says that you choose that particular instrument which has the greatest relative effect on that particular policy target. You choose that instrument which has the greatest effect on that particular policy target that is how you solve the assignment problem.

So, what I will do is, I will again use the FF and the y y curve to tell you, what is this assignment problem? And how do we solve the assignment problem the equations remain the same. So, I am going to rub this portion the derivation part.

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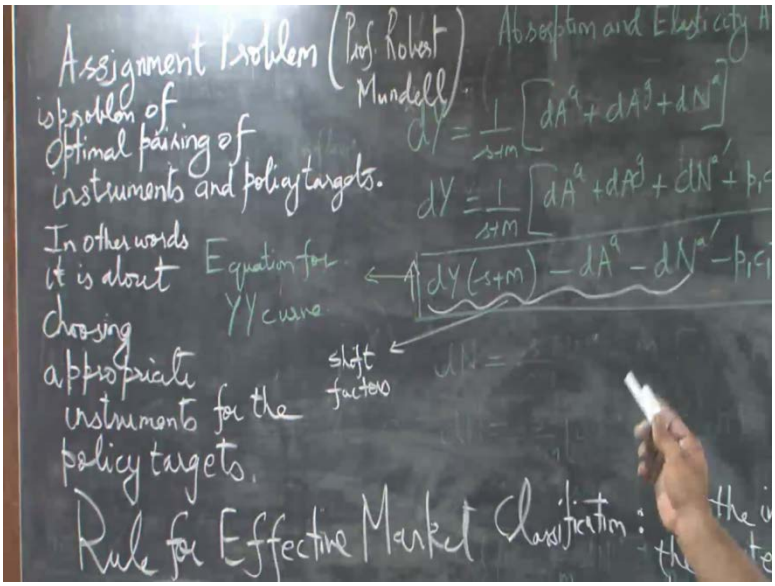

So, assignment problem is by professor Robert mundell, who is also a nobel laureate. But, the first erson in the academic field who floated this idea of currency union having one common currency for a group of regional members. And this, he had floated way back in the sixties. So, whatever we see in? What is happening in Europe? The integration the theory of that currency union which is also called o c a optimum currency area was given by professor Robert mundell. He is the Nobel laureate in nineteen ninety nine just a year after then our own professor seen got the Nobel.

So, the, his work was appreciated. Because of this, because of his work on currency unions which in international economic parlance is called optimum currency area? So, we are going to talk about optimum currency area it is an exchange rate system, which is a fixed exchange rate system; it is like a hard peg. Your currency gets pegged to this common currency, and we are going to see, how these adjustments takes place. Now if you think about it is like a fixed exchange rate.

So, what you need to think is? what happens if there is a switch in expenditure taking place? If foreigner starts liking your goods or you start liking foreigner's goods. And you know that you cannot change the exchange rate, then how would you see the realignments and readjustments. So, this is what he had in mind, when he was designing a policy of currency unions, optimum currency area. And, if you think about that readjustment, those are some policies, which we see that many of these European

countries are have not been following. So, therefore, you do not see this currency union working well in the European region.

So, we are going to discuss about those readjustment policies in the face of hard peg. So, your economy, we are going to talk about first about instruments and policy targets. The rule is that, the number of instruments should be as large as the policy targets. And you choose that instruments which has the greater relative effect on policy targets. So, here is your economy, you are somewhere say here, you are above the y y curve.

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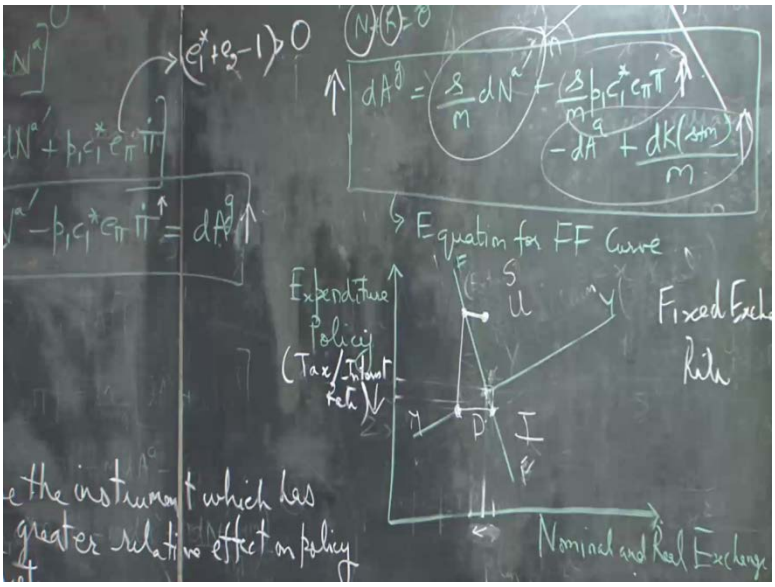

So, you see unemployment in the economy anything above y y is unemployment. Anything below y y is set of inflationary conditions; anything above FF is a surplus in the balance of payments. Anything below FF is deficit in the balance of payments, why? Because FF is a set of points which give you external balance, anything above means, that you have increased, you have adopted more restrictive expenditure policies. When you adopt more restrictive expenditure policies, it tends to reduce incomes. It tends to reduce imports.

So, you have a balance of payment surplus anything above y y, more restrictive expenditure policy, you fall below the full employment level of output. So, you have unemployment below, you have deficit and inflationary condition. So, here, you are say for example, you are here. Now the managers of the expenditure policy have been given a task, they have been given a task to maintain internal balance. The managers of the

nominal and real exchange rate have been given another task; their task is to maintain external balance.

So, let the manager who want to maintain the external balance start first, he sees a balance of payment surplus, as soon as he finds a there is a balance of payment surplus, he wants to switch expenditure from domestic to foreign goods .That is possible in fixed exchange rate, if you change the exchange rate ,you appreciate your currency. And you move to a point which is on the FF curve. So, you appreciate your currency you are back to equilibrium as far as the external balance. But, you are still below the y y curve; there is still unemployment in the economy.

So, you want to know the managers of the expenditure policy come into force, they reduced the interest rates and tax rates to move the economy from here to a point like here .Where you achieve internal balance, but, now Once you reach the this point you are you are below of the FF curve you have a deficit in your balance of payments. So, then again the manager who wants to maintain the external balance will do something. Now he finds that there is a deficit in the economy.

So, he depreciates his currency, because it will shift expenditures from foreign to domestic goods. But, by doing this he falls below the y y curve, which is like inflationary conditions. So, you increase interest rates, tax rates, you move to a point which is on the y y curve which is above the FF curve. So, you have a surplus in the balance of payment. You appreciate your currency you do this and through the cobweb phenomena you reach the equilibrium point.

So, this is the case, where you have fixed exchange rates. The instruments are stable, instruments are stable. Because by changing the instruments, by changing there were values, you are able to move to equilibrium now. (( )).

It is a fixed exchange, had it been a flexible exchange rate? You could not have moved out of the FF curve. I will come to that, if it if there is a flexible exchange rate, you cannot have a deficit or a surplus in the balance of payments. So, you will not be able to move out of the FF curve. So, the movements that you would see would be like this.

Because, you will always be moving in the FF curve. So, something like this will happen you would not move from here to here. You would move from here to here directly, then

here to here, here to here, here to here and then finally, to this. If it is flexible exchange rate, but, I have another thing in my mind. What would have happened? This is the case of stable instruments .You are able to achieve the, you are able to achieve the equilibrium. What would have happened?

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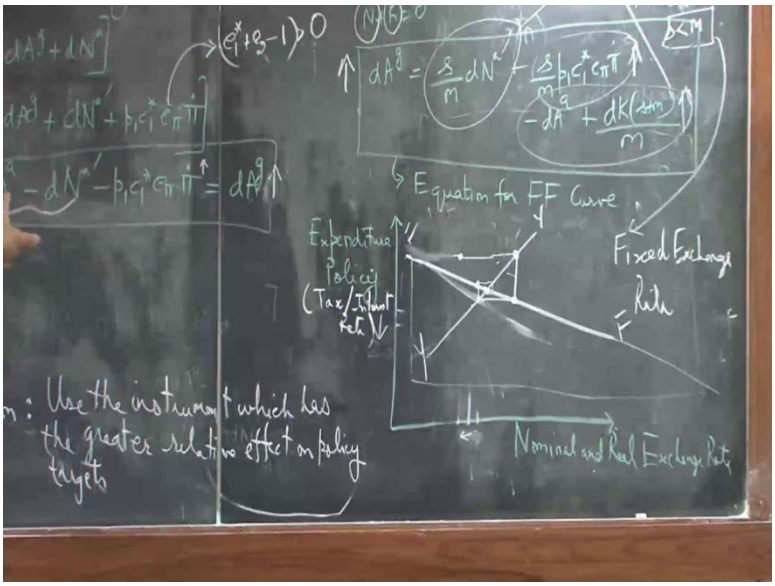

If you are y y curve was steeper and your FF curve was flatter. And you are here, now see the cobweb phenomena, if you do this you will never achieve this equilibrium. So, then the first thing that you need to understand is that why is it that the y y curve is now steeper. And why is it that the FF curve is flatter .Can you can you figure it out by looking at this FF curve and looking at the y y curve? The normal case is, then this marginal propensity to save is less than the marginal propensity to import, sorry correction, the normal cases then the marginal propensity to save is greater than the marginal propensity to import.

This is the normal case and that is why you see a flat steeper FF curve. Now think of an economy which is very open, very open economy like Norway. Where marginal propensity to import. Where s is less than n, this is the case which is depicted here .Where the FF curve will now be flatter and the y y curve would be steeper. In this case, the traditional instruments will not work. So, here is what professor mundell was intervening. And, saying that in this case, where you have a very open economy, the set of instruments that you will have the role of that instruments will be reversed.

Now, expenditure policy will go for maintaining external balance and the exchange rates would be used for maintaining internal balance. You can see from here, if you have to reach this, see what happens? Now the instruments are changed nominal and real exchange for maintaining internal balance. So, then you depreciate your currency for maintaining internal balance. You shift your expenditure from foreign to domestic good to raise expenditures, to raise incomes.

So, you reach here, expenditure policy goes and but, when you come here you are above the FF curve. You have a you are, you are above, you have balance of payment surplus, you have a balance of payment surplus. So, you reduce tax rates, interest rates, for increasing expenditures, increasing incomes, increasing imports to take care of the balance of payment, surplus. But, then you fall below the y y curve, you have inflationary conditions. So, then you appreciate your currency, because this will shift expenditures from domestic to foreign good. You are below the FF curve, you have a deficit.

So, you increase tax rates, interest rates, reduce incomes, reduce imports. And, so, it goes on and then you finally, reach here. So, the. So, the role of the instruments get reversed in case, you find yourself in a situation .Where the marginal propensity to import is greater than the marginal, the marginal propensity to import is greater than the marginal propensity to save. So, the concern looks harmless when I right it here, but, it has got a deeper meaning when you put it in this framework.

Now, the next set of questions that you can ask is that, who knows? Someone who is sitting in the government, who knows that there is an FF and y y curve? Unless until he strategically uses econometric tools to estimate the y y and the FF equation. You would not know where exactly you are? I mean, you would not know where is the y y curve? What is the shape of the y y curve? Unless you know econometrics. Because, then you can estimate the equation and so.

So, then, but, what you can know as a as a person is, what type of situation you are facing in your economy? whether it you have a balance of payment surplus or and you have unemployment in the economy or inflationary conditions. So, then you can change the policies, but, then the rule is that, the number of instruments should be as large as the policy targets. And then you choose that particular instrument which has the greater

relative effect on the policy targets. So, when m p n was greater than m p s, expenditure policy had had more roles to play in maintaining external balance than internal balance.

Nominal and real exchange rate had more roles to play in maintaining internal balance. So, these are some questions, now, think of what I can, I can do is that? Think of a case; where you have flexible exchange rates and there are say capital flows coming in. So, then you would see a shift of the FF curve to the left, but, you cannot move out of the FF curve, because its flexible exchange rate, you cannot have a deficit or a surplus.

So, you would see a movement like this, you would only see changes in the exchange rates, it will not be a cobweb phenomena, till you reach that equilibrium. Again if marginal propensity to import is higher, the traditional instruments will not help, you the role will get reversed.

So, we will end up here and then we will see when, what happens if this is further bifurcated? Remember it had the fiscal policy and the monetary policy. Inherent this, and then what we will see? We will bring in capital flows. So, and then we will see what shapes would this y y and FF curve will give us and then, what set of instruments would be needed to maintain internal and external balance? So, you will that in case of capital flows, monetary policy takes the role of maintaining external balance. Fiscal policy takes the role for maintaining internal balance, in case of capital higher capital inflows. (( )) That exchange rates (( )) interest rates (( )) Foreign investments (( ))

We will be discussing the mundell-fleming model, which is like, which says that in simple words higher is the interest rate here, higher will be the capital inflows. In that context we will discuss the risk neutrality of individuals, the risk averse nature of individuals. But, that would be a separate exercise, then this. Because we will continue with that absorption and the elasticity approach, a view that we have taken that they are complimentary to each other. What I will try to show to you is that, these, fiscal policy will go for maintaining the internal balance, and monetary policy will go for maintaining the external balance.

And, the exchange rates would be as it is in case of capital flows. So, that would be one and then if you keep on working on this equation. You will get many insides to what happens in the economy, and what should the policy makers do? In case of the changes in the variables.

(( ))

For us also India has a managed floating exchange rate. Whenever there are capital inflows or out flows, we tend to change our exchange rate, but, within a band. Officially we say that we do not follow any of the parameters, we just say that there has to be no speculation. It should be orderly conditions in the foreign exchange markets, but, as soon as R B I find that, there is a whole lot of changes taking place. Then it intervenes in the market to maintain that parity within a band. So, in that sense this may apply here also.