International Economics

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Lecture No. # 12

Good afternoon. Today we are going to talk about the effectiveness of monetary and fiscal policy, in the light of no, limited, high and perfect capital mobility and with no sterilization. The tool that we are going to use is the IS-LM Framework.

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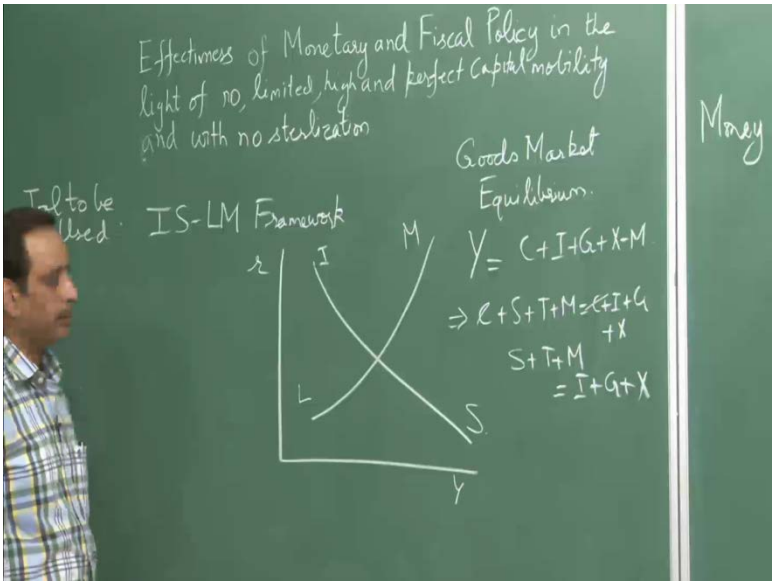

Now, if you recall from your first few years here, you studied about the IS-LM framework, what it will do was that it would tell the, it would tell you about the simultaneous happening of the goods market and the money market equilibrium. The IS curve showed different combinations of r and y, which would give you the goods market equilibrium; and LM showed a different combinations of r and y, which give the money market equilibrium. Now the goods market equilibrium would happen, if the savings the taxes and the imports, these three together would be equal to the investments, the government expenditure on goods and services and exports.

Now, you will see a rightward shift of the IS curve, if the exports increases or if the government expenditure increases or there is an increase in the investments. If there is an increase in the taxes, it would have an impact on both consumption and savings. So, the savings would go down, but still S dash, which is the new savings after taxes are imposed S dash plus T plus M would would be such that you would see a leftward shift of the IS curves. This was the goods market equilibrium. So, the IS curve showed different combinations of r and y, which would give you goods market equilibrium. If you I could I can go for how I get the IS curve, but probably you because you have already read about this IS curve. So, only if there are queries and questions about how to get the IS curve, I will go into the derivation of IS curve. The other curve is the LM curve, which would show the money market equilibrium.

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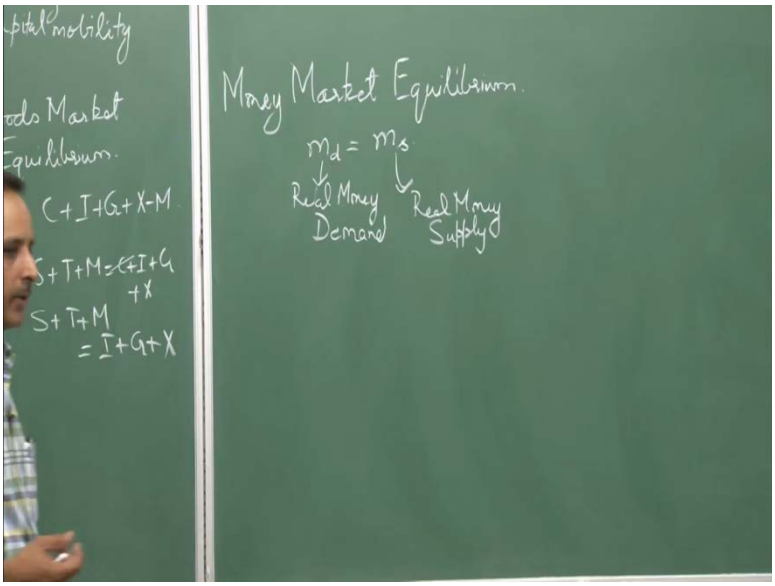

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And the money market equilibrium would be where you have the real money demand equal to the real money supply, and traditionally you would demand money for two purposes; one was transaction, transaction demand and the other was for the speculative purpose. The transaction demand was a function of income and the speculative demand was a function of the interest rates. So, wherever you would have whenever you have money demand is equal to money supply, you would have money market equilibrium.

So, LM curve showed different combinations of r and y, which would give you the money market equilibrium.

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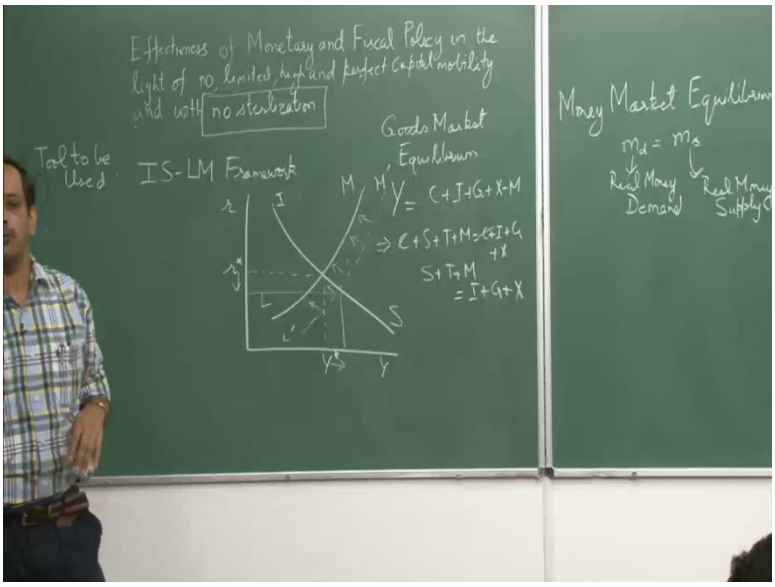

The point where these two curves intersect would give the equilibrium values of r and y, which would give you two equilibriums; one is the Goods Market equilibrium and the other is the money market equilibrium. So, if I have a time, I will go into the derivations of the IS curve, and how would the IS curve shift to the right and left? But what you have to remember is that you trying to defeat this Goods Market equilibrium, and if there is an increase in government expenditure or exports, it would shift the IS curve to the right. And why would we see an increase in exports? Because say if you depreciate your currency remember, when you switch your expenditure from foreign to domestic Goods, the idea is that it will increase exports.

So, if exports, if you depreciate exports would go up the IS curve will shift to the right; if you appreciate your currency, exports would go down the IS curve, instead of shifting to the right will shift to the left. So, with this basic knowledge and because you are all economic students, you gone through this I can come back to this into the and and give you the derivation of IS and LM curve. But I would like is you to understand the effectiveness of monitory and Fiscal policy in the light of no limited high and perfect capital mobility. And when you talk of capital mobility, it is like talking about investment in domestic or foreign bonds.

So, if there is an outward investment, it is like you invest in foreign bonds, you switch from domestic to foreign bonds; and perfect capital mobility means, you completely switch out of the domestic bonds into the foreign bonds. So, even if there is a small differential in terms of the interest rates, that differential will not last much, because if you assume that is perfect substitutability between domestic and foreign bonds as soon as the foreign interest rate is greater than the domestic interest rate, you will completely switch from domestic to foreign bonds. And as soon as you do it, that differential will not long, will not last long and it would suddenly, it will immediately come wherein you would have the interest rates equal to the foreign interest rates.

So, with this, let us discuss the first scenario, which is the effectiveness of the monitory policy, and we will see whether indeed monitory policies effective in raising incomes and output in the light of no limited high and perfect capital mobility. So, you can just see that if there is an increase in money supply, then this LM curve will shift to the right even if you assume that there is no capital mobility, what will happen in the economy, would be that the interest rates would go down and the incomes will go up.

As soon as the income go up, the imports go up, so you have a balance of payment deficit; when you have a balance of payment deficit we are in a world, where in reality, there is no sterilization; that means, the changes in reserves do have an impact on the money supply. So, when you have a balance of payment deficit or in other words, there is a net outflow of foreign exchange, it does have an impact on the money supply through the high powered money, the money supply goes down. If the money supply goes down, this LM curve, where which has shifted to the right, will shift back; and this process is expedited, if you assume limited high or perfect capital mobility. Why because as soon as the interest rates go down… By the way do not think that this is foreign this is optimal optimal levels of rate optimal levels of income.

So, what happens in case of capital mobility is that as soon the interest as soon as the interest rates go down, so according to the Mundell Fleming framework, Mundell Fleming framework if the interest rates go down, there will be a capital outflow, it would further deteriorate your balance of payments. And what you would see that this LM curve, which had shifted to the right speedily comes back; and if you have perfect capital mobility, there cannot be a differential between domestic and foreign interest rates the LM curve remains as it is.

So, what it shows is that the monitory policy in the wake of no limited high and perfect capital mobility; and assuming that there is a fixed exchange rates; this is important; had it been a flexible exchange rate? You would not have seen all this, because when the exchange rate would have changed, the exchange rate would have depreciated in that case. And then you would have seen a change in the IS curve; no, you are not you are assuming that is a there is a fixed exchange rate and so the monitory policies ineffective in raising incomes and output, in the wake of no, limited, high or perfect capital mobility.

What about Fiscal policy? What about Fiscal policy? So, coming back to this point, it also shows an Impossible Trinity between three things that is the famous dilemma of that any country faces; you cannot have these three things together; one - a fixed exchange rate, second - a perfect capital mobility, you cannot have…

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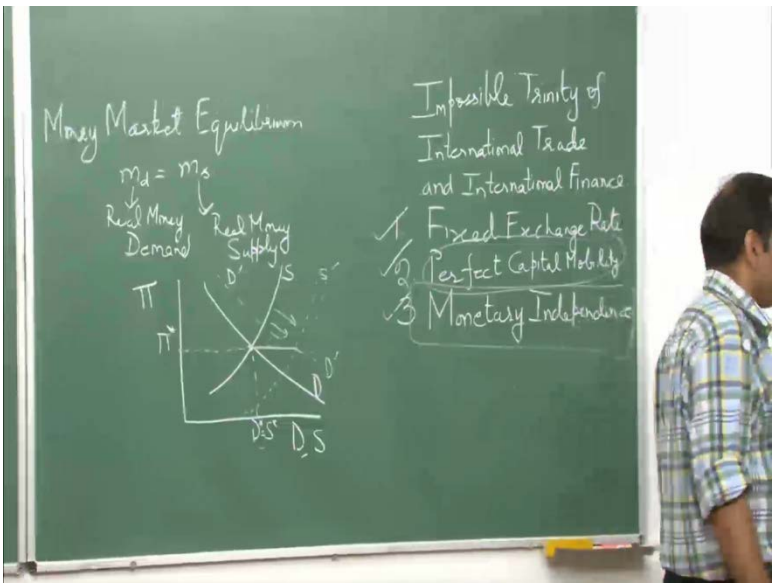

So, the Impossible Trinity…

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All countries try to solve this problem, which is called the Impossible Trinity of International Trade International finance; you cannot have all these three together. So, here, this was an economy, where they had expected that if they increase the money supply may be because there was some recession going on in the economy, they thought let us increase the money supply, let people have more money with them, let them

demand more goods and services that would increase output and employment in the long run. Never realizing that you have a fixed exchange rate; that means, you have to maintain that parity, you have perfect capital mobility, and you want monitory independence, because of the domestic reasons, you increased money supply. When you increased money supply you have to fixed exchange rate and you had perfect capital mobility, you would realize that in this particular example you compromised on the monitory independence, because you had increased money supply initially in the hope that output output would increase, employment would increase, but then incomes went up, imports went up, you had deficit. And if you have a balance of payment deficit, then someone has to intervene in the economy, because there is a net outflow of foreign exchange.

Can you can you recall the diagram, where you had the exchange rate that is the price of foreign exchange on the y axis, and you had demand and supply of foreign exchange, this was the downward sloping demand for foreign exchange, this was the upward sloping supply of foreign exchange. This came from the demand of the foreign country, assuming that it was an elastic demand.

So, this was the market determined exchange rate; this is where the demand would equals supply. And so if you when I say balance of payment deficit, I say there is a net outflow of foreign exchange, there is an excess demand for foreign exchange. So, someone has to intervene to maintain this parity, because this is a fixed exchange rate that someone is the central bank, which intervenes to maintain that parities. But when it supplies this much of foreign exchange it loses its reserves; and one of the sources for changes in high powered money was the change in the reserves. So, as soon as the reserves went down, the high powered money went down, and when the high powered money went down through the multiplier, the money supply would go down.

So, you are earlier plan to increase the money supply goes waste here, because one incomes increased, and it went you had a balance of payment deficit, but then you lost reserves it let to decrease in money Supply. So, you compromised on this monitory independence. So, in a fixed exchange rate regime, right you compromise on monitory independence; that is what happens in Europe also, because they everyone is pegged or everyone at least the euro zone members, euro zone members follow common currency called euro that is like a hard peg; each currency of Euros, your domestic currency is

pegged to euro that is a hard peg there you have a fixed exchange rate you have a perfect capital mobility, but you compromise on monitory independence. That is the reason that at least three countries in Europe did not want to compromise their position on monitory independence that was United Kingdom, Demark and Sweden. So, so United Kingdom and Denmark opted out of the exchange rate mechanism

As soon as the first thing that you do is when you enter the euro, you have to fix you exchange rate, you have to tie your your currency with that common currency euro. And then you need to see that you currency is stabilized, there is not much change in the in the price of the foreign exchange. But then everyone struggles, there they need they compromise at least in Europe, they compromise on this monetary independence.

So, every country whether it is India or any of the other one eighty eight countries of the world, they are all trying to solve this dilemma, they if you you cannot have all these three together, you can have fixed exchange rate, you can have monitory independence, but then you have to compromise on the perfect capital mobility.

So, there are countries like India, who who want monitory independence; and it is not a fixed exchange rate India's exchange rate is like a managed exchange rate, where the RBI intervenes just to have and orderly markets. So, you have monitory independence, its it is a manage floating we try to maintain an exchange rate, but within a band, which is not explicit we do not say that we will move our currency within a band, no. We only say that there should be no speculation in the foreign exchange market, market should be in order that is all that we say. So, it is called the manage floating or the dirty float. There are some other countries, which have crawling peg, where your exchange rate moves according to certain parameters

We already saw when we discussed uncovered interest parity that exchange rate moves because of the differential interest rates. And then throughout this course in another one month, you will see that exchange rate moves is a function of many variables, differential interest rates differential inflation, differential outputs, differential money supply, movements in the other exchange rates and so on. We are not crawling peg, we have a manage floating, but when we compromise on this, we compromise on perfect capital mobility. We have at least for certain transactions in the capital account, we have certain reservations. So, for example, if you wish to buy shares in the foreign company

or in the foreign country, you cannot do it, you cannot do it, you are not allowed to do it that is like reservations; you cannot invest in securities outside.

Companies can do and that too is a recent phenomenon. So, capital account liberalization is a recent recent phenomenon, even for the developed nations. So, we have full convertibility as far as all transactions area all transactions related to the current account, but we do not have perfect capital mobility in relation to the to the to the items related to the capital account. So, there was one committee, which went into this question that whether we should have a capital account liberalization or not that was the S star pore committee and it submitted its report in nineteen ninety nine, but since then nothing is happened; the the the present prime minister is very eager to have this perfect capital mobility, but then there are so many other things, which are happening in the economy that you have some sort of policy paralyses, you you cannot focus on the reforms that you want.

So, that is about the non-effectiveness of the monitory policy in the light of no limited high and perfect capital mobility. Now try to think of the Fiscal policy; now what I would ask you is that there is a handout that I have given to you, because there is a shift of the there is a shift of…

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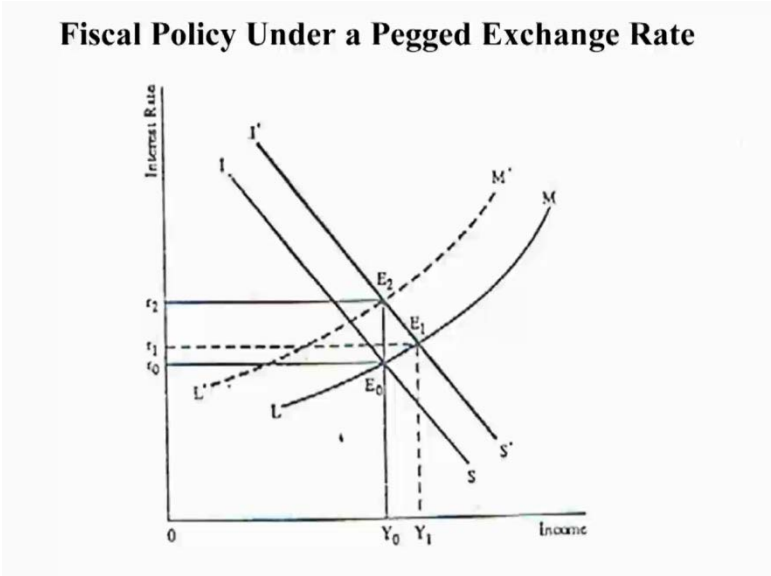

So, look at page 387, and see what happens, if the if fiscal policies used under a pegged exchange rate. So, you reduce the tax rates when you reduce the tax rates, you would see

a rightward shift of the IS curves. Now, here you need to make a distinction between no capital mobility, you have to make a distinction between no capital mobility, limited capital mobility, and perfect capital mobility; when there is no capital mobility, now I am making a small change in this diagram, now we do not… So, for example, you reduce the tax rates hoping that the aggregate demand in the economy will go up, this is the fixed exchange rate.

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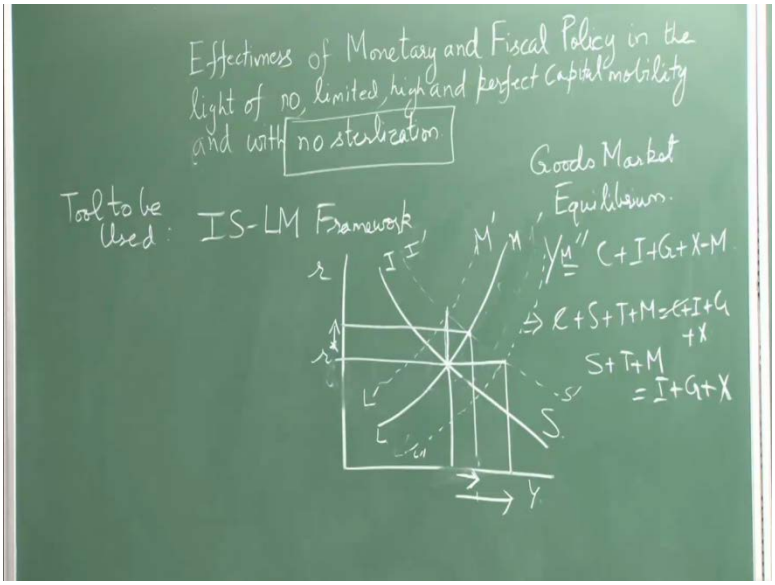

So, the IS curve shifts here in the short run, you see that the interest rates go up the incomes go up, now assume that there is no capital mobility. What do you think will happen in the economy? Incomes have gone up, so surely imports will go up if imports go up there is a balance of payment deficit, if there is a balance of payment deficit, and there is no capital mobility; there will be something which happens to the L M curve, because if you have a balance of payment deficit, the central government will lose reserves, the money would reduce, and the L M curve shifts to the left.

So, that you reach a situation where the Fiscal policy also is not able to increase the incomes output, and employment in the wake of no capital mobility, and fixed exchange rates. But as soon as you bring in capital mobility see what happens? Because the interest rates have gone up recalling the Mundell Fleming Framework, if the interest rates go up there will be capital flows coming in, if there will be capital flow coming in you can you can think of a situation, where the money supply - money supply increases on the one

hand, and on the other hand remember the increase and incomes let to deficit and decrease in money supply. So, you can have a situation where everything negates itself; such that the L M curve remains, where it is. This this L M curve remains where it is. So, your your your income increases interest rates go up, and your current account is in balance, because there were two forces working opposite to each other; one was a balance of payment deficit which let to decrease in money supply, but then higher interest rate let to an increase in capital coming in.

So, there can be a situation where there is no change in the money supply, L M curve remains as it is. So, with capital mobility you see a situation where the incomes go up. So, Fiscal policy is effective in raising incomes, and output and employment in the light of capital mobility. What do you think will happen if there is perfect capital mobility, when there is perfect capital mobility, you would see an increase, because the interest rates go up as soon as the interest rates go up, there will be a complete switchover from foreign bonds to domestic bonds, you will see an inward foreign capital coming in. And it would be to a level that you would see a balance of payment surplus, and your L M curve will now shift to the right, such that you see a greater increase in incomes, but your interest rates remain as it is, because you have perfect capital mobility. So, Fiscal policy becomes completely effective in the light of perfect capital mobility, and a fixed exchange rate; that's Fiscal policy in the case of fixed exchange rates.

The third scenario - the third scenario is the use of monitory policy in the light of no limited high and perfect capital mobility, but now you assume flexible exchange rates. Now can you think what will happen if you have a flexible exchange rate and you increase the money supply. So, when you increase the money supply incomes go up the interest rates go down. So, incomes go up, imports go up you have a balance of payment deficit, but this is a this is an economy with the flexible exchange rate, you would not see any changes in the reserves, because there is no question of having reserves in a case of a freely floating exchange rate. The price of the foreign exchange would move you would see a depreciation of the of the the the domestic currency.

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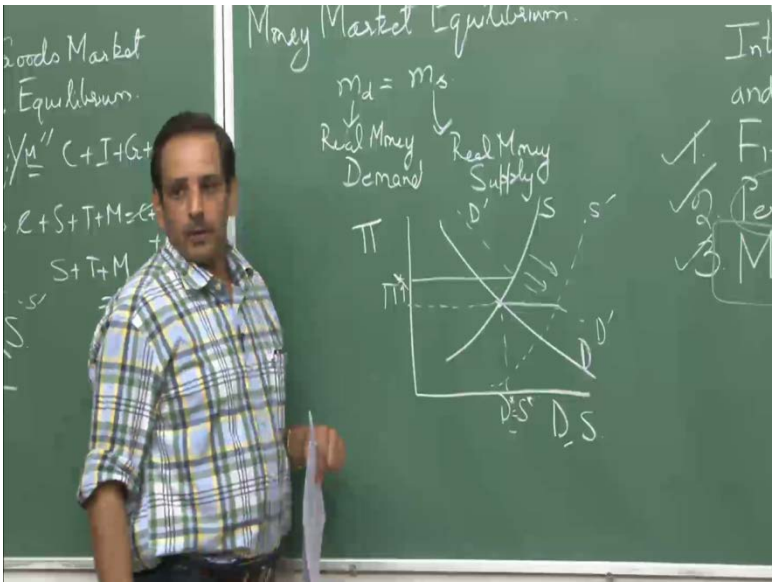

So, it is a flexible exchange rate, so as soon as there is a net outflow of foreign exchange this pi goes up right; that is equivalent to saying that your currency depreciates, but when your currency depreciate there is something which happens to the IS curve; the IS curve shifts to the right, because it switches expenditure from from foreign to domestic goods. Remember depreciation when you depreciate your currency the price of exports in terms of foreign currency goes down, the price of imports in terms of local currency goes up. So, your imports decline your exports increase you see a rightward shift of the IS curve, so then monitory policy becomes effective in case of the in case of the flexible exchange rates.

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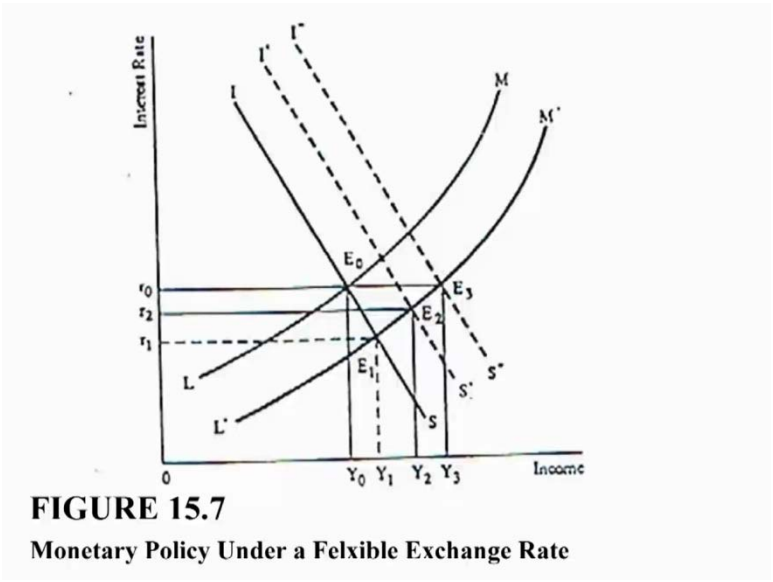

FIGURE 15.7

Monetary Policy Under a Felxible Exchange Rate

So, if you look at the diagram which is figure 15.7 monitory policy under a flexible exchange rates, the depreciation of the currency leads to the rightward shift of the IS curve. So, I would read this paragraph an increase in money supply shifts the L M curve to L dash M dash displaying equilibrium from E 0 to E 1, the domestic currency depreciates at once even in the absence of the capital mobility. Because an increase income from O Y 0 to O Y 1 raises imports; the expenditure switching effect of depreciation shifts the IS curve to some such position as I dash S dash displaying equilibrium to E 2 and raising income to O Y 2 O Y 2 capital mobility strengthens this effect, because the reduction interest rate induces a capital outflow causing a larger depreciation of the domestic currency with perfect capital mobility the interest rate must stay at O r 0, and the equilibrium is displays to E 0 E 3.

The IS curve shifts all the way to the new IS curve I double prime S double prime income raises all the way to O Y 3, under a flexible exchange rate monitory policies effective permanently and capital mobility raises its effectiveness. So, what capital mobility did was that as the interest rates went down there was a capital outflow which let to greater depreciation; greater depreciation meant that the IS curve shifted to the right and therefore, you saw a greater increase in income. So, monitory policy is effective in raising incomes and employment, even when you have no limited high or perfect capital mobility.

The last is an interesting one which is the Fiscal policy under a flexible exchange rate, now can you think how the Fiscal policy under under a flexible exchange rate would work. So, again this is an economy you need to increase and aggregate demand in the economy you reduce the tax rates IS curve shifts to the right. So, you see an increase in incomes, but you also see an increase in the interest rates. So, then as the incomes go up the interest rates go up, and now if you bring in capital mobility you would see that because the interest rates have gone up; there will be a capital inflow.

So, instead of the depreciation how you see an appreciation of the currency, because when the IS curve shift to the right incomes increase, but the interest rates went up; if you have capital mobility you would see inflow of capital coming in. So, you would see a surplus in balance of payment which would lead to appreciation of the currency - appreciation of the currency would mean a leftward shift of the IS curves. And in case of perfect capital mobility; there would be no change in the IS curves your incomes and employment your your output would remain as what it was before. So, Fiscal policy becomes ineffective in the case of flexible rate, and in the light of capital mobility

So, this figure 15.8 shows what happens you see an IS curve shifting to I dash S dash, and income raises interest rates go up with no capital mobility or low mobility, the domestic currency must depreciate at once the expenditure switching effect of the depreciation shifts the IS curve to some such position as I double prime S double prime. So, see this is interesting with no capital mobility you had an IS curve, because incomes went up, you saw depreciation in IS curve shifted to the right further to the right with no capital mobility.

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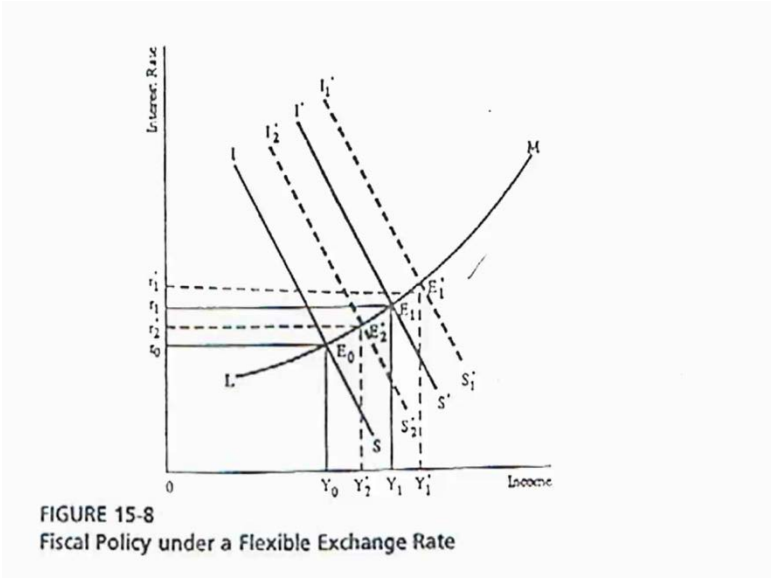

FIGURE 15-8
Fiscal Policy under a Flexible Exchange Rate

But then the tax cut is more effective with high capital mobility the domestic currency must appreciate, because the interest rates went up. So, there was a capital inflow coming in that wiped out the depreciate first, then with perfect capital mobility you had a balance of payment surplus when you had balance of payment surplus it would lead to appreciation of the currency, your IS curve will shift back it will shift back to where it was earlier. So, the tax cut is less effective with perfect capital mobility it is completely ineffective the interest rate must stay at O r 0, and the appreciation of the domestic currency must be large enough to drive the IS curve back to its starting point; there is no increase in income and the tax cut is completely ineffective.

Now, this is a scenario where higher interest rates lower interest rates have a impact direct impact on the capital flows, but in the real world whether higher interest rate prompts foreign investors to invest in India; that is another question that is an empirical question, because there are host of other factors which have an impact on the foreign investments coming in the infrastructure quality, the state policies, and host of other factors which are important right, but the these are some basic results about the effectiveness of the monitory and Fiscal policy. So, I will end up here, if we will we will discuss some other topics a new new chapter tomorrow.