Macroeconomic Theory and Stabilization Policy

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Lecture 19

The balance of payment account is another account there countries have all country have. So, I need to talk on the balance of payment account and relative issue is exchange rate systems because the last topic requires to define exchange rate systems and in the contest of a macro model. These are macro model that I talked about, only one these this is an open economic macro model in the sense open in the sense. Now, countries allowed shade with other countries and interact with the other countries, if you look at the ISLM model or look at the Keynesian model that i described there is no another country is all happening in India like the GDP etcetera you are talking about.

Now, I am going to extend that to the country having inter action with the other countries, so the last two topics essentially belongs to an area macro economics called open economic macroeconomics is open and what are the macroeconomic issues. I will talk about government policy, monetary policy, physical policy all that, but in the contest of a open economic and you will see the results are different and that will conclude my objective what I had in this course.

So, topic number nine, I am going to talk about an account in the beginning of the course, I talked about one account national income account which has three methods to compute values professional income etcetera. Here, I am going to talk about balance of payment account topic nine is the one I begin. This is the beginning of the last leg of the course the final leg of the course topic nine balance of payments account.

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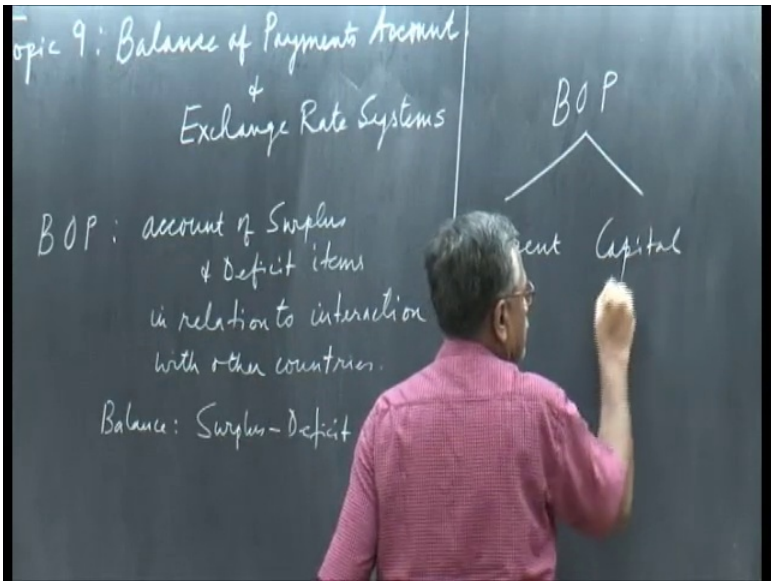

This is the one course I will talk about and the relative issue is exchanges system and I would also talk about exchange rate system. Now, BOP as it is balance of payment accounts is an accounting procedure what is an accounting procedure. You collect the data on two heads, essentially one is the income head one is the expenditure head, now accounting books has various explaining them or describing them, one can call the credit account credit item and debit item in a company.

If you go to the company, they will say it is a credit item whether money is coming in and the debit item whether money is going to be spent on something, one can talk about income and expenditure money coming income money spend expenditure. Here, balance of payment account they talked about that surplus amount of the surplus items, where the money is coming in and deficit item where the money is means spent going out. So, it is essentially keeping account of surplus and deficit items in relation to interaction with other countries item in relation to interaction with other countries surplus and deficit items.

So, let me give you an example of surplus item, which allows you to accumulate say foreign exchange surplus of a exchange in your country which is an income item revenue item income revenue. If you expose goods to exports, you earn a foreign exchange in dollar or pounds whatever would accumulate in the hands of the people or government, whatever of the country a deficit item would be when you spent that dollar or income that you earned. Therefore, it accumulated in the hands of the other country like import, if you import a goods, make payment in dollar or pounds. Therefore, lease my country is not with me anymore, it risks with reaches somebody else some other country.

So, it is a recording of surplus and deficit items is an accounting procedure, so the overall balances of payment balance overall balance of payment balance. This is the word use balance is essentially surplus minus deficit can be negative or positive. If the surplus is more than deficit, it can be positive balance of payment which is called surplus balance of payment. If the balance of payment deficit, it can be a deficit balance of payment very simple, it is an accounting procedure, we have two columns.

Basically, one is credit items one is the debit item debit is money going out deficit items here and the credit items are the surplus items. So, you can have a balance, overall balance means net value in simple words is a net value, now BOP is not a very simple thing BOP has two broad sub accounts.

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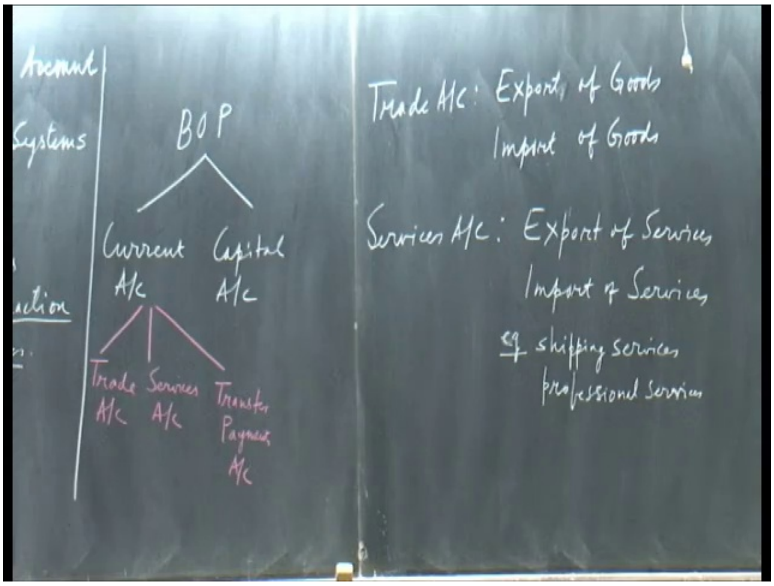

BOP has two broad sub accounts, one is call the current account and the other one is call the capital account. So, the balance in the current account will added to the capital account then you get the overall balance of the payment account which is over all balance of the mother account. So, this sub accounts current account and capital account I need to talk about this is my discussion will be and you learn something useful. Now, here this expression, you would not bother you much because current account has again three sub accounts. So, three sub accounts which make up which constitute the current account the current account has three sub subaccounts.

One is the famous trade account, this is the one usually people talked about, trade account, I will explain that, the other one is the services account and the third one is the transfer payment account, again transfer payments. Finally, if you look at Indian date, I will find small heads which has not exactly matching this, but conceptually theoretically speaking there are three sub accounts. They are the current accounts, capital accounts, sub accounts which are trade account services account and transfer account.

It is interesting that capital account does not have any father, sub account, this is nothing but you look up Indian data whether problems comes. Then, you realize it does not really matching, but when looking at the items, you can know which belongs to capital account and which belongs to current account. In fact, you would also know which belongs to trade account, which belongs to service accounts to number some heads are there and which belongs to transfer payment account which you know what they are. If you know what they are then by looking at the Indian data, so every country has a convention practice when they arrange the data.

So, national income account I talk, but you look at Indian data is not exactly matching with what you learning in this class. If you look up US data not exactly matching with what you learning in this class, so the theory and adapt certain their own methods own are hence names when the collect data and reveal the data to you to anybody. Now, trade account is the famous account usually people talk because for a country this is something which is most important trade account has trade account. Basically, it has exports and imports of goods and import export of goods and import exports and imports of goods that is the trade account this is the one.

Usually, I have discussion central around it is one more item around we the discussions are on TV, news paper here and there mostly hardly I have seen discussions on services account, hardly I hear anything. They talk about famous account, but there are some capital accounts to talk about, for instance capital account they talk about a lot these days something called SBI. They do talk about that is in the capital account now coming to SB account and capital account later. So, export of goods and imports of goods gives you balance this is the famous balance.

Here, the compression is what is the Indian numbers will be Indian numbers will course import value it US dollars or Indian currency through a conversion will be much more than export of goods. So, typically we have a deficit in the trade account, one of the law one of the big factor which creates this deficit in the trade account is import of oil petroleum or is called POL, petroleum oil and lubriguns, three items comes. So, petroleum POL items, other one which creates a deficit in addition to that we have imported of machinery items and some time food items also.

So, they all inflate the machinery and export items you see what the major exports items in India, what are the items have been jams and jewelry. That is why tax is the last budget and the jeweler's happiness again the government and government ahs withdraw that and that would have been very defeating for government. Also, the jewelry industry jams and ornaments whatever they called bringing in the lot of revenue for India and if you increase taxes, it is not good news. So, I do not know how this present government has been planning to be honest with you, the economic policies I never understood, I found many times many of this policies of this is extremely self defeating for the economy.

Anywhere, you can look up if you are interested, now what the items which bring revenue for the India what are the items which India spent a lot. I think export earning cover micro most, I do not know thirty forty may be a little bit more of import of goods the rest of the money for import of goods for somewhere. So, will they come from if the rest of the money is not here, where will the money comes from, the rest of the money has to comes from other account. They should have surpluses, otherwise how would we balance, how would you, you cannot keep on borrowing permanently.

Temporarily, you can borrow from IMA from World Bank to make the payments and permanent bases, in a long run you cannot be borrowing to make the payments. So, if you have a huge deficit here is very important for the country, it has to be fed by surpluses elsewhere. So, that means now getting into the dynamic serve of the payment is very interesting where the surplus is other surpluses is the deficits are changing over time. It is a factionary subject very interesting subject all right its say comes under either open economic macroeconomic, more into macroeconomic policy to come under international economics.

This has two areas, one is international trade, which is the oldest theories, initially all countries are only consider with trade historically speaking. So, subject develop called internationals trade, later all this accounts become important modern world today capital account is very important. So, you have international finance together, they constitute one subject which two broad areas international trade and international finance. Together, they called international economics and open economic macroeconomic is in this course.

Having defined all this, I will go into macroeconomic issues, if a country adopts expansion government, expenditure policy in an open economic set up, what will be the implications for exchange rate for your interest rate for output in the country etcetera. So, that is kind of what I have do in this course, but the international economic is separate branch. It does not come under macro economics or macroeconomics was say it has its own standing international economics. You borrow from micro borrow some macro etcetera, it s a different subject, I am not going to talk about that.

If you want to learn, you learn it next semester, if you have a course, you can apply economic group has offer the course. You can apply as open economics, yes open economic is a country is open to trade with other country. So, interactions with other countries account of surplus and deficit items in relation to interaction with other countries. Earlier, you have closed economy model, there will no other country only India you are talking about that kind of frame work we had.

Now, your open economic model, where you have interaction with other countries that is why they are called open economic, now trade is simple as that. Similarly, services account has two items, basically and you find out the balance export of services and import of services. Now, what are the services you are talking about that, you are exporting and importing of famous services in connection with the trade account. If you are exporting goods, how you going to shift them, so you need shipping services famous either obvious item. So, suppose you agree, for instance a country we specialize in providing shipping services to various countries for export and import.

The arrangement between who pays for the shipping services is different when I have a contract with you that I am going to buy the goods in contract. It will be return that the cost of shipping will be borrowed by me, the importer or will have to be bought by you exporter. You are the responsibility that is part of the contract, the point is shipping services has to come into the picture for small items airplanes are for big items larger amounts ship like a truck arise with goods for men. Then, it goes to Sri Lanka, there it has some import going on, half load the goods again ship coming from US, foreign goods from Germany, German engineer goods are very well known.

Some goods are coming from Germany, they half load in Bombay, then half load in Sri Lanka, then it goes to Bangladesh may be little bit. Then, it does not stop Burma, it goes all the way to honking, it is like a bus stopping various places. So, they are all the time plan, so in relation to trade account is obvious that you require shipping services, but are we only if you import a services, basically if you paying for it, then you are not earning. That is an import of service and export of services when somebody is using your ship, you are the revenue because that is your business.

I want a bus, I want a taxi, rent it out, so here you have example shipping services, anything else that oppose , you will be part of the services accountancy, other service you know shipping services. You can have a international lawyer higher for some arbitration going on in an international court, you paying for it you going to RBI get the dollar, send the dollar draft to him. Some professional services can be medical services very important after will be go when you have to spend money on services. So, there can be them medical services very important.

After we will go, when you have to spend money on services, so can be other professional services famous air lines air lines services you buy to travel it is not India. You take all the time to travel to countries or domestic airlines; you have also foreign air lines flying through the country. So, there can many items are there in services, one important item I need to mention is that one important item I need to mention, what are the two important items I need to mention? You know it is a very funny thing supposes an international company purchases share of Tata Consultancy Services.

So, at the time of purchase of share that company writes a draft or check in favor of Tata consultancy services TCS, you know TCS and TCS in India, this is the money. So, there is an inflow of money coming in which is known as money capital, capital has broadly speaking to their two types of capital, one is money capital the other one is physical capital. So, when you have money coming in into Tata because foreigner bought the share that will be recorded in the capital account.

I will talk about that, but when Tata makes the dividend payment on those shares. They come here past in the past that enter the capital account in the current period, the dividend payments on that money on that share capital that I am paying to the foreign company, Tata pays will come here.

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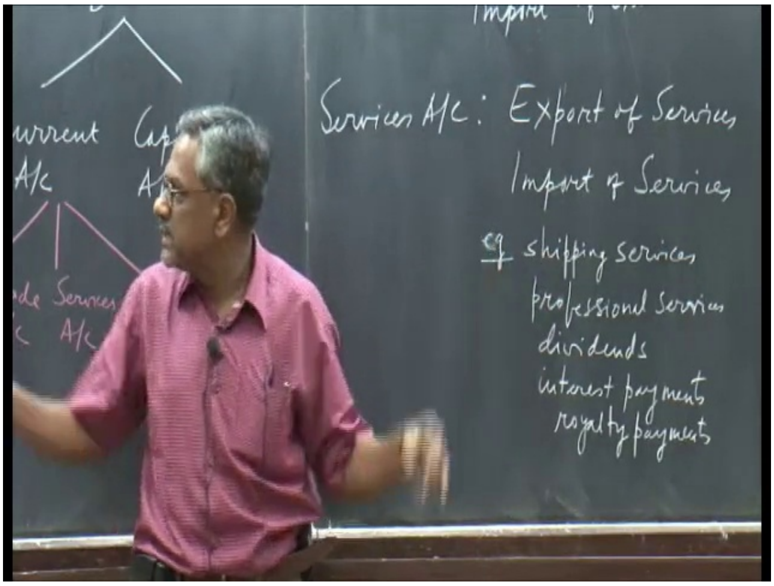

So, dividend payments are here is very interesting this part of services account, similarly suppose I M F gives as a loan which was 1991 or somewhere around that time because we were in caviar balance of payment prices. So, I gave India loan when ever gave that loan it enter the capital account is fine, but when India was making the interest payments which is called servicing cost of the loan, it is called servicing cost of the loan in formal language.

This essentially means you are making the interest payment, you take a loan from bank to buy a car, tomorrow you get a job, you know you are having have a good income. So, you took a loan and you bought a car and you make a fixed payment towards that loan to the bank which includes part principle part interest. That interest is called the servicing cost of the loan, so the next item that is also here is interest payments. This is also called interest payments, so exporter services, importer services is shipping services for instance professional services dividend interest payments.

One more item I want to mention often, then this word open economy word and particularly after Doctor Man Mohan Singh's and his schemes policies from the 1990s, there are lot of permission. Now, given to Indian companies to use foreign technology, so what they do they cannot create that technology here its patented may be, so there is a protection. So, you cannot use the technology here, but you can rent that technology for a period of time through an agreement contract. When you rent that, you have to pay a fee, this fees are often coming on the in national income account.

It came under rent, here the often or included under an items royalty payments, now in India the language may not be royalty payments, it may be called the technology fee, but they are broadly speaking. Conceptually speaking, they come under something called royalty payments, so those items also there. Now, these all these items can be a plus number or minus number. You understand why it is numeric plus number numeric plus number, this means is the surplus items, it adds to the foreign exchange reserve of the company earning of the country of foreign exchange.

Deficit item means it is a minus number with a minus sign, which means it drains the foreign exchange for your country. It goes to the other country, you do not have it like when you spend money, it drains from your pocket, and you spend it out of your pocket, so you do not have it a new, so have you under its coming. So, this is trade and services account export of goods import of goods export of services import of services shipping services professional etcetera an examples are given to you. Now, I am coming to these two accounts and these two accounts and then the transfer payment account.

This is what one of has been asking transfer payments account, you would not believe me in the 60s or 70s when India has severe balance of payment prices severe 60s or 70s how the economic was in terrible shape. Peculiarly, after the oil prices shot, it for 1973 when the price of oil increase nearly 900 percent overnight 900 percent, can you believe that and what it will do to a small economy.

Here, the foreign exchange comes from the oil of certain essentially item and small economy is usually are poor economies and poor economies are the once who also input a part of full rent for instance. There has to be some trucks and trains which require this kind of a fuel and if they imported, you going to pay for it like tomorrow for poor family in India.

I suddenly increase their medical fee or education fee for quench going to school which is essential by 900 percent imagine what will happen. Now, it was a very funny thing will happen India had good mind. There is some good education here, ITC were already there, our ten years old and then what were found for the very interesting. These huge deficits in trade account and services account and capital account hardly any money this transfer payments account.

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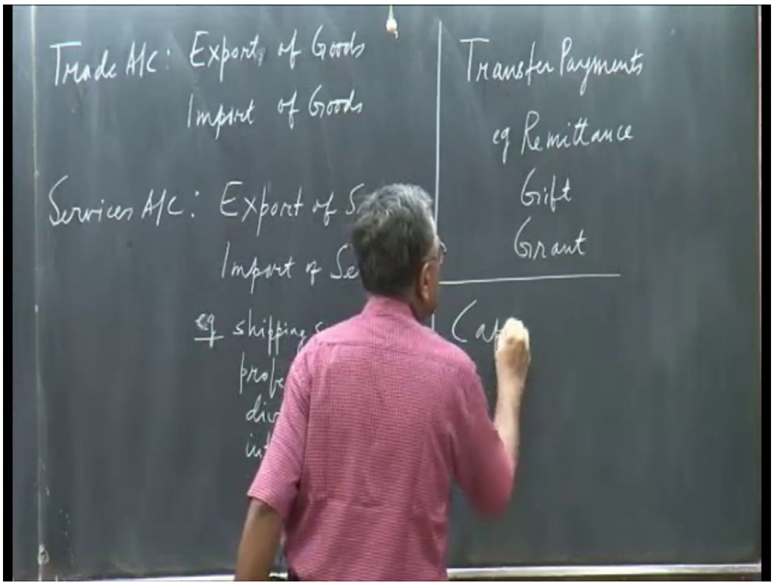

These transfer payments accounts example are just now what one accept remittances and then you can also have gifts you can have grant. I guess you understand grants has a whole to loan is the money that you borrow with or without interest with the promise to return it the principle has to be return and there can be international loans for poor countries without interest also. If the World Bank also does that, if loan without interest do not think that loans are all these like a bank loans where always there is an interest they can be international loans whether is without interest.

Now, grant is something which is like a gift when somebody given a grant of 200 US dollars to some other country may be a fled relief sometimes three are natural calamities earth quick flood relief etcetera this grants are sometimes given, but it is not a loan. It is given to you, you do not have to return it, it is like a gift financial gift. They can come, now you can ask with question of huge receive within so much where help in Afghanistan, Pakistan, there was an huge earth quake few years back.

It divides village after village, completely flat it down when the re building process started, lot of help came whether they are all converted into monetary units because sometimes goods are coming in physical tense couch fool foot. The typical things that come whether there are converted into monetary unit and put into the balance of payment, logically speaking they should because this is the legal issues, they are created outside the country. They are coming into the country, so whatever may be the reason; they should go into the gift items of grants items.

If there are financial help also given, logical they should come any transaction with another country whatever may be the reason should go there, but some countries are make a conversion. Since, it has relief word I has come for once studies specific purpose they may not be enter into the accounting system that can happen. Also, I do not know about the details because the details are decided by the people concern in a country India which is the organization which looks after the data here balance of payment account data collects and record it, which organization in India collects the data and in turns the balance of payment account every surplus item deficit item one?

Every day which is the country which is the institution, so if you have data open RBI, you get the data if you want balance of payment data open RBI, you get the data. Immediately, another source in economic is the mutual funds, further sometimes data do not be match, I do not know why it happens, then huge of which one to trust both are very respective organization in India IMF and ministry of finance. So, there are problems and then we did not go into that practical issue, but for a person who is you can use the data for any specific study research or whatever. Then, it gets into you know enough time which one to trust who knows and I have seen RBI sheet incorrect data and I wrote, but RBI is very prompt.

They replied immediately that it will be corrected thank you for pointing that out money supply data for another course I teach where use RBI data. They promptly reply like a foreign organization in India, nobody bothers to reply you write mails government. They do not reply RBI replies to me may be I am working IIT, I have to reply and by evening they send a mail, data has been corrected. I was really open the file find the data correcting, so they got alerted my goodness, such an important money supply data was incorrect. So, they told goodness ours files has incorrect money supply data and we are suppose to do the central monetary of ferity of the country, they got very alert.

So, they all set up go through and day by evening the mail came, they have been in corrected the files. So, that can happen because manually it is done of course may be we use computer, but after all human labor is used to typing number because lacks of load money. You are talking about one digit missing means the huge amount missing, so they have say 4,78,936 lacks of cores. So, they can happen but also there is an incomes between two government organization RBI and mutual finance is that the huge problem which one to trust.

So, remittance gift grants transfer payment, these are very important I think, so what was happening coming back onus case in the 60s or 70s India was going through hell, but these IIT graduates went to Europe, went to Canada, United States. They all settle there, they got a very skilled labor also skill labor was there, we have good mathematician, physicists, even technologists are been developed are IIT, RBI some place. You do not even believe and those western countries like Germany the warts at second world war Canada build by immigrants.

They all looking for labor the countries growing, they did not, both kinds of people, one who can work in in the factories the blue colored work. The one who are the baboos, can became baboo, because they have lot of degrees or can go to universities or the white colored ones. So, they were importing a labor and happily Indians are saying good bye all settled. So, when I went to study there, you would not believe me I was often inviting not often we regularly sometimes invited by Indian families? I have visited both blue colored workers families by walking into their house; we would not realize that they work in a factory a person working in a factory is better than the person working for IT company.

For instance, among they earned their real income that is called real income not the money income, the real income, the money that can purchase things. These fellows happily will sending money back home because just so much surplus and you know Indian habits a come from poor country. Usually, do not spend a lot, they do not go out to meet every day if you go at your age I with MacDonald’s habits developing here. You will spend a lot in MacDonald’s, but those this typically Indian going abroad do not little of the sense spend the surplus is poor families back home in India.

So, all this reason contributed to a huge inflow remittances and that saved the prices, we were having elsewhere Indian balance of payments a lot of prices you know what I am saying Indian export were hardly commutating. Hardly were they export the funny thing is amazing, if Indian government wants to perform. They can turn around things, I think either it competence or they want to perform in the middle of that crises 73 oil cries price with Mrs. Indira Gandhi is the prime minister. She suddenly decided to gives in her 20 point program, here a 20 a lot of export subsidies and Indian traditional industries started producing goods for the deport market to an extent along with the remittances.

You would not believe me; I suddenly found there were 74 crores, only 74 or 73 crores, something like that surplus in the trade account in the middle of that crisis in 1975 or 76, 73 was the oil prices within 2, 3 years. With an oil price shock like that how did Indian trade account had a surplus, so it is possible is just that we do not frame the right policy is just that we do not want to and we do not frame because we do not have the competence to do that. How is it possible, the poor country like India going to hell, absolute hell has suddenly has trade account surplus.

That means exporting more than importing, what are the exporting traditional goods jute bags, embroidery items, carpets, they become very attractive, so good which is sold here at 100 rupees being sold there at 5,000 rupees with the exchange conversion. You can see how the exporting class was literally cannot sleep because of excitement at night, they partly cannot sleep, they never thought that they can earn so much just with government help. It was possible surplus trade account, so there have various items, when you look at what you do and what you know do. Finally, before we take a break, I come to the capital account, the capital account in some senses very simple.

Money is coming in, not because of this money coming in because NRI are depositing money in our bank. There are lot these people are called NRI non residence Indians, they acquire the states immigration of another country, but originally there are from India. So, they are NRI s, these non residence Indians do bring in a lot of money.

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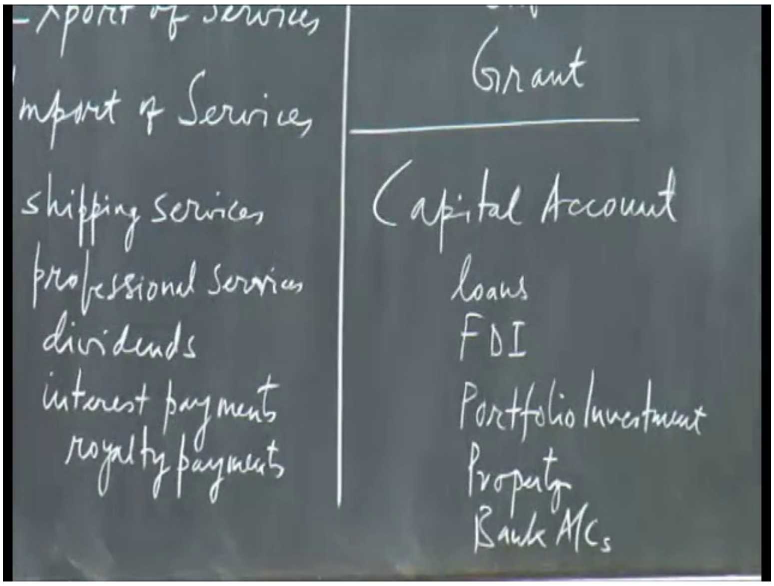

So, in the capital account you have all these, you know money flowing in because of loans, then FDI foreign direct investment in companies bunches. Then, port folio investments is buying shares, loans FDI, port folio investment, even buying properties, bank accounts etcetera. They are numerous money flowing activity, no real good transaction as such I bring in money to help the Indian power sector. So, I get a collaborated activity going on with money coming in and helping the power sector. I bring in what Dr. Manmohan Singh ask the Chinese prime minister or president in the recent submit.

He said submit in the Mexico that ask china why do not you invest in our infra structure projects is Indians really struggle to get the money from the infra structure projects is not going well even at that scale. It was going in the Indian government during, but price is that gold and quadrilateral program etcetera, it has slope down, so much is shocking. So, infra structure project power project are number of Indian companies taken of Indian power of projects, but the other kind of infra structure is very wide area. It can be forced, it can be air force, it can be shipping, it can be roads, telecommunications, power, other kind of energy, and all come under infra structure.

So, if now our prime minster asked it was TV news, I did not read it anywhere, the Chinese prime minister as to why do you interest in our infra structure project because they are investing lot in their friendly countries like Pakistan, Sri Lanka, etcetera. They asked Dr. Man Mohan Singh asked him that was a news item anywhere, these are small things which surprises is that you would at all ask. I thought you would feel embarrassed, you would be humiliating for in to ask because these countries are put together. They are called big countries Brazil, Russia, India and china and one of the big country asking another big country why do not you invest, but these are good thing to save.

So, what china is much better than India, everybody knows for better than India, so they are saying why do not you invest in India, anyway. So, the capital account is all that money flowing to you are buy a property Shah Rukh Khan boss a property, if do you have a money in another country and island or something, they have money to buy irons. We have money may be to buy at most slate in that is not possible. So, that is money flowing out of the country, somebody buys property in India, money coming in it can be loans, it can be IMF loans are also there, World Bank loans.

It can be grants or in in transfer payment loans are there, then port folio investment is putting money in the Indian stock markets buying secondary market shares D I is direct collaboration 40 percent, your share 60 percent. My share in Indian government companies together they are trying to do something may be an engineering plant may be an infra structure project. Who knows FDI that is foreign direct investment. So, these are the items, they come are you enjoying it, learning a lot, I am telling you, giving you very useful information at the **e**nd of the course, very important.

They even for commonsense and general knowledge point of view, today the world has become so open and with TV channels media etcetera. These terms are all over the place, in normal discussion FDI comes up trade accounts comes up normal discussion is get into know economic modeling. These items as I have told you can be classified into two groups, balance of payments items, surplus items, and deficit items. Now, surplus items are bringing in foreign exchange deficit items are making the foreign exchange leave the country. So, they are draining them, now the question is if I want to conceptualize this foreign exchange coming in like US dollar or pounds or whatever foreign exchange is there.

By the way, foreign exchange is foreign currency, so foreign reserves or currency coming in foreign currency leaving if I want to conceptualize this kind of activity in terms of a demand and supply curve, S of foreign exchange, what it will be? The supply of foreign exchange, suppose I talk about a foreign exchange market, suppose here there is a supply curve and demand curve, then the supply of foreign exchange will typically consist of all the surplus items because that is bringing in foreign exchange.

Thus, the supply for India and the demand for foreign exchange is typically made up of the deficit items where foreign exchange is demanded to be spend on something. I demand it foreign exchange because I want to buy foreign car and I want to buy, even Indian government allows long walks, I do not like Indian law inverse, I want to buy loan wards from Korea, South Korea who knows demand for foreign exchange. Typically, we constituted made up of deficit items and supply of foreign exchange would typically be the surplus items. If you agree with this, then is nice, then not getting into macro economic theory, then I can have a description of foreign exchange market in terms of a demand curve and the supply curve.

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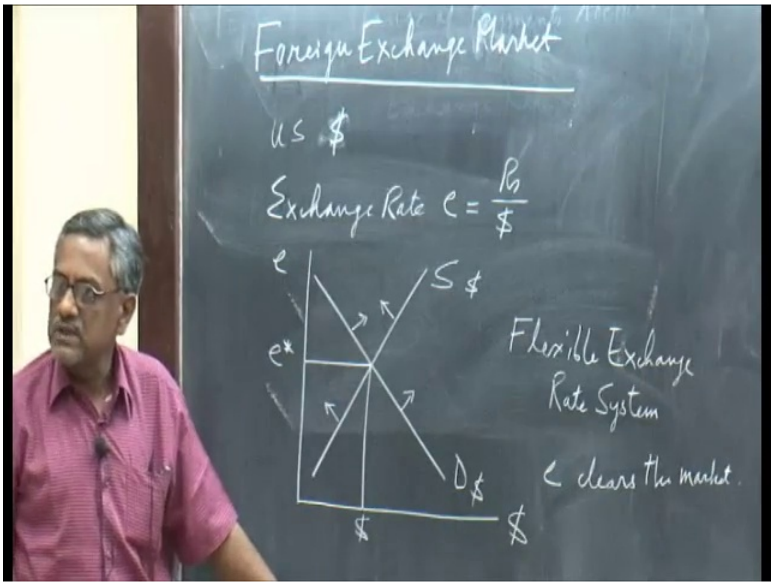

I can have that demand and the supply of foreign exchange, so imagine in a foreign exchange market, and just imagine there are only one foreign exchange, think only about one foreign exchanges US dollars. However, you write it US dollars, how is the exchange rate, we define exchange rate say call that e is equal to rupees over dollar, exchange rate will be rupees over dollar that what you have 57 rupees per dollar.

Now, you have that and the exchange rate from US, it would be typically define as just opposite dollar over rupee, 1 rupee is equal to how many dollar fraction of a dollar, 10 cents, 20 cents, 25 cents or something. That is a exchange rate in from India's point of view exchange rate is typically define the reports that you see. How many rupees per dollar, so I write it as a kind of ratio, this ratio basically means that now in the foreign exchange market, if you can imagine that, there is a supply of exchange supply of dollar and demand for dollar going on. There has to be a price that price, you buy dollar by paying e rupees, what e is and when you sell you earned that price by selling 1 dollar, I earned 57 rupees in order to buy 1 dollar, I pay 57 rupees.

So, foreign exchange market can nicely conceptualize in terms of a demand and the supply curve where the price of foreign exchange is an exchange rate. So, imagine a foreign exchange market, now for dollar, so I have dollar, I have e here and this is the demand curve for dollar and this is a the supply curve for dollar demand curve. For dollar and the supply curve for dollar and the foreign exchange rate that you see in the market is some equilibrium value, say start and end at any point. There is the total amount of dollar that is being bought and sold, so suppose I say that, now presently what is happening?

The e value is happening what this is called a free market or flexible exchange rate system in a free market, what you have in a flexible exchange rate system, flexible exchange rate system. What is happening is now what you see the e value is going up and up 51 rupee, 49, 50, 51, 52, 53, 54, so this number is rising, why is rising, can you explain that what is happening. Therefore, in the exchange market in simple term, so it can be to the story can be much more complicated in simple terms what is happening supply reducing supply reducing.

So, supply going for backward one of the reason can be supply going backwards and another reason demand going up demand going outside importing more. For some items, importing more may be now this of course has a very simple assumption that I am not allowing prices to change in individual countries of goods. If prices change, you require by the same goods with more dollars, it is not necessary, you importing more, but the cost of import has gone.

I am not going into the price role of price here of these goods traded goods between two countries. I am not going into that, without ignoring prices, flexible exchange of system e can go up and down. So, in the flexible exchange system, e clears the market, this is what people will say, this is the market determinate in India. We have that, now presently earlier in the 60, 70s, we had a fix exchange rate system, I would explained that soon.

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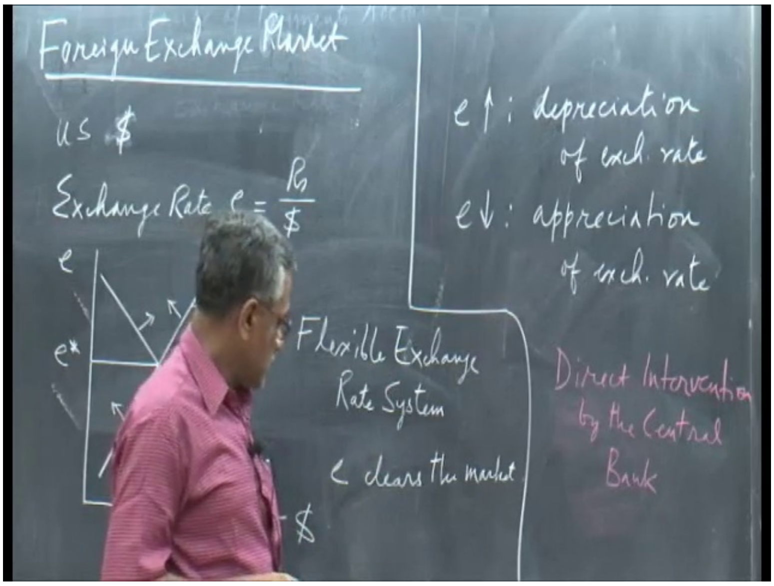

Now, the e value goes up and down in typical names for that, when e values goes up and down, the typical names for it when e value goes up is called depreciation of exchange rate when e value goes up. When e value goes down, it is called appreciation of exchange rate e value goes up is called depreciation of exchange rate, when e value goes up, when e value goes down is called appreciation of exchange rate.

Now, what the language you would hear on TV is that exchange or deficit, further all this kind of a language you heard that and you would also say that because money market determents exchange rate. Now, one thing you can see this is interesting, suppose you take any one factor why exchanges is going up suppose the supply curve is shifting because you exporting less and less. Then, European prices export are falling, European economy y has down they were buying something. So, the supply curve exchanges, it is shifting backwards, how can you counter that, supply curve exchanges rate one would be to reduce the demand.

Of course another one direct introversion government can have or the central monetary like the central bank in our case to RBI can directly intervention and rest to the exchange rate respectability? They think e value going up is the bad thing, so to restore its receptivity, it can come from for exchange artificially shifting supply to right, when is going that RBI can artificially shift supply to the right by pumping in dollar. How will you pumping in dollar simple there are falls nod dealers, what RBI deal with foreign exchange, it would just make sure, it keep enough results with them. They were dealing with whatever they stocked, whatever food gain have, open the go down takes the stocks out gives to them.

So, these guys are not sellers and the food in their stocks tell them there is no pressure on prices, so government also gives the stock the foreign exchange dealers continuously keep a stock exchange buying and selling going on. If they are running short, why the exchange rate is depreciating, RBI can open it banks, take a bundle of foreign exchange, and distribute them at a price. They buy, there are lower price, immediately the pressure with supply increase in the market will go down and he will not go up any more.

So, they attempt a direct intervention which is possible, you keep the exchange rate within the managing level limit, I talked to Man Mohan Singh. Recently, he said I was listening to his interview in the plane while returning to India. What he said he wondering his going up be because the market determinate, if you understand that, what you mean market determines exchanged it is free to move up and down. Secondly, we are not going to do anything, there are extreme volatility remains basically is too much off rise sharp over night or sharp down.

Then, only we would control that with through the supply curve by RBI directly intervention RBI can control it essentially, but he says RBI not do that unless there is an extreme volatility too much pressure direct intervention by the central bank. Direct intervention, direct intervention by the central bank can be controlled, the exchange rate, modulate, the flexural rate, whatever. So, to oppose to flexible exchange rate systems, many countries earlier had a very interesting one called a fixed exchanges system.

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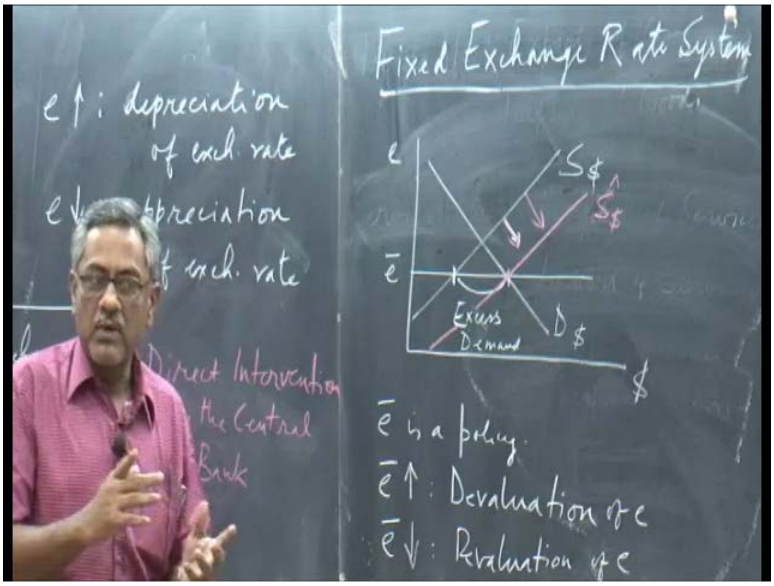

In case a fixed exchanges system, it becomes policy of the government are central bank in case of fix exchange rates system. It becomes policy of a central bank to make sure that the exchange is does not change, how does it works; it works very simple whatever may be the diamond for dollar and supply of dollar government decided. RBI decided fixed at say e bar, now you say there is fix like this, there is the market imbalance which is possible, the market clearances is not possible.

Even it is initially clear, but then if supply or demand shifts, immediately there will be imbalance in the foreign exchange market. So, if you fixed it like this, how do you hold it like this, one interpretation using this demand and supply line is that if government fix like this and suppose there is this, here you clear see there is an excess demand for foreign exchange. People are asking more excess demand for dollar, then supply of dollar, you clearly see that excess demand for dollar as a supply of dollar.

Then, how do you maintain it is execs demand, one thing can government is do is that government can sorry no exchange rate. You wanted to import simple, no fool, no more dollar. The other can do that we are going to fix it through the market, they can control indirectly. So, there is an excess demand, you can shift the supply curve artificially by pumping in dollar and the new supply of dollar may run through this, sorry a new supply of dollar can run through this dollar by shifting it artificially.

It can eliminate the excess demand, but it can also happen, there is a supply if there is an excess supply, it can go open that supply from the market and shift backwards to the supply curve if there is an supply curve, suppose it is here exchange rate. So, it is excess supply, it can backward shifted supply curve by mopping up the execs reserves just like during the heavy rain seepage. There is some waterline, I can use a mop to take the execs motor out, you can mop out it, can seize out the excess supply of curve by shifting the supply curves backwards.

Similarly, there is excess demand as in this diagram the supply curve dollar shifted out right wards to eliminate the excess demand through the pink intervention. This is the direct intervention that RBI can have and thereby control the exchange rate in the market. So, fix exchanges system, they law they would say exchanges will be sold only at 42 rupees per dollar, 42 rupee, 50,000. So, price corrects imbalance in the market, but if you fix exchanges, prices would not be correcting that fix exchange rate in the system would not be correcting the supply demand, but through artificial or deliberate shifts in the supply of dollar.

You can do to that, you could maintain that exchange rate in India we had a fix rate in long term semi floating exchange rate system the semi floating system. I would explain after this is semi floating exchange system, I will explain that after to this. So, it is a very interesting system, now in the fix exchanges system, suppose now government announces government e bar is a policy. So, e bar, now government announce different policy to go up is not called depreciate of exchange rate it has a different name if government announces e bar which is not 42 rupees per dollar, but 45 rupees per dollar.

Now, e bar is the policy announced to increase the value, so from 42 rupees dollar to 45 rupees dollar. It has a very different name not called depreciation is called devaluation, similarly of the exchange rate is now if the e bar goes down is called revaluation of e. So, you have different names here revaluation and devaluation of exchange rate, remember if there is a macro theory changes system which is flexibility system or some time floating system. Then, it is like, flows the price flows that can flow corrects the market, then you have depreciate or appreciate the exchange rate, but if you have fix exchange rate system, it is only through a meeting discussion. Government decides as a policy matter like what the tax rate will be is a policy matter, what the tax rate will be proper.

Then, it becomes the words are devaluation or revaluation of exchange rate no longer depreciation and appreciation of exchange rate where there is an excess demand. The central bank will have to artificially shift the supply curve, but how do they artificially pump in dollars in the market earlier India did have dealer RBI was doing it alone and SBI to do it because state bank is like the right term of RBI. So, RBI asking state bank to do it is just make available that dollar, they are not saying no, they will make it available and meets the demand whatever the demand excess. Suppose, the demand is for 100 US dollars, but it is only 50 dollar which is available, so the rest is not met.

It makes the 50 more dollar available and sells it RBI is what RBI is keep the stock of reserves from past activities, it has to come. So, you can open RBI, if you can open RBI few things that inform you right away, they would also interview award their forest result. They called forest is short form abbreviate form of foreign exchange reserves, they will tell you what foreign exchange reserves 100 and 230 billion US dollar. They have also they keep gold, so RBI keeps a number of reserves items dollars pounds for just not dollar all foreign exchange whatever required pound dollar mark whatever Euro.

Now, they will keep and this mark is no longer there, then also the keep gold because gold is such an item is called in the best foreign exchange. You go to any country and exchange it, so RBI needs dollar, it can go through bank of England which as surplus sell gold and get the euro, dollars. So, one central bank and go to another central bank and buy it, if there is a market dealer in your, it can go to the dealer. Therefore, central banks keep just not for foreign exchange, you know central banks keep also gold bars. So, one day when you would become really rich, let me know how when you gold bars.

Now, you cannot let me know is a secret thing, if you revel that information tomorrow a thief will appear on your door step. So, just wait let us see we can have those kinds of question answer in in with our model that we will have. So, revaluation of exchange devaluation of exchange rate and e is a policy is called a key currency note. That name now what you just said the US dollar is the standard mode of exchange rate is called a key currency, key currencies in the world like dollars US dollars. There are not many US dollar can be used anywhere in the world to get it converted into any other currency.

Everybody is willing to accept it even in Iran they would not be unwilling to accept US dollar because even Iran sale oil, it earns in US dollar. So, it is called a key currency like every country has a currency, but one currency come become an international currency. I cannot go into all that you things, US has any undue advantages US have US dollars, today the currency which has advantage today is the chains currency is not enjoying anything. US has one of the highest if not the largest ever trade deficit in the world is guess into other thing which I cannot really explain.

Now, guess into other things very few one of as China does the very interesting thing chain as says it has the floating rate, but it actually controls it from a line and keeps it deliberately high against US dollars Bermuda. Bermuda has a fixed rate, so this kind of a question you can get an answer by typing something in google. They will give you the answer, but mostly what is happening is countries shifting out exchange rate system into flexible exchange rate system. Now, let me conclude this there also in India, initially we had we do not have so much, now earlier we had after the nineties, we had a semi floating exchanges rate system, so what is the semi floating exchanges system.

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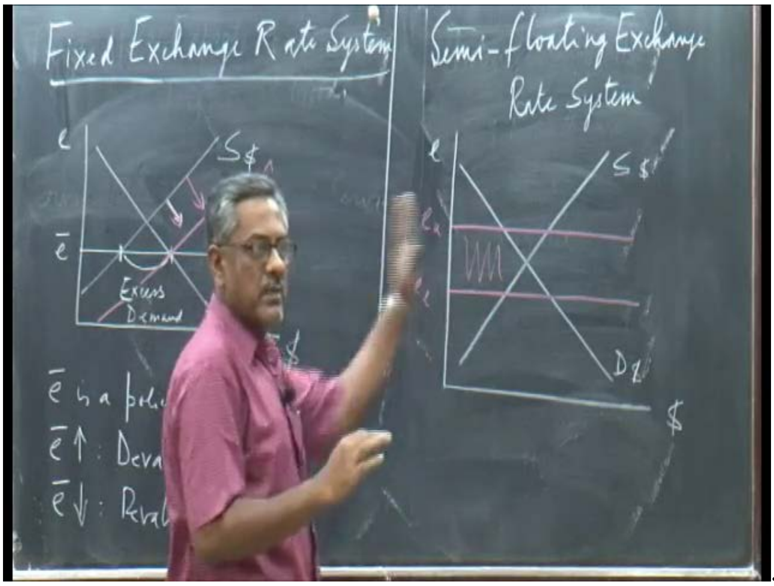

Semi floating exchange rate system, a semi flexible exchange rate system, so you have dollar and exchange rate demand for dollar supply of dollar, what they are doing in the semi floating exchange rate systems in India, we still probably have it is that as a policy we have a flexible exchange rate system. So, market clears that, but we specify in upper bound and a lower bound of the fluctuation e upper, e lower and exchange. It can fluctuate between this anywhere a demand supply shift, if it has a tendency to cross the boundary, then government or central bank intervals like a fix rate exchanges system to bring it back.

So, I allow my child to play in the garden, but if the child has the tendency to cross the fence, go out, then I controlling to pulling back semi floating exchange rate system. So, the specify has the policy, not only they then specify as a e value, but they specify the upper and the lower bound of the e value. They specify the upper and the lower bound of the e value if it has any tendency at any point to cross that line seems to be right.

Now, RBI in case of India does in specify that because it cross upper bound long time back it has never happen from 47, 48, it has does gone to 57 within a few months, never happens unless in the fixed exchanges system. Once in 1966, government of India RBI d value in Indian currency by over 60 percent, which means the exchange rate which was cost something. It went up by 67 percent of its value present value over night. So, devaluation in a fixed exchange rate system through a policy, it was announced something which was costing 100 rupees become 167 rupees over night, but right now it seems to be from 47 to 57.

It has gone, there is no upper bound and government is not controlling still number one, earlier what is happen in the 1990s, when the flexible system was put in place, which was replace which replace the fix system. We had a semi floating exchanges rate system, we allow the exchanges to go according to market forces within a bank any time other than lower limit or the upper limit. It controls and you know how it controls it by pumps in pumping in or draining out. Let me ask you that, I have thought some very important thing, today have you followed balance of payments account, exchange rate system, etcetera.

What is exchange rate, you followed that, it looks like the topic nine is nearly over, if you have followed it, then the final topic remains topic ten is the one macro model and open economy macro model at open economy macro model. I will teach you and is called the ISLM BOP model, so basically what will happen is we have done an ISLM model.

The most useful model in case of closed economy, you will had one more diagram there BOP curve balance of payments, BOP represent balance of payments, which will bring in the open economy in to the model. So, it is extension of the ISLM model to open economy and it is the very funny model because ISLM have two line IS and LM. Now, there will be third line, so for overall equilibrium, we would required ISLM and BOP intersection, so we will go through that the ISLM BOP model.