International Finance
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Lecture - 30
Movement of Exchange Rates in India

In session 30, we will discuss about the movement of exchange rate in India, after the determination of market determination of exchange rate regime; how the rupee develop over the year; what are the how the rupee exchange rate fluctuate over the year. The fluctuation leads to understand, because while designing a exchange rate policy, a exchange rate system, and exchange rate intervention process, you have to understand the ideal value of the rupee; whether rupee is tracking its fundamental value or rupee is appreciating or depreciating, you have to understand, and then only you can design what is called a reserve management policy. So movements of rupee over the year as along with the reform measure; how it had developed we discuss in this session.

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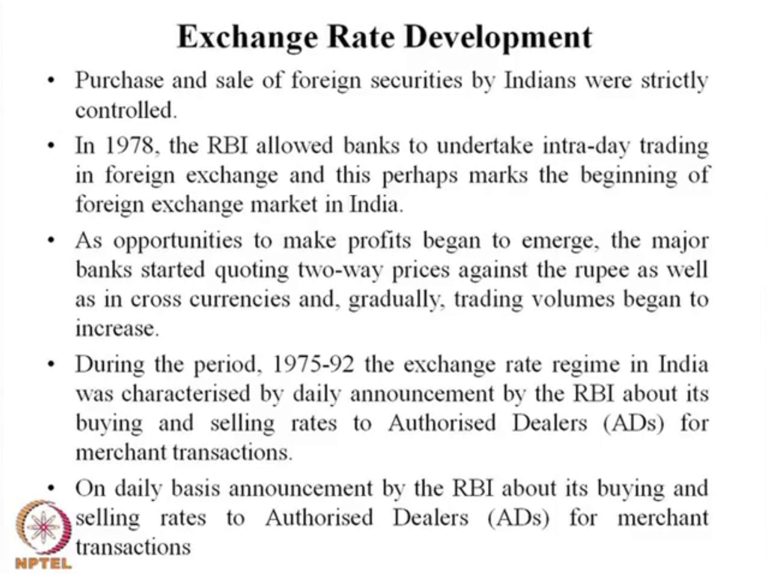

To understand this, we have to the purchasing power, purchase and sells of foreign exchange by Indians are strictly controlled; earlier if you see prior to reform, because the exchange rate policy develop along with the reform in foreign exchange market. So, prior to reform particularly, prior to 1991, the purchase and sell of foreign currency or foreign security by Indian were strictly controlled. So, we can as you and me as individual or a business man or a company, cannot purchase and sell foreign security without any kind of what is called permission from the RBI; permission from the government of India.

However in 1978, if you we have discussed earlier in our foreign exchange reform measure in India that time, we discussed that in 1978 the RBI allow the bank to undertake intraday trading in foreign exchange and this perhaps marks the beginning of the foreign exchange market in India. 1978, first time RBI allowed the banks for intraday trading in foreign exchange.

That time we can mention that the beginning of the market determinant exchange rate system started or beginning of the foreign exchange market started. However, only intraday trading there has lot of control measure was there; we cannot invest in current foreign exchange asset; individual cannot keep foreign exchange; company cannot keep foreign exchange; banks have to declare the foreign exchange reserve; everything was control; only intraday trading was trading for the bankers RBI allowed to, RBI liberalised the policy.

As opportunity banks to make profit because intraday movement gave some kind of profit to bank. So, as opportunity to make profit, the majors banks primarily few banks started trading in foreign currency; they gave two way quotation and against rupee as well as cross currency, and gradually a trading volume begin to increase and someway profit arise, because of the intraday trading measure. In 1970 this continue till from 1978 to 1992 and exchange rate regime was characterised by daily announcement by the RBI; what should be the exchange rate for different currency, and the authorised dealer that is, banks were and banks were doing the merchant transaction as per the declared level of, declared rate of RBI.

So, these are the control regime; there was no development of rupee; there was no development external value of the rupee; so in a controlled regime there was no market determination of exchange rate; and exchange rate was, there is no exchange rate movement at all. On daily basis announcement was given by the RBI for buying and selling of foreign currency and authorised dealers were doing the same transaction basis; only intraday position they were they were making some little bit of fee income earning they were doing that. So, there was no development of Indian rupee up to 92.

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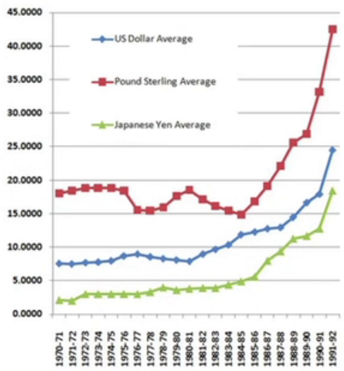
INR Movements:1970-91

Year	US Dollar Average	Pound Sterling Average	Japanese Yen Average
1970-71	7.5578	18.0000	2.0800
1971-72	7.4731	18.4000	2.0400
1972-73	7.6750	18.8425	3.0000
1973-74	7.7925	18.8000	3.0000
1974-75	7.9408	18.8000	3.0000
1975-76	8.6825	18.3933	3.0000
1976-77	8.9775	15.5733	3.0000
1977-78	8.5858	15.4292	3.3300
1978-79	8.2267	15.9658	4.0000
1979-80	8.0975	17.6550	3.5800
1980-81	7.9092	18.5042	3.7500
1981-82	8.9683	17.1096	3.9400
1982-83	9.6660	16.1356	3.8900
1983-84	10.3400	15.4174	4.3800
1984-85	11.8886	14.8668	4.8700
1985-86	12.2349	16.8467	5.6200
1986-87	12.7782	19.0722	8.0200
1987-88	12.9658	22.0872	9.4100
1988-89	14.4817	25.5959	11.3000
1989-90	16.6492	26.9179	11.6600
1990-91	17.9428	33.1930	12.7900
1991-92	24.4737	42.5151	18.4400



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So, but what are the movement of foreign currency that time if you see 1970 to 1991, I have taken the data of average data of US dollar pound sterling and Japanese yen. We will see Japanese yen is hundred as per the guideline, hundreds or two in a hundredth multiple, but others are in individual currency wise 1972 to 1992, I have given the data to you, you see the exchange rate movement in foreign currency market; pound sterling there was a dollar, was rupee was depreciating and against pound sterling against Japanese yen against US dollar.

A depreciation or appreciation not because of market fundamental, there was no market of foreign exchange. A depreciation appreciation was there because of devaluation or revaluation of currency. The devaluation and revaluation of currency was decided by the RBI by the government of India. If you see 1972 to 2000, 1992 the exchange rate rupee was depreciating over the year, and against pound sterling, against the US dollar, against Japanese yen; and this appreciation deprecation was primarily because of fundamentals of rupee RBI and government of India deciding what should be the a actual value of the rupee.

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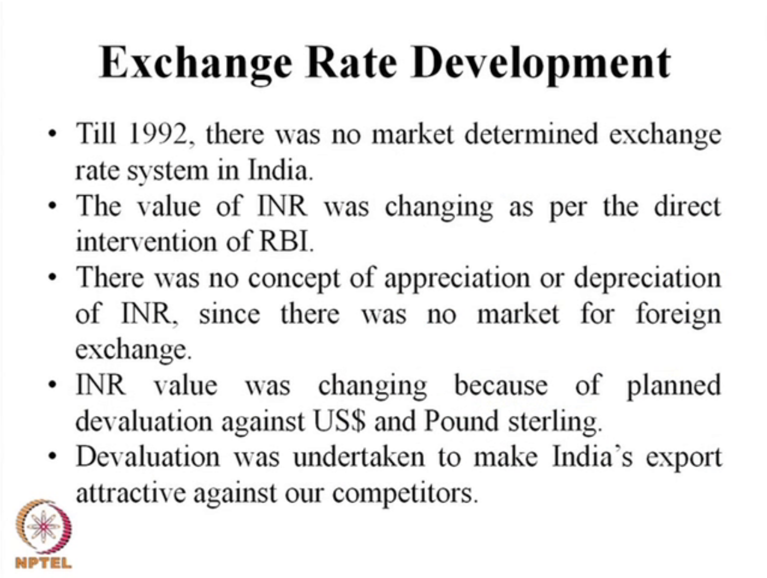

Till 1992 there was no market determinant exchange rate system in India. The value of the INR, that is, Indian rupee was changing as per the direct intervention by RBI. There was no concept of appreciation or depreciation of INR, since there was no market for foreign currency. The INR value, the rupee value was changing because of planned devaluation against US dollar and pound sterling and Japanese yen. RBI the government of India were deciding every year, once or twice in a year there was devaluation of rupee, or against pound sterling, against US dollar, against Japanese yen to take care of the export and import requirement.

Devaluation was undertaken to make the export attractive against our competitor currency and there was a fundamental reason that there was rupee value was depreciating over the year, because the government of India, the RBI wanted to make our export more attractive in nature.

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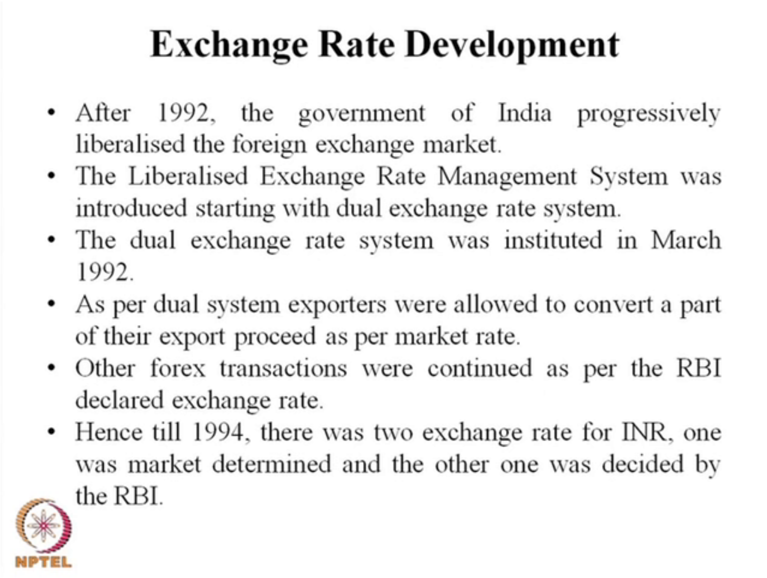

So, after 1992 the exchange rate market started we've adopted the policy of liberalisation. The government of India progressively liberalised the foreign exchange market after 1992. The liberalised exchange rate regime system was introduced starting with the dual exchange rate system. If you remember that some 92 to 94 there was a dual exchange rate system; under dual exchange rate system exporter were allowed to keep a part of the foreign exchange earning in their own in the, in the US dollar or any other currency, and part and remaining part they were converting into as per the RBI declare exchange rate.

As per the dual exchange rate system exporter will love to convert part of their export proceed as per the market line. A part of the export proceed as per the RBI declare exchange rate, and till '94 this dual exchange rate system was continuing. A part together RBI was deciding the value of the rupee, at the same time market also deciding the value of the rupee, and two systems are continuing till '94 for this reason it was called dual exchange rate system. In during the dual exchange rate system there was some development of rupee, and there were some movements of movements in the rupee, and there was an exchange rate market developed slowly.

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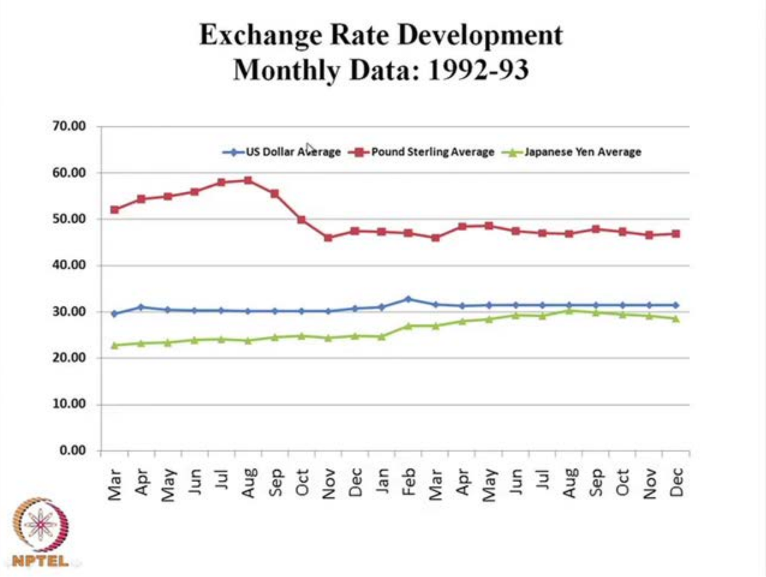

If you see the rupee value during the time, I have taken the monthly data from 92 to 1992 to 93, nearly 2 years data I have taken into account. You see as US dollar, in US dollar in blue line was around 35 rupees, 34, 32 rupees and moving like that. Similarly, pound sterling was also moving like this, there were decline in pound sterling value rupee was appreciated against pound sterling value.

However, rupee was remaining at 32, 33 against the US dollar, and Japanese yen rupee was depreciating against Japanese yen and this indicate the US dollar has become major currency for us and we're our focus was on US dollar and earlier the pound sterling as a focus area of currency has declined over the year, and this lead to this 92 to 93, 94 the dual exchange rate system tried address the value of the rupee and significantly the exchange rate market developed, and there was a dual exchange rate system try to identify the true value of rupee.

At the same time RBI was declaring the exchange rate and market also declaring the exchange rate and this dual exchange rate system try to develop the actual value of the rupee.

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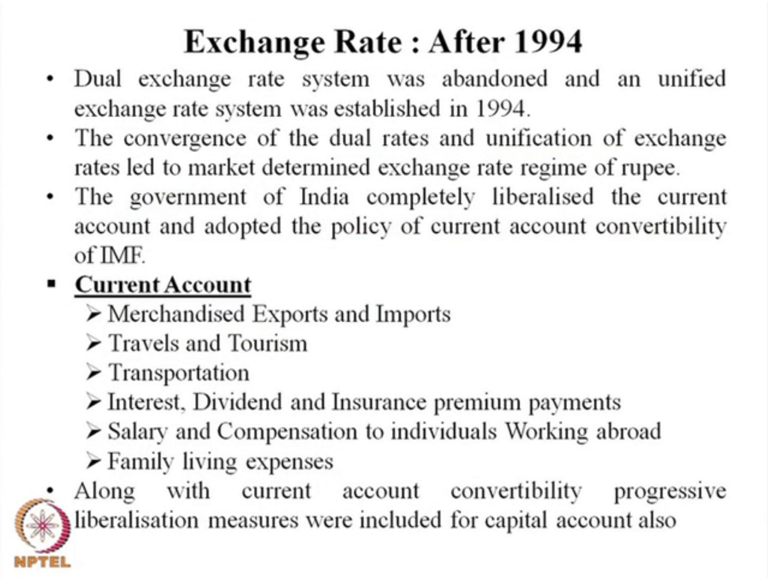

And after 94, dual exchange rate system abolish, and system of abundant and unified exchange rate system started current account was liberalised, and the convergence of dual exchange rate and unification of exchange rate lead to market determinant exchange rate regime you have for rupee. So, the current account the government of India completely liberalised the current account and had adopted the policy of current account convertibility as per the IMF agreement.

So, as per the current account; current account as we discussed earlier current account is a merchandise export import account the invisible trade account, the trade and tourism side, transportation side, dividend interest payment side, insurance premium side, salary compensation to employee side, family living expenses and all these are the part of the current account, where day to day transaction takes place.

If this current account has been liberalised in 92, 93, 94 and completely liberalised there was no control on current account, and there was no control on the part of the RBI on exchange rate. And RBI did not declare any kind of exchange rate for market, RBI rate was indicative in nature it was a of the market determined exchange rate all transactions were taken place, after 94; and this 94 was a significant year for Indian foreign exchange market because the rupee started finding its own value for different against different currency. So, if you there was no control on rupee movement as per the current account convertibility are there.

However, capital account convertibility tills the government of India the RBI control, and there has no capital movements were control as per the policy of the government of India, as per the policy of the RBI.

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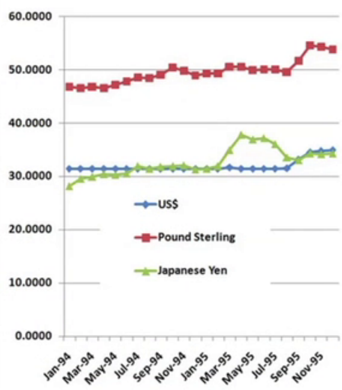
Exchange Rate : After Current Account Convertibility

Year /Month	US$	Pound Sterling	Japanese Yen
Jan-94	31.3705	46.7970	28.1179
Feb-94	31.3700	46.4871	29.5424
Mar-94	31.3727	46.7971	29.8376
Apr-94	31.3711	46.4942	30.3346
May-94	31.3705	47.1676	30.2888
Jun-94	31.3705	47.8267	30.5522
Jul-94	31.3707	48.4890	31.8327
Aug-94	31.3726	48.3863	31.3472
Sep-94	31.3714	49.0444	31.7709
Oct-94	31.3714	50.3967	31.8764
Nov-94	31.3910	49.8302	32.0332
Dec-94	31.3880	48.8625	31.3103
Jan-95	31.3739	49.3578	31.4523
Feb-95	31.3779	49.3380	31.9248
Mar-95	31.6537	50.6000	34.8963
Apr-95	31.4132	50.5919	37.7235
May-95	31.4185	49.9048	36.9455
Jun-95	31.4017	50.1047	37.1351
Jul-95	31.3789	50.0545	35.9832
Aug-95	31.5808	49.5849	33.5040
Sep-95	33.2038	51.7342	33.0550
Oct-95	34.5788	54.5599	34.3129
Nov-95	34.7405	54.3393	34.1173
Dec-95	34.9568	53.8458	34.3349



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However, current account the significant liberalisations were there and RBI that has not controlling the current account transaction; and if you see the development process, if you see the exchange rate exchange rate movement after 94-95, I have taken up to 95 monthly data average value of, the average value of US dollar, pound sterling and Japanese yen. Japanese yen I have taken here 94 January to December 95.

So, it is nearly 2 years data here, twenty four month data and sees the movement of a Indian currency, India rupee. Here rupee Japanese yen appreciating rupee is depreciating again in Japanese yen, similarly against pound sterling rupee is depreciating a rupee first time covered the 50 rupees for pound sterling in 95 July 95, and against US dollar if you see the green line, the blue line of US dollar the rupee is remain stagnant against US dollar somewhere near 32, 33 and again July 95 rupee started depreciating against the US dollar and first time it crossed 35 rupees; and this indicate that Indian rupee finding its own value against a major currency of the currency of the world, because of the current account current account convertibility.

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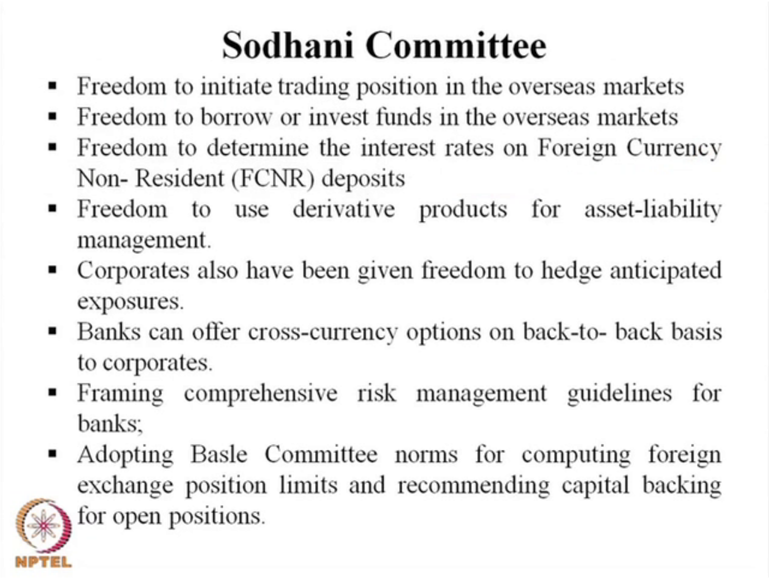

Current account convertibility we provides some kind of market determinant exchange rate for rupee, and after 94-95 that after the current account convertibility government of India established three different committee. The first committee was Sodhani committee; very important for the foreign exchange market the Sodhani committee. Identify a different area for more market determinant exchange rate, and they Sodhani committee identify how to develop the foreign exchange market, how to provide more opportunity to banker, how to provide new product to the foreign exchange market, what kinds of new requirements foreign exchange market should have, so that there should be risk management practices develop along with the development of market determined exchange rate regime.

So, Sodhani committee identify different area for liberalisation of foreign exchange market as per the recommendation of Sodhani committee, if you see the actual guideline actual recommendation you will find that the Sodhani committee recommended to government of India to the RBI, there should be freedom to initiate trading position in overseas market. So, bank should be allowed to trade in foreign currency in overseas market, there was a primary requirement because it is the banking sector which actually provide the foreign currency; which actually direct actually interact with the requirement of individual, requirement of business group for foreign currency, and they should be allowed to trade in foreign currency in open in overseas market.

Freedom to borrow on or invest in funds in the overseas market, there should be, bank should be given the freedom to borrow and invest in foreign currency market. Freedom to determine the interest rate on foreign currency non resident deposit, the significant part of foreign exchange reserve is coming from invisible for a non resident deposit. So, bank could be decided, bank should be given the freedom to decide the interest rate on FCNR deposit.

Similarly, since we have adopted the market determined exchange rate regime, there will be risk in foreign exchange. The fluctuation of foreign exchange is a risk both for the exporter, importer and all other individual who generally transact in foreign currency. So, there should be risk management product to absorb this risk and there should be product to design, should be given to the banker in the form of derivative product for asset liability management in foreign currency. The corporate also should be given the freedom to hedge their unanticipated exposure because corporate generally handle the export import side.

So, they have the foreign their earning, their liability in foreign currency, in any fluctuation in foreign currency is risk for them. They should be allowed to hedge their unanticipated risk, any kind of unanticipated risk should in a exposure in foreign currency by the corporate they should hedge it and they should be allowed to hedge it, that is a requirement for the for them Sodhani committee recommended this.

Similarly, banks can offer cross currency option on back to back basis to corporate because corporate asset liability denoted in not only one currency, but multiple currency. So, the cross currency options back to back basis should be given to the banker to offer to the corporate. Similarly, framing a comprehensive risk management guideline for bank, bank required now because banks are now handling market determined exchange rate policy.

So, there should be there should be comprehensive risk management guideline particularly in exchange rate side for the banking sector. There should the RBI should design the risk management guideline for the banking sector, that was the recommendation of Sodhani committee.

Similarly, adopting Basle to recommend Basle committee recommendation on computing foreign exchange position, limit and capital backing position for foreign exchange open position; because banks are now exposed to foreign exchange volatility and banks are handling the foreign exchange side.

Whenever there is a open position there should be there will be risk for the bank, and bank should have sufficient capital to absorb this risk as a that the risk of the foreign currency open position, they foreign currency open position should be backed by actual capital, and that capital requirement decided by the Basle committee. And this Basle committee recommendation for the risk management in foreign currency area should be adopted by the bank as per the requirement of the Sodhani committee.

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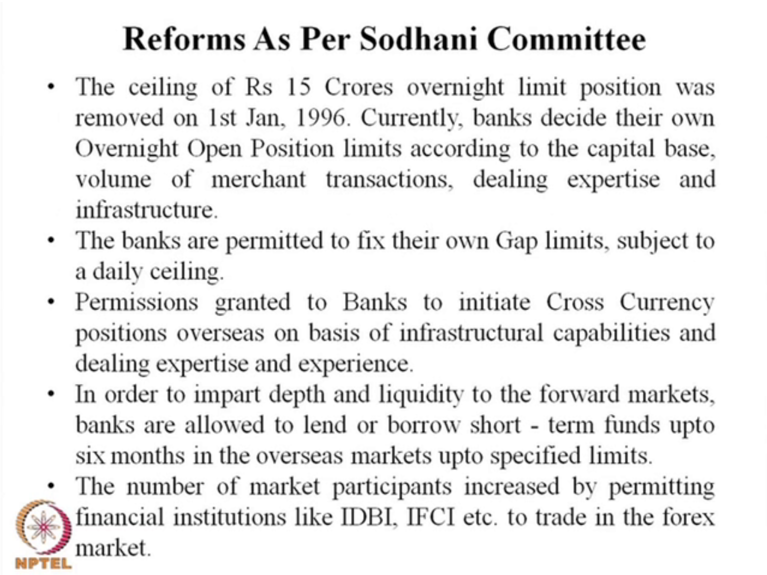

If you analyse the Sodhani committee recommendation and RBI's reform the foreign exchange market. As per the recommendation RBI, RBI the ceiling of 15 crores overnight borrowing limit overnight limit in open position was removed. In 96 currently banks decided, currently banks are deciding their own overnight position according to the capital base. The capital requirement and the foreign exchange risk. Both are now aligned together as per the recommendation of Sodhani committee.

Similarly, the RBI also allow the bankers, bankers the merchant transaction, dealing expertise merchant transaction for the foreign exchange side, RBI allow the bank the merchant banker, the merchant trader, to trade in foreign currency and develop the risk management practices and handle the open position. Similarly, the banks are permitted to fix their own gap limit subject to daily ceiling, what is the gap limit for day basis; there should be there should be designed by the banker themselves as and when they should have a daily made as per the overall position.

Permission granted to bank to initiate cross currency position overseas on the basis of infrastructure facility, capability and experiences. Each bank can decide what should be the level of cross currency position. They should have in overseas market that also recommended by RBI recommended by the Sodhani committee and accepted by the RBI.

In order to import, impart debt and a liquidity to forward market because forward market they developed as per the as in developed over the year, as per the recommendation Sodhani committee because forward market provide what is called risk management product for the corporate, for the bank. And the over the year the forward market develop, but there was no in depth in forward market there was no liquidity in forward market, and RBI Sodhani committee has recommended a significant guideline to how to open up open the debt market for the forward market for new banks financial institution. So, that there will be more liquidity in the depth in forward market that also accepted by the RBI, and RBI allow new bank financial institution authorised dealer for trading in for providing the forward market operation to corporate.

Similarly, the number of market participant increased because of the new recommendation and RBI accepted these and new banks like IDBI bank, ICICI bank and also many financial institutions, they were given the permission to trade in foreign currency, this is the recommendation of Sodhani committee.

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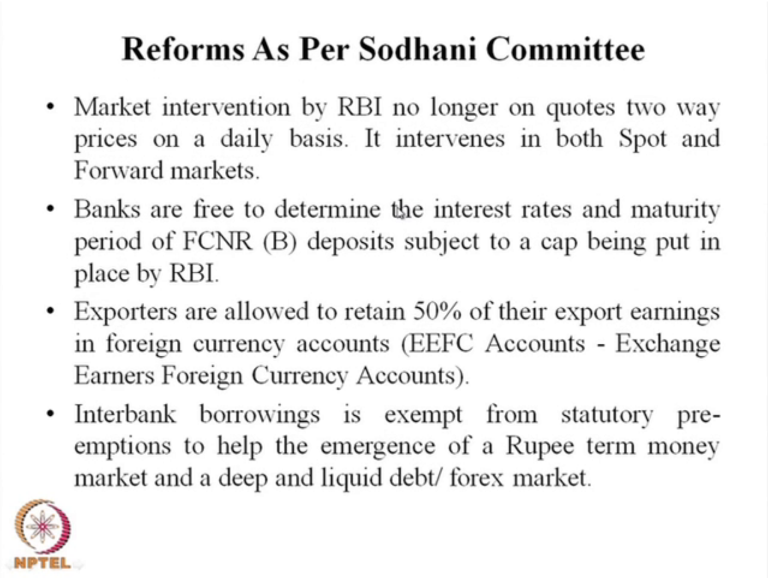

Similarly, if you see a other reform measure Sodhani committee provided that market intervention by RBI should be there, but there should be limited intervention should be there; because the RBI intervention in spot and forward market not good, it intervenes both for spot and forward market. Market intervention by RBI is no longer on quote two way prices on a daily basis. It is intervene in both spot and forward market because whenever there is a requirement for the intervention of by on the part of RBI it should be intervene both forward market and the spot market together. Banks are free to determine an interest rate and liquid maturity on FCNR, B account. As per the Sodhani committee recommendation RBI accepted, these exporters are allowed to retain 50 percentage of their export earning in foreign currency account, EEFC account and there is no requirement for them to convert the foreign currency immediately.

Similarly, interbank borrowing is exempted from SLR requirement, for CRR requirement and this has been accepted by the RBI, and that significant part of the money released because of the there is no requirement for CRR, SLR for interbank forex borrowing that also part of the Sodhani committee recommendation.

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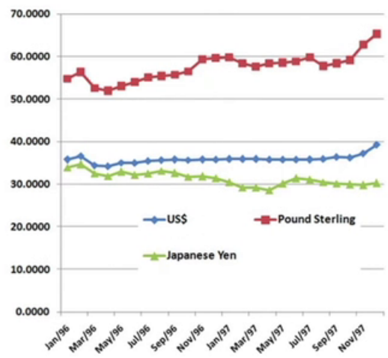
Reforms As Per Sodhani Committee

Year /Month	US$	Pound Sterling	Japanese Yen
Jan-96	35.7380	54.7688	33.9103
Feb-96	36.6343	56.2717	34.6312
Mar-96	34.4084	52.5809	32.5054
Apr-96	34.2391	51.8774	31.8697
May-96	35.0105	52.9799	32.8993
Jun-96	34.9824	53.9543	32.1413
Jul-96	35.5050	55.1538	32.5274
Aug-96	35.6955	55.3299	33.1169
Sep-96	35.7284	55.7217	32.5756
Oct-96	35.6406	56.5051	31.7257
Nov-96	35.7353	59.3710	31.8032
Dec-96	35.8352	59.6645	31.4642
Jan-97	35.8699	59.8257	30.4934
Feb-97	35.8892	58.3429	29.2016
Mar-97	35.8684	57.6255	29.2302
Apr-97	35.8139	58.3987	28.5547
May-97	35.8145	58.4707	30.1870
Jun-97	35.8108	58.8539	31.3243
Jul-97	35.7372	59.7555	31.0581
Aug-97	35.9200	57.6805	30.4697
Sep-97	36.4318	58.3107	30.1558
Oct-97	36.2270	59.0814	29.9093
Nov-97	37.2358	62.8034	29.7565
Dec-97	39.2168	65.1984	30.2357



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As per the Sodhani committee recommendation there was further development in a foreign exchange market, there was more depth in forward market, there was more participant in the forward foreign exchange market, and there was more freedom on the part of bank to deal to trade in foreign currency market, which has given a new importance in exchange rate system.

If you see, I have given the data from month wise data from 96 January to 97 December, two years data; how because of the Sodhani committee, how rupee has developed over the year. You see rupee little bit depreciated because of the more over the year and remain stable there was no significant appreciation depreciation against dollar.

However similarly, against pound sterling also there was no significant development in case, in appreciation depreciation rupee because of the Sodhani committee recommendation. Rupee got its own fundamental value because there was more participants in the foreign exchange market and rupee discover its own value over the year. If there is a, reform measure is not adequate, reform measure is not segmented in nature, there will be more affable in foreign exchange market, this kind of affable were there in many emerging economy when they suddenly open up their current account.

However, in case of current account, in case of India despite current account liberalisation our affable in foreign exchange market is not there, rupee has not appreciated depreciated significantly and any against any particular currency; because the reform measure the opening of the current account accompanying with many kind of reform in foreign exchange market for the development of product side, for development of the market participant, for the liberalisation of a FII, FDI investment. So, this has this has not significantly affect our in foreign exchange market.

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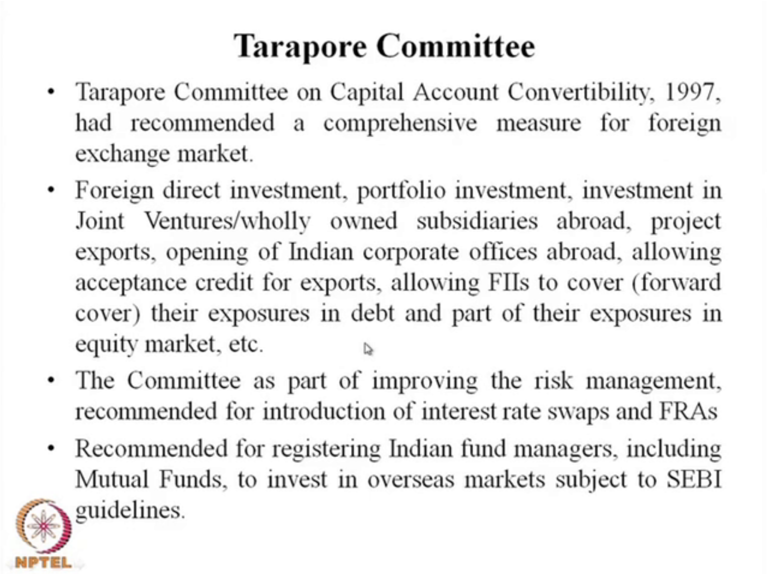

Similarly, if you see another committee recommendation was the Tarapore committee. Tarapore committee was appointed by RBI along with the government of India in 97 for further comprehensive measure, to provide comprehensive measure for the, what is called foreign exchange market development side. Tarapore committee primarily in the primarily given the recommendation for the further development in towards, what is called the FDI investment, FII investment, joint ventures side, foreign exchange debt market and also foreign exchange risk management side, and there is a and mutual fund side, how they were to be a included in the foreign exchange market, there was a primary recommendation of the Tarapore committee.

If you see the Tarapore committee, Tarapore committee on capital account convertibility in 97 has recommended a comprehensive measure for foreign exchange market. This because up to 96-97 from Indian rupee has identify its position or value as per the current account convertibility concept, but Indian rupee and Indian; you know investor should also be allowed to invest in foreign exchange, foreign asset, that requirement requires what is called a liberalisation in capital account concerned.

The capital account was controlled significantly till 96- 97. However, the Tarapore committee recommended that capital account should be progressively liberalised. So, as to allow foreign direct investment, foreign portfolio investment, joint venture, wholly owned subsidiary, abroad project, export project, project related export, opening of the Indian corporate office by Indian company, allowing the acceptance of credit for export, for allowing more FII to in the debt market, for allowing more equity participation, equity investment in by FII.

These are the some recommendation on the part of the capital account convertibility for the as per the Tarapore committee. The Tarapore committee also recommended that along with the capital account liberalisation there should be improvement in risk management practices, there and should be more risk management product, in the foreign currency market, in the form of interest rate swap foreign futures market derivative product, that requires that because rupee is fluctuating, rupee is as per the market determination exchange rate this fluctuation will be there, this will not should not affect our foreign exchange stability side.

So, recommendation for registering Indian fund manager particularly the mutual fund to invest in overseas market, as per the SEBI guideline, they are also part at of the recommendation by the Tarapore committee.

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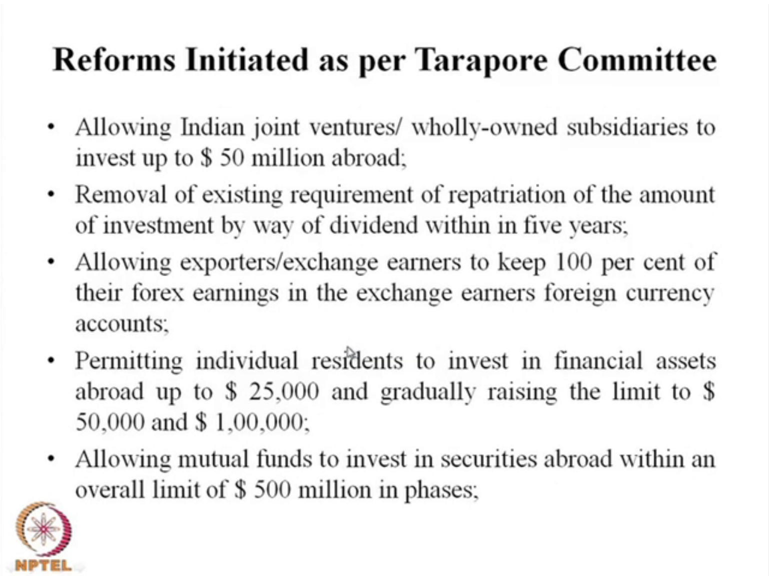

If you see the Tarapore committee recommendation, there has been some significant reform measure government of India and the RBI have initiated. Now, the RBI has allows Indian joint venture wholly owned subsidiary to invest 50 million in abroad. Similarly, removal of existing requirement for repatriation of amount of investment by way of dividend within 5 years, repatriation in dividend should not be there any time. They can the dividend can be repatriated by the investor.

Similarly, allowing an exporter exchange earner to keep 100 percent of their FOREX earning in foreign exchange, in foreign currency account. The exporter, the exchange earner should not keep the foreign exchange earning 100 percent in foreign currency in foreign currency account. Permitting the individual resident to invest in financial asset abroad up to 25000 and gradually this has been increased to 51 lakh recently.

Similarly, the mutual fund mutual fund to invest in security abroad within a overall limit of 500 million in different phases. RBI also allows the mutual fund investor to invest up to 500 million in phase manner in abroad security. This significant liberalisation is a, if you consider this is a significant liberalisation as per the capital account convertibility concern.

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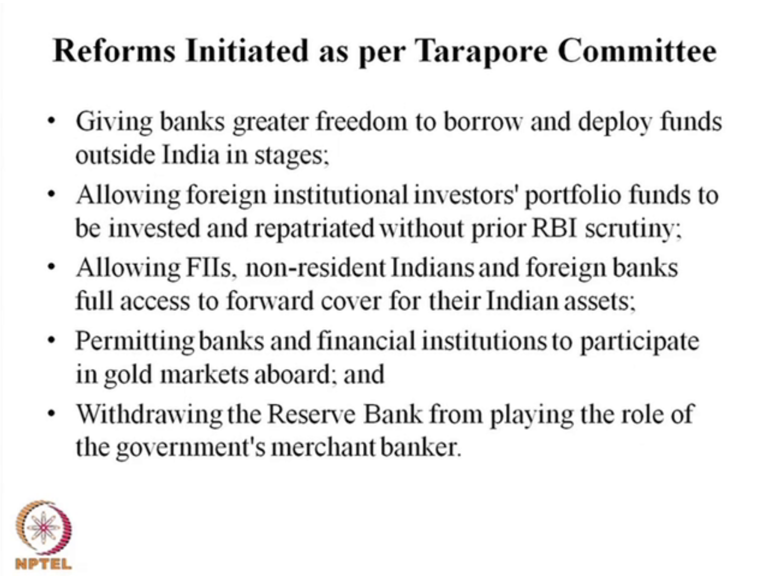

The reform measure further initiated by the bank; the bank given more freedom in foreign currency borrowing, foreign currency deployment of funds, similarly the foreign institutional investor allow in significantly allow in a portfolio investment side, there also allow repatriate the portfolio, as per the RBI. There is no requirement for the RBI guideline, anytime can they repatriate the portfolio.

Similarly, all FIIs non resident Indians and foreign banks fully access to for cover forward cover of their asset because they were allowed to cover up their open position in there is any because of in foreign currency assets. Similarly, the banks and financial institutions were allowed to participate in gold market abroad.

Similarly, withdrawing the reserve bank from playing a role of government merchant banker, the government as reserve bank, as a merchant banker for the government, this guideline has been withdrawn, and RBI also participant in a foreign exchange market as a bankers not as a as a controller of foreign exchange market, not as a players in the foreign exchange market.

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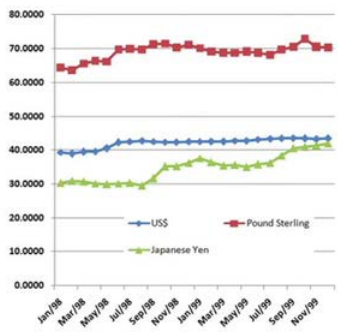
Reforms Initiated as per Tarapore Committee 1998-99

Year /Month	US$	Pound Sterling	Japanese Yen
Jan-98	39.3843	64.3730	30.3232
Feb-98	38.8871	63.7379	30.9259
Mar-98	39.5021	65.6088	30.6574
Apr-98	39.6572	66.3530	30.0718
May-98	40.4708	66.2206	29.9410
Jun-98	42.2560	69.7157	30.1095
Jul-98	42.5102	69.9254	30.2311
Aug-98	42.7563	69.8113	29.5463
Sep-98	42.5217	71.3940	31.6068
Oct-98	42.3325	71.5267	35.1543
Nov-98	42.3810	70.4414	35.1674
Dec-98	42.5530	71.1057	36.2409
Jan-99	42.5061	70.1351	37.5883
Feb-99	42.4656	69.2033	36.4484
Mar-99	42.4465	68.8342	35.5165
Apr-99	42.7250	68.7654	35.6989
May-99	42.7712	69.0683	35.1086
Jun-99	43.1325	68.8656	35.7339
Jul-99	43.2850	68.1295	36.1820
Aug-99	43.4594	69.8302	38.3358
Sep-99	43.5349	70.6132	40.6477
Oct-99	43.4418	72.9997	40.9722
Nov-99	43.3968	70.4815	41.4133
Dec-99	43.4451	70.3149	41.9457



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Similarly, if you see as per the capital account convertibility as per the recommendation of the Tarapore committee there has been significant development in the foreign exchange market. If you see the foreign exchange market over the year from as after the recommendation in 97 98 to 99, how the rupee developed. If you can analyse this, you see that January 98 to December 99, 2 years monthly data I have given, during this period the recommendation of Tarapore committee was implemented, many policy measure has been initiated as per the recommendation.

This recommendation policy measure has given new importance to rupee to identify its own value. This dollar, US dollar pound sterling and Japanese yen if you see the US dollar despite the reform measure US dollar remain stable against rupee, rupee remain stable against US dollar despite reform measure.

Similarly, pound sterling also remains stable during that time, there was a little bit depreciation of pound sterling or appreciation of rupee was there. Japanese yen also remain stable, so the reform measure has given more stability to rupee, there is no fluctuation or significant fluctuation or volatility in rupee against pound sterling, against US dollar, against Japanese yen, these are three major currencies in the world. And this stability of rupee indicate that our reform measure has been consolidated over the year, and with the opening of the current account with the gradual reform in the capital account, there is no such kind of high volatility against in Indian rupee, this is a remarkable achievement as per as the foreign exchange market development concerned.

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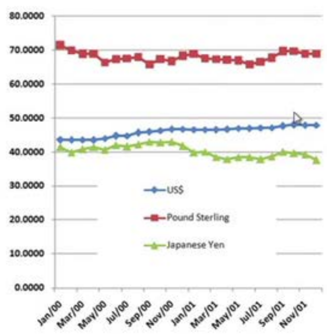
Reforms Initiated as per Tarapore Committee 2000-01

Year /Month	US$	Pound Sterling	Japanese Yen
Jan-00	43.5500	71.4315	41.5030
Feb-00	43.6136	69.9235	39.8961
Mar-00	43.5857	68.9031	40.8853
Apr-00	43.6388	69.0473	41.4181
May-00	43.9829	66.4002	40.6857
Jun-00	44.6863	67.4543	42.0848
Jul-00	44.7788	67.5898	41.5283
Aug-00	45.6800	68.0240	42.3007
Sep-00	45.8883	65.7598	42.9735
Oct-00	46.3445	67.3354	42.7603
Nov-00	46.7789	66.7335	42.9655
Dec-00	46.7496	68.2814	41.7262
Jan-01	46.5439	68.9251	39.9056
Feb-01	46.5167	67.6819	40.0453
Mar-01	46.6205	67.3891	38.4623
Apr-01	46.7835	67.2185	37.8933
May-01	46.9202	66.9311	38.5267
Jun-01	47.0038	65.8878	38.4225
Jul-01	47.1393	66.6468	37.8441
Aug-01	47.1265	67.6859	38.7280
Sep-01	47.6420	69.6910	40.1204
Oct-01	48.0198	69.7355	39.6182
Nov-01	47.9947	69.0280	39.2312
Dec-01	47.9176	68.9801	37.6112



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Similarly, if you see after 2000, after the reform measure reforms initiated as per the Tarapore committee. After 2000 to 2001 these two years also the data, January 2000 to December 2001, 2 years data, you see a there as a little bit deprecation of rupee is there, but this depreciation is as per the market requirement, as per the purchasing power of the rupee, and this appreciation required because other currency has appreciated other currency, particularly the competitor currency has depreciated against US dollar. This depreciation requirement is there because to make a rupee more attractive for exporter.

However, there is no significant volatility in the rupee value against dollar, against pound sterling and Japanese yen; this is a remarkable achievement on the part of the reformers where they have reformed the capital account and also current account.

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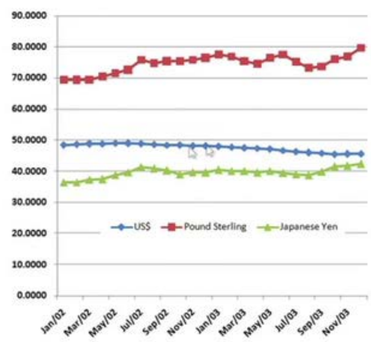
Reforms Initiated as per Tarapore Committee 2002-03

Year /Month	US$	Pound Sterling	Japanese Yen
Jan-02	48.3287	69.3786	36.4705
Feb-02	48.6893	69.2850	36.4571
Mar-02	48.7371	69.3690	37.2251
Apr-02	48.9183	70.5315	37.3833
May-02	48.9968	71.5265	38.7587
Jun-02	48.9665	72.5221	39.6516
Jul-02	48.7635	75.8384	41.3185
Aug-02	48.5852	74.7145	40.8065
Sep-02	48.4419	75.3056	40.1844
Oct-02	48.3714	75.3370	39.0531
Nov-02	48.2545	75.8486	39.7055
Dec-02	48.1405	76.3376	39.5069
Jan-03	47.9328	77.4720	40.3643
Feb-03	47.7358	76.9166	40.0125
Mar-03	47.6395	75.4414	40.1455
Apr-03	47.3758	74.6074	39.5114
May-03	47.0816	76.4113	40.1102
Jun-03	46.7098	77.5615	39.4847
Jul-03	46.2300	75.1192	38.9583
Aug-03	45.9330	73.2171	38.6654
Sep-03	45.8471	73.7020	39.7655
Oct-03	45.3873	76.1227	41.4537
Nov-03	45.5221	76.8867	41.6891
Dec-03	45.5880	79.7114	42.2957



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Similarly, in 2002-03 onwards also if you see that also rupee, during this period January 2002 to December 2003 the two years period rupee appreciated against pound, against dollar. Similarly, against pound sterling little bit, against Japanese yen also. This is the first time in the achievement of last ten years of reform measure rupee appreciated against pound sterling, against Japanese yen, against US dollar. This depreciation was affected our export and realising this because during this period there was significant inflow of foreign currency in the form of FII in the form of FDI into India. This inflow has appreciated domestic rupee; and because of this reason rupee appreciated over the January, some extent during the May, March 2002 till November 2003 there are seven to eight months period rupee was depreciated.

This is a concern this was a very large concern on the part of the exporter, because when rupee appreciated exporter, export will be dearer to exporter. This way this will affect our export earning and this realised, by realising this RBI intervened in the foreign currency market and after that rupee started depreciating against US dollar, because against our competitive currency rupee was appreciating. Against our pound sterling US dollar and Japanese yen rupee was appreciating, this appreciation of the rupee beyond the fundamentals value is a matter of concern and this realised by the, our RBI and the government of India and they had intervened in the foreign exchange market to arrest the appreciation of rupee.

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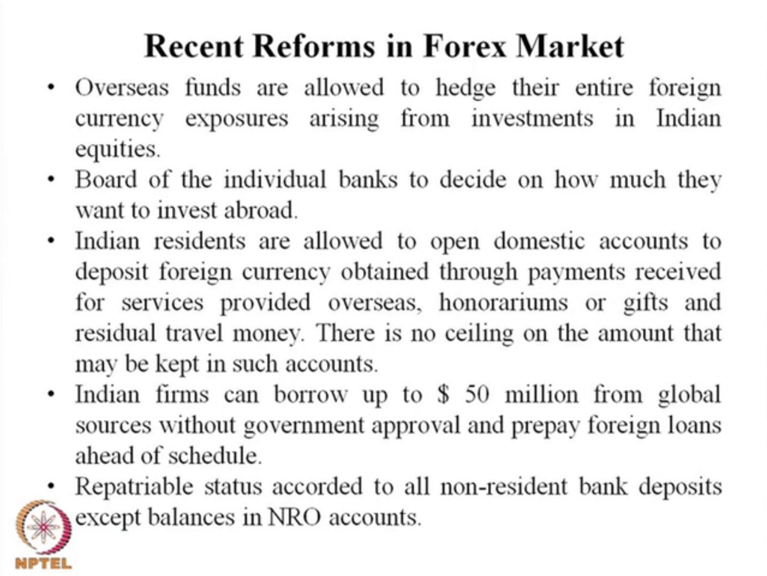

If you see recent reform measure there has been significant reform measure recently the RBI the government of India has further liberalised the foreign exchange market, particularly the current capital account side. The capital account side liberalisation was undertaking as two parts; one part is called the part of the FDI side, another part is called towards the FII side. In FDI side, the MRTP act was further liberalised. MRTP was abolished competition commission act was introduced, many industry company sector, joint ventures subsidiaries there was a liberalisation measures were introduced, foreigners were allowed to participate in foreign direct investment side, many resources or a industrial segment.

There has been significant liberalisation for foreign direct investment side overseas and FII side, further liberalisations were there for the FII to invest in equity, debt market, and overseas funds are allowed to hedge their entire foreign exchange exposure arising for investing in Indian equity market. Board of individual banks were allowed to decide, how much foreign exchange investment abroad should be there.

Indian residents are allowed to open domestic account to deposit foreign currency obtained through payment receipt for say services export and services side, honorarium side, gift side, and also travelling side, there was no ceiling on the amount that may be kept in such account. Similarly, Indian firms can borrow up to 50 million from global sources without government approval and pre pay foreign loan ahead of scheduled reportable status accorded to all resident banks deposits accept balance in a narrow account.

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So, these are the measures recently undertaken by the government of India by the RBI. Similarly, if you see further reform measures like for a NRI capital transfer, for NRI up to one lakh dollar, one lakh US dollar out of sale of immovable property has also inheritance of inheritance and legacy has been permitted. The NRI capital transfer is allowed up to one lakh dollar, limit for Indian direct investment under the automatic route has been doubled to 100 million dollar corporate have been accorded greater freedom to raise and prepay foreign currency borrowing corporate have also been accorded greater freedom to raise short term supplier, short term buyers credit for import.

Similarly, FII have been allowed to trade in exchange, traded derivatives in India. Similarly, corporation are free to rebook cancel foreign exchange forward contract. Rupee based currency option future has been introduced, interest rates currency swap has been introduced recently, and these are the measure on the part of capital account liberalisation. So, to allow the more inflow of foreign inflow of a foreign currency into India, at the same time development of foreign exchange market for the risk management practices and these two together only give stability to Indian rupee and Indian rupee can get a market value as per its fundamentals.

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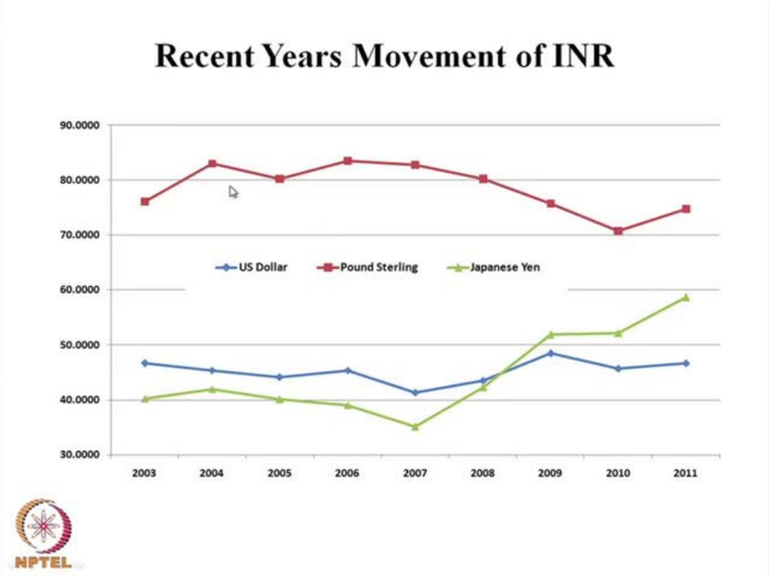

This has lead to development of foreign exchange market further, if you see recent year the movement of dollar, recent year movement of Indian rupee against pound sterling dollar and Japanese yen, there has been significant depreciation of rupee against pound sterling up to 2006, the depreciation primarily due to the recession in the world market. Similarly, if you see against the dollar rupee was fluctuating and the rupee fluctuation has significant, a rupee into significant after 2008, there has been significant depreciation of rupee after 2008.

There has been a withdrawal of FII investment there has been reduction of FOREX earning in the form of export, individual earning has been reduced, and also the inflow of foreign currency a foreign currency has reduced and this has depreciated rupee. Further a rupee has crossed the beyond 50 and this is against of the fundamental value of the rupee, and because of this reason importers were more costly for the Indian side, and however export was not picking up and this has created a this has created a problem for the management of Indian rupee side, and RBI further liberalised the rupee, further liberalised foreign currency market for the for allowing more FDI more FII investment in debt and equity market there for foreigners.

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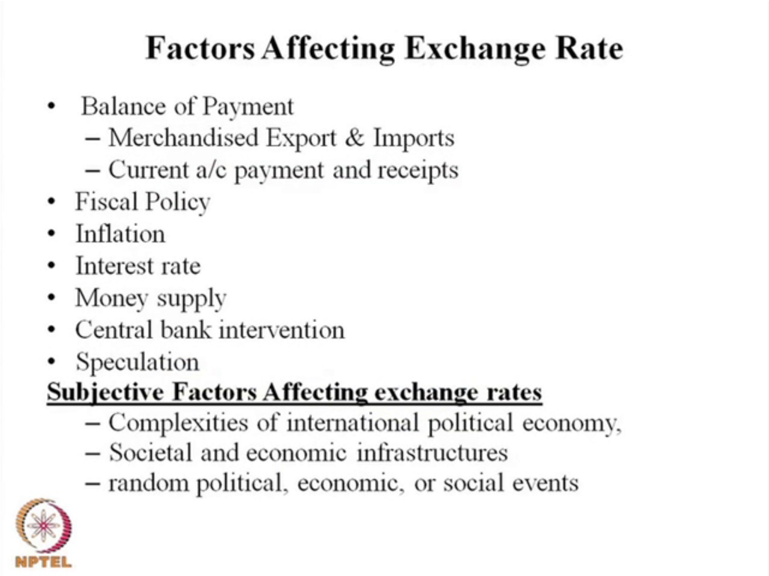

And if you see the Japanese yen also there has been depreciation is there against has been a rupee was depreciated against Japanese yen also, and this has affected our export, our foreign currency management side, and foreign currency management need to be addressed further, because we have to identify the depreciation of rupee whether it is linked to our fundamentals, or is it speculative in nature. If it is a linked to our fundamental we have to reform the fundamentals further by moving towards more convertibility of rupee.

Similarly, if it affect if it linked to speculative in nature you have to address the speculative dealings in rupee because speculation there is no requirement of direct intervention in the market, by purchasing or selling of US dollar; because there is no end to speculation. Speculation has to be addressed fundamentally, the fundamental part of speculation to identify whether there is a holding of dollars by bankers, by exporter or any other foreign currency traders, because the holding of dollar is the this means this has for getting a further appreciation of depreciation of rupee is against the fundamental value of the rupee.

So, we have to take into account the identify, what is the fundamental value of rupee, rupee is tracking the fundamental value a rupee is depreciating beyond the fundamental value then there is a requirement of reforms. While deciding the reform measure you have to see whether that will requirements are there for further liberalisation of capital account, or to address the issue of speculation in foreign currency market. These are the primary thing you have to decide the regulator should decide before intervening in the foreign exchange market.

Then question is here which is the factor that affects the fundamental value of the rupee. As we discussed earlier the fundamental value of the rupee decided by the export import, our current account deficit or current account surplus, because when export current account deficit is there rupee may get their value, current account deficit is there rupee may depreciate. Further similarly, when you discussed about fiscal policy side, fiscal policy also affect their value of the rupee.

Fiscal policy in the form of taxation high corporate tax, fiscal policy in the form of excessive government borrowing, fiscal policy in the form of excessive high interest rate in the economy, there also effect the fundamental value of the rupee. Similarly, inflation also affects the fundamental value of the rupee, interest rate through the interest rate parity hypothesis affect the fundamental value of the rupee.

Similarly, high money supply through inflation also affects the value of the rupee. Central bank intervention whether central bank intervening in the market, for what reason they are intervening, that also affect the value of the rupee. Similarly, speculation also affect the value of the rupee besides these there are may be some subjective factor subjective in the form of complexity of international, political, environment, societal and economic, infrastructure, random political, random factor particularly, political economic and social event all these also affect the fundamental value of the rupee.

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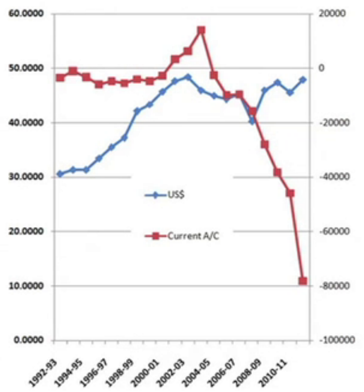
Current Account & Exchange Rate Movement

Year	US$	Current A/C
1992-93	30.6488	-3526
1993-94	31.3655	-1159
1994-95	31.3986	-3369
1995-96	33.4498	-5912
1996-97	35.4999	-4619
1997-98	37.1648	-5499
1998-99	42.0706	-4038
1999-00	43.3327	-4698
2000-01	45.6844	-2666
2001-02	47.6919	3400
2002-03	48.3953	6345
2003-04	45.9516	14083
2004-05	44.9315	-2470
2005-06	44.2735	-9902
2006-07	45.2849	-9565
2007-08	40.2410	-15737
2008-09	45.9170	-27915
2009-10	47.4166	-38180
2010-11	45.5768	-45945
2011-12	47.9229	-78155



I have analysed these policy against the rupee, and if you see I have first I have done it here, what is the rupee value against the current account. The current account is increasing since 92- 93, I have taken the twenty years data here, from 92- 93 onwards till 2011- 12 and I have taken here the exchange rate against the US dollar, US dollar value and also current account, current account deficit or surplus. Deficit here negative part is deficit, what is the movement of US dollar Indian rupee against US dollar along with the current account, if you see the red part is current account deficit and the blue part is the blue part is here US dollar.

So, here if you see the US dollar a rupee is depreciating fluctuating against US dollar or similarly, if you see long term pattern depreciating against the US dollar. However, if you see the current account deficit, the current account deficit is increasing over the year, so there is a negative relation or we can tell there is a positive relation depreciation of rupee and increase in current account deficit. So, when current account deficit is more, rupee is depreciating, so because this is a fundamental relation is that when there is more current account deficit there is more demand for US dollar against rupee and rupee definitely depreciates.

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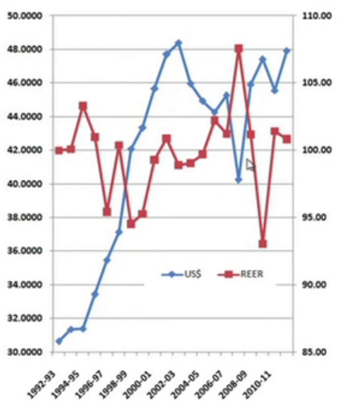
Inflation & Exchange Rate

Year	US$	Inflation
1992-93	30.6488	9.95%
1993-94	31.3655	8.35%
1994-95	31.3986	7.99%
1995-96	33.4498	4.61%
1996-97	35.4999	4.40%
1997-98	37.1648	5.95%
1998-99	42.0706	3.27%
1999-00	43.3327	7.16%
2000-01	45.6844	11.01%
2001-02	47.6919	3.41%
2002-03	48.3953	5.46%
2003-04	45.9516	6.48%
2004-05	44.9315	6.48%
2005-06	44.2735	4.50%
2006-07	45.2849	6.60%
2007-08	40.2410	4.67%
2008-09	45.9170	8.06%
2009-10	47.4166	3.81%
2010-11	45.5768	9.56%
2011-12	47.9229	8.91%



Now, this is the fundamental relation, similarly I have identified the inflation in exchange rate, when there is more inflation is there the value of the export earning import export if you see the inflation in US dollar exchange rate, when there is more inflation a real interest parity hypothesis works here because the value of the rupee actual value of the rupee will decline because of high inflation and when actual value of the rupee decline the rupee value will depreciate against US dollar or any other foreign currency.

The fundamental these year also, if you see the graph US dollar is blue colour red colour is REER, I have taken the REER here real effective exchange rate, REER I have, inflation I have taken and the if you see over the year, how the development takes place. With the US dollar is appreciating against rupee US dollar is appreciating against rupee your rupee is depreciating with the inflation is increasing.

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Money Supply & Exchange Rate

Year	US$	Broad Money
1992-93	30.6488	19.27%
1993-94	31.3655	14.81%
1994-95	31.3986	18.42%
1995-96	33.4498	22.39%
1996-97	35.4999	13.57%
1997-98	37.1648	16.16%
1998-99	42.0706	18.01%
1999-00	43.3327	19.44%
2000-01	45.6844	14.60%
2001-02	47.6919	16.81%
2002-03	48.3953	14.10%
2003-04	45.9516	14.66%
2004-05	44.9315	16.75%
2005-06	44.2735	11.97%
2006-07	45.2849	21.10%
2007-08	40.2410	21.72%
2008-09	45.9170	21.38%
2009-10	47.4166	19.34%
2010-11	45.5768	16.85%
2011-12	47.9229	16.09%

With the when inflation is increasing, rupee value is depreciating. Similarly, I have taken into account here broad money supply, broad money supply and other thing. There also same thing happened, the broad money supply is increasing and broad money supply also increasing and when broad money supply is increasing from 19 percent here, broad money supply is increasing money supply is increasing, rupee value also depreciating rupee value also depreciating.

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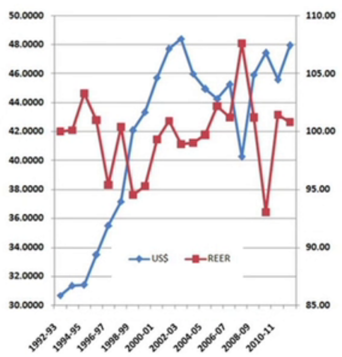
Call Rate and Exchange Rate

Year	US$	Call Rate
1992-93	30.6488	14.42%
1993-94	31.3655	6.99%
1994-95	31.3986	9.40%
1995-96	33.4498	17.73%
1996-97	35.4999	7.84%
1997-98	37.1648	8.69%
1998-99	42.0706	7.83%
1999-00	43.3327	8.87%
2000-01	45.6844	9.15%
2001-02	47.6919	7.16%
2002-03	48.3953	5.89%
2003-04	45.9516	4.69%
2004-05	44.9315	4.65%
2005-06	44.2735	5.60%
2006-07	45.2849	7.22%
2007-08	40.2410	6.07%
2008-09	45.9170	7.07%
2009-10	47.4166	3.24%
2010-11	45.5768	5.75%
2011-12	47.9229	8.12%



Similarly, here I have taken into account other component like that your call rate because call rate work through what is called, the call rate work through the interest rate parity hypothesis side when call rate is increasing there is discrepancy is there between fed fund rate and call rate. When call rate is more, more inflow over dollar will be there over the period call rate declining a rupee, and call rate when the call rate is declining the interest rate parity hypothesis differential interest rate is declining rupee value will depreciate.

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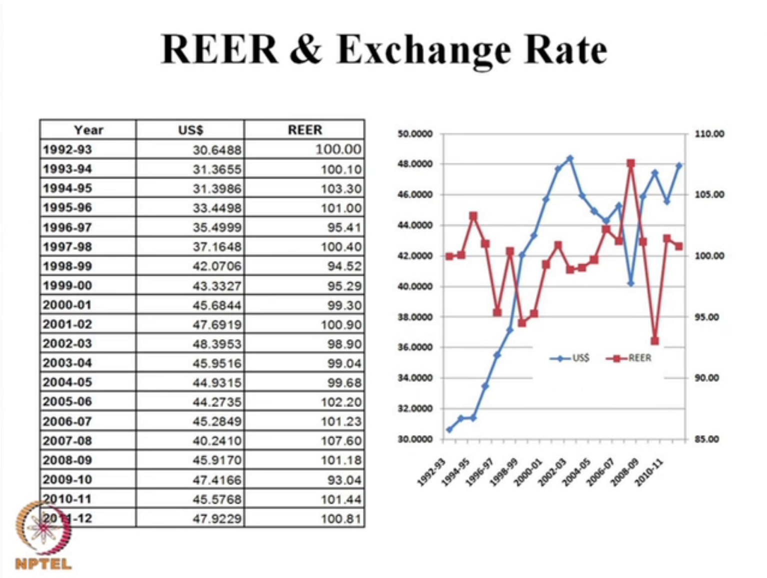

REER & Exchange Rate

Year	US$	REER
1992-93	30.6488	100.00
1993-94	31.3655	100.10
1994-95	31.3986	103.30
1995-96	33.4498	101.00
1996-97	35.4999	95.41
1997-98	37.1648	100.40
1998-99	42.0706	94.52
1999-00	43.3327	95.29
2000-01	45.6844	99.30
2001-02	47.6919	100.90
2002-03	48.3953	98.90
2003-04	45.9516	99.04
2004-05	44.9315	99.68
2005-06	44.2735	102.20
2006-07	45.2849	101.23
2007-08	40.2410	107.60
2008-09	45.9170	101.18
2009-10	47.4166	93.04
2010-11	45.5768	101.44
2011-12	47.9229	100.81

Similarly, I have taken into account further other side of the graph also. If you see here, that the REER side real effective exchange rate and rupee value, real effective exchange rate reflect the trade basket, but it exchange rate here and also inflation at this exchange rate here, when exchange rate and against the dollar, if the nominal exchange rate is here dollar value is there, here real effective exchange rate trade by trade weighted exchange rate and inflation weighted exchange rate you have taken into account, and along with the rupee also depreciating over the year.

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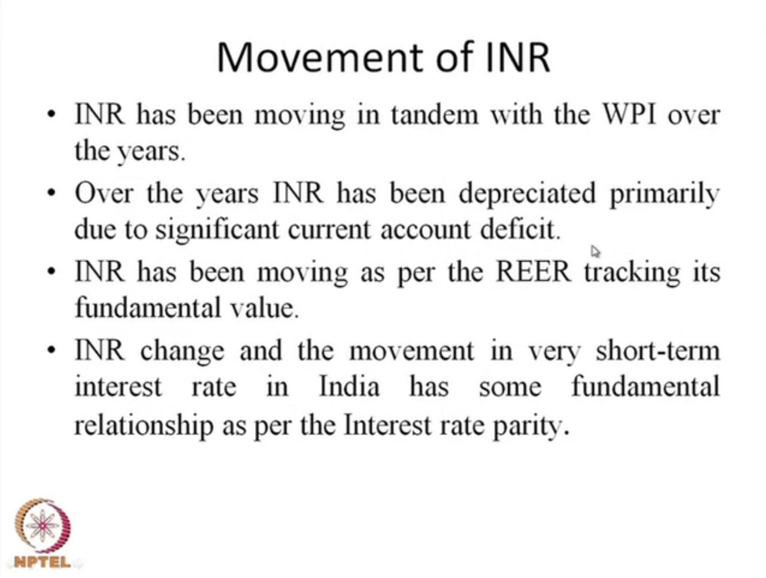

These are the movement tracking period, how the rupee value is a over the period is a changes its value. This movement tells us the how the Indian rupee, no doubt there has been capital account convertibility, current account convertibility significant liberalisation is capital account. However, there are macroeconomic fundamental in the form of fiscal policy, in the form of inflation, in the form of interest rate, money supply also affect the value of the rupee, and if you see INR that is a value of Indian rupee has been moving in tandem with the inflation rate WPI over the year.

Similarly, over the year INR has been depreciated primarily due to significant current account deficit. We have current account deficit of despite liberalisation we are not in a position to arrest it, and this current account deficit has been increasing over the year because of our basket composition of export import. Similarly, and this current account deficit has they reduced the value of the rupee or the value of the rupee is depreciating over the year. And similarly real effective exchange rate tracking the fundamental value of the rupee despite rupee is depreciating, but rupee is at par with the fundamental value because REER tracking in the fundamental value of the rupee and rupee against the against the US dollar is moving as per the fundamental value of REER.

Similarly, INR changes and the movement in movement in very short term interest rate in India have some fundamental relationship, as per the interest rate parity hypothesis because earlier India was a high interest rate country as compared with the US market.

This is interest rate discrepancy over the year has reduced and because of these, interest rate discrepancy the interest rate parity hypothesis some extent applicable in case of India and the forward market which tracking the value of the rupee also along with the interest rate parity and that and reflecting the INR value in recent years..

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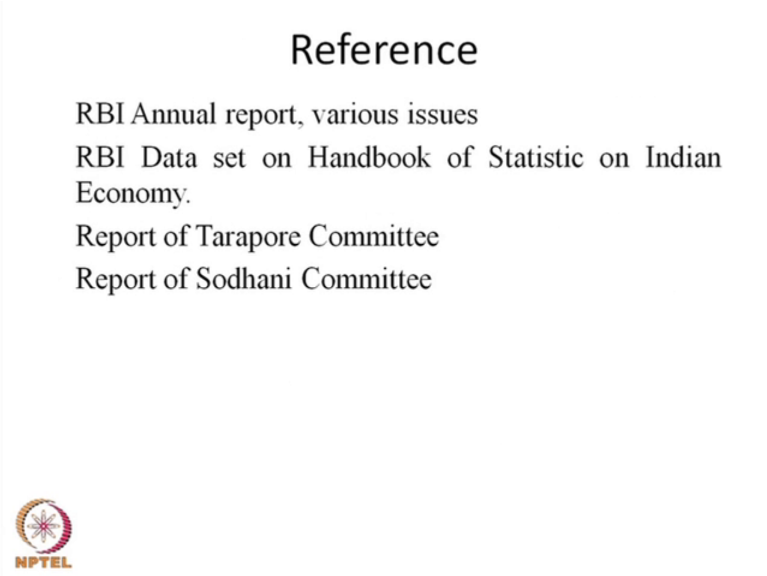

You along with that let me complete with this session, and here we have discussed the movement of exchange rate, as per their liberalisation measures over the year. A liberalisation measure once we have discussed, the liberalisation in the current account side, liberalisation in capital account side, and the how the value of the rupee find its own position, own value in a in a liberalised market, in a market determined exchange rate regime. And you can go through further references I have given to here, references are RBI annual report various issue of RBI annual report, there you can track the our reform measure of Indian foreign exchange market.

Similarly, you can use the data of RBI side on handbook of statistics on Indian economy; you can plot different graph and try to find the movement of Indian rupee along with the various macroeconomic parameter.

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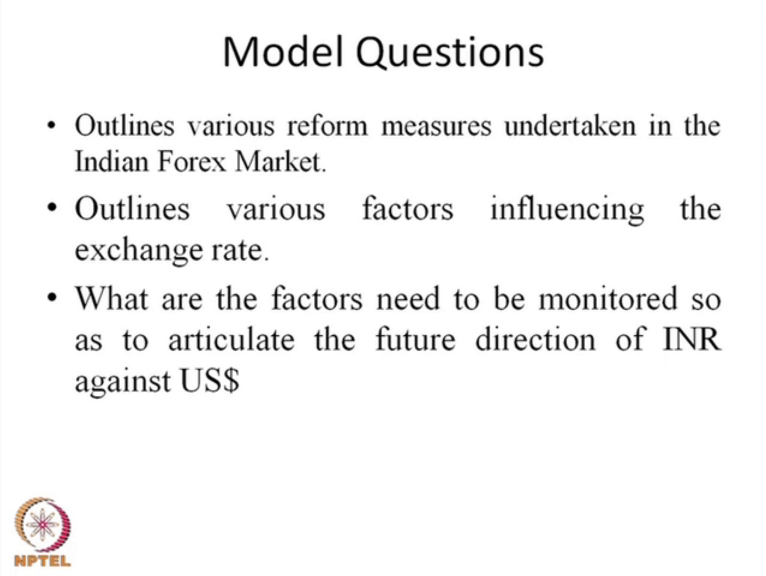

You can go through the Tarapore committee and Sodhani committee these two reports provide basic framework for the foreign exchange market in India, and reference here model question I have prepared for you, outline various reform measure undertaken in the Indian foreign exchange market. As we have discussed you can Sodhani committee, Tarapore committee reform measure you can discuss here.

Outline various factor influencing the exchange rate, along with the reform measure, you can identify a microeconomic factor, how they are influencing the exchange rate. Third question is here; what is the factor need to be monitor so as to articulate the future direction of INR against rupee. You have to identify the various factor like interest rate, parity inflation exchange in, you can see that export, import, invisible import, current account deficit, these are the various factor which influence the value of the rupee against the US dollar or any other or the other currency. These are the factor need to be monitor so as to understand the direction of rupee in recent years.

Thank you.