

Money and Banking
Prof. Dr. Surajit Sinha
Department of Humanities and Social Sciences
Indian Institute of Technology, Kanpur

Lecture - 25

(Refer Slide Time: 00:27)

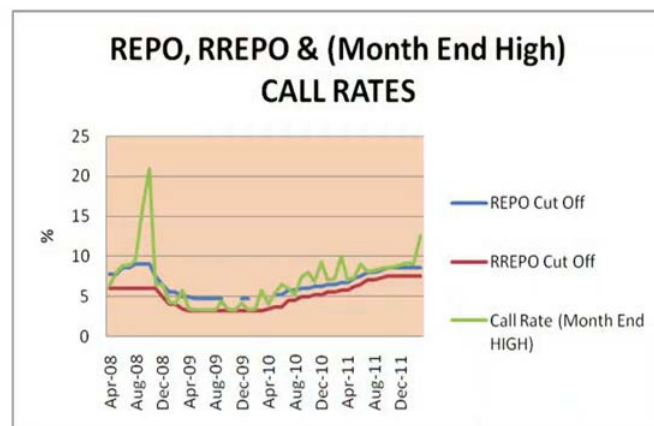


Figure III.12a

Now, we were with the end of the data on topic 3, these variables. This is month end high call rate I was comparing and I told you these are the short term interest rates, and these are monetary policy instrument also. And some I mean a repo reverse repo or monetary policy instrument call rate is a mark determine rate, but what a government RBI has been find to do is to keep them together. Because these are alternative sources of funds for banks, to lend funds to borrow funds both. When the banks have surplus cash they can invest in short term instrument like repo, etcetera called call loans, and also they can use this to borrow funds from banks RBI.

So, this is a very important money market segment from RBI point of view, and what they trying to do make it very competitive. And you can see the diagram here the green line goes up a little bit up and up, in this difficult months years. So, the call market is a little bit, I should say unstable compare to what it used to be... It is now not that stable and the repo reverse repo is directly controlled by RBI. This is the RBI l a f segment it is called l a f segment of the repo market is another repo market, which is between banks which which I do not have any data.

(Refer Slide Time: 01:58)

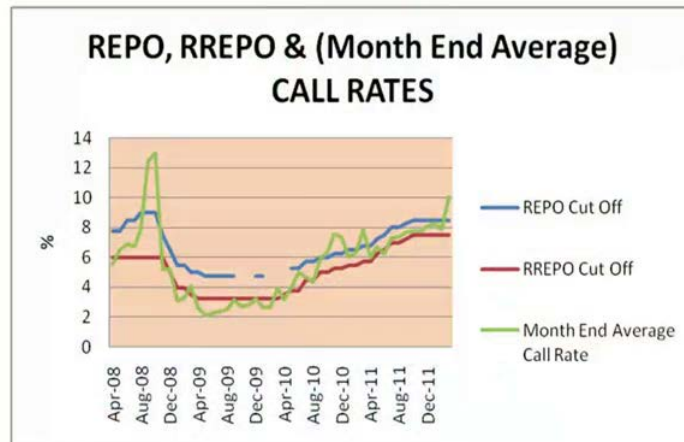


Figure III.12b

And, if you take the month end high to if you change that month end high call rate to average. Then month end average then you see this line is like this, the the kind of series looks slightly different. These moving above the blue line is less moving below the red line is now they are a little bit. So, the call rate and the repo reverse repo rates are moving more or less together more or less together so this is known as the interest rate corridor short term interest rate corridor, that RBI has been trying to create. So, two two call rates I have. One is an average month end, one is month end high. Sidhanth, I need to talk to you after class . Now these are the month end heights repo reverse repo call rate.

(Refer Slide Time: 02:55)

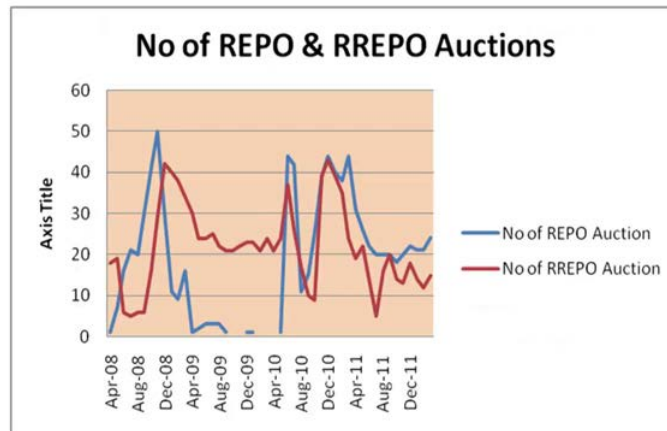


Figure III.13

Now, let us see number of repo reverse, repo auctions; now, this is very interesting. The blue line is number of repo auctions. What is that? When the banking system does not have enough liquidity enough cash the repo auctions are there, RBI is pumping in money. And reverse repo is when the banking system has too much cash, RBI is withdrawing the cash from the system reverse repo absorption and repo is injection into the system. But do you notice something. The first, there is a zigzag in the beginning what you see is the blue going up and then coming down and disappearing. That means, the repo auctions were disappearing initially from April 8 it was going up and then around August 9 it disappeared. That means, from April 8 then August 8 the recession hit. In August 8, you can see the blue line is going up then December 80 peaked.

So, when the recession hit for some reason liquidity Indian money market went down. Simple reason could be as a recession hit the world market, the world economy exports would go down immediately. And if exports are going down less liquidity will be there in the system. The exports what they do by exporting your own foreign dollar foreign exchange dollar etceteras; then you come with the dollar give it to RBI and exchange that for Indian currency. So, the Indian currency is immediately pumped into the system. You bring a dollar you cannot take dollar to big bazaar region they do not have system here. The big bazaar will cash lap.

So, you have to exchange that so this is one so if the world economy is recession. One reason I understand; is that the exports will get affected immediately. An Indian exports they cannot be too much of a necessary item excepts for some countries luxury item like carpets, handicrafts, some tea etcetera of course and other things. Now, what will happen? The exports earning will fall. When exports earning fall, the cash in the system will be fall. So, you can see when the top December it peaked but after that the April 9 and then August 9 is nearly disappeared. It came back, it came back the liquidity shortage came back in April 10. The blue line started climbing and April 9 and after that it went up enormously, tremendously went up the liquidity.

Then, it came down, and again went up and now it is tapering off. That means, liquidity problem is going away but there is still some blue line which is saying there is some repo auction going on. Even last financial year 11, 12 repo auctions going on, but a continuous line this is very interesting. Despite, not having enough liquidity RBI is auctioning repo to inject funds into the system. There is a continuous; this is very interesting there is a continuous red line. Discontinuous is the blue line, but the continuous line is the red line, red line is reverse repo.

So, it is very interesting that the reverse repo is continuing. Earlier data, when I started teaching this course I had the earlier years 6 7 8 5 6 7 8 and in before that 2003, 2004 there is to be dominantly reverse repo auctions repo blue line, this is the difference. And the reverse repo has always been there. So, for some reason Indian Indian system is a risk avoid system, I guess here people earn money they do not want to spend that much, they put the money in the bank. Hoping to spend in future I I think, this is how it works hoping to spend in future. And then what happens so the time deposits fix deposits etceteras keep on growing and then you have excess liquidity and the system gets affected.

So, what is happened Indian system is very risk avoid system. You want to earn you want to earn but you do not want to spend that much I think. They put the money there that is why m_3 was so high, the multiplier was so high, the complex money multiplies. You saw that and then there is liquidity and then banks know what to do; because the commercial sector borrows money, but went in a recession. These are the recession years; 8, 8 similar data. Recession year economy has not been borrowing much, investment is down, and companies are not borrowing. So, what would the banks do?

Banks are flush with funds. So, RBI continuously, raining money out of the system to reverse repo auctions.

So, the red line is the continuous line it may be high at times. One or two years it dipped but it is quite, and I forgotten to write it here axis title this y axis. Do you know? What this is? Do you know this number on the y axis? Have you been able to read that number this is a very interesting number. What is the number? This is number of repo auctions and look at the number it is touching 50 in a month. What does it mean? 50, that means there have been 50 auctions in a month of 30 day minus weekends. What does it mean?

Multiple auctions in a day multiple auction in a day like it is raining continuously, and there is water logging going on and pumps sets are on, switched on to drain out water. So, it is raining; so much the pump is on and a normal its once may be at most. Some days no pumps are not switched on. Someday pumps are switched on may be three times. So, in the morning; in the afternoon; in the evening; three auctions RBI held for repo. So, this 9 is very into, when I first saw that I just could not believe. When I saw the table, then I counted, then I saw multiple entries against a date. Then it slowly it dawned upon me, what is going on actually. Because I do not work at RBI. I am looking at the data they published. I am not associated with RBI. I do not know what they exactly do. So, this is what is been going on.

Like somebody is ill giving medicine more than you know, the dosages may increased number of times. This is what is been going on number touching 50 the blue line is they are 50 auctions, of repo in a particular on a in a particular month. And imagine in a month 30 days you do not have 30 working days. Sundays are gone at least 4, 5 Sundays so at most you have 25 working days if you count Saturdays. Some banks etceteras are opened on Saturdays. And I do not know exactly, whether auction can be launch Saturday may be it can be launch Saturday. And now this is the story here. All right, so this you realize. What RBI has been doing? I mean auctioning once in a month is good enough, once in a week week is good enough, once in 2 days may be 3 days more than once in 1 day, which is something quite quite exceptional. So, this is what you have here repo auctions and reverse repo number of auctions.

(Refer Slide Time: 10:48)

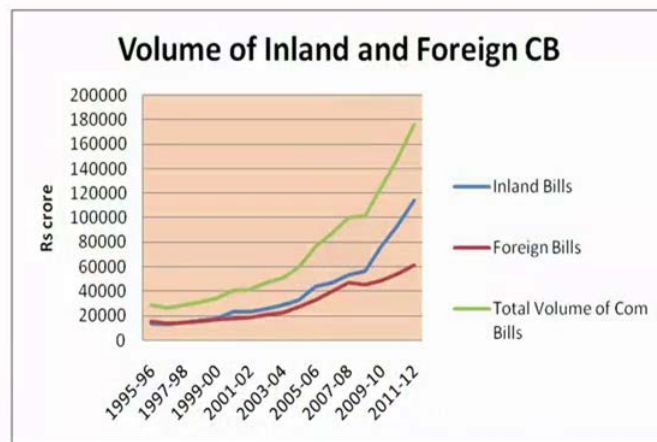
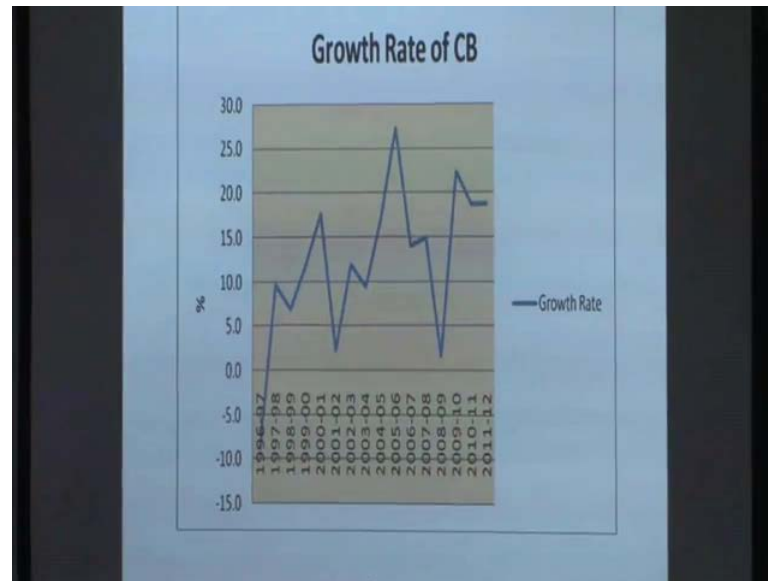


Figure III.14

Then, I come to commercial bills look at these data. The total volume of commercial bills the green line is going up which is good news. People are using more and more first class bill or organize sector bills. No hundi. We do not have much hundi data here. Even if it is there a little bit may be, these are all organizing sector commercial bills. The dominant one there is the blue one. What does it mean? It means bulks of the commercial bills are for inland trade. So, some companies in Kanpur buying something from madras creating a bill, banks are discounting them or purchasing them etcetera.

And, what is the red line? It is red line is quite, has a has a much flatter slope. So, it is increasing but at a slow rate. The volume of commercial bill, this is the rupee value of commercial bill remember, not number of bills not number of bills like number of auctions is a rupee value of the bill. So, this is what you have, the red the foreign bills are much less. So, in India foreign bill are stills less but still still are there foreign bills that means the exporter or importer created a bill simple. Foreign bills mean an exporter or importer created that bill.

(Refer Slide Time: 12:16)



Next, growth rate is jagged. As you express, like m 3, m 1, m 2; any line growth rates are uneven. Some years it is good, some years it is low, some years the growth rate has gone up to 25 percent. Can you believe that? 6, 7 or something 2005 2006, 2005 2006 it went a growth rate is 25 percent because it was very down, and some years it 2008 2009 commercial . Another year, when it depth 2001 2002, 2001 2002 . Now, this is very sensitive to the volume of trade going on in the country commercial activities.

Commercial bills proportion into the volume of activities also. It also can tell you a little bit, about how the economy is doing. 2001 2002 stock market crash. The commercial I do not know, why the economy goes not doing that well 2001 2002. Again, a deep is there which you expect. So, this is become very clear in 2008 2009. Indian economy got affected. This is very clear. Number of money market variables we have seen, which shows abnormality called 2008 2009 period and then there was a lack of 1 year year and a half again it was hit. It clearly you can now look at the data and knows when the shocks came to the system. When the shocks came to the system, you know that very well.

If you do not understand, do not follow, raise your hand. I will try to explain this again. This is real economics, you are looking. It is just not a theory, some algebraic equations. That is another kind of economics, this is the actual economics. You are getting feel for it. Part of the economy, not the entire economy. I do not have the GDP etceteras well see

it variables. I do not have it. I, Earlier I used to have the GDP variables maybe I should bring them in again; GDP growth rate variable along with this. So, I can compare them; what was happening to the economy overall overall economy. GDP means overall.

(Refer Slide Time: 14:28)

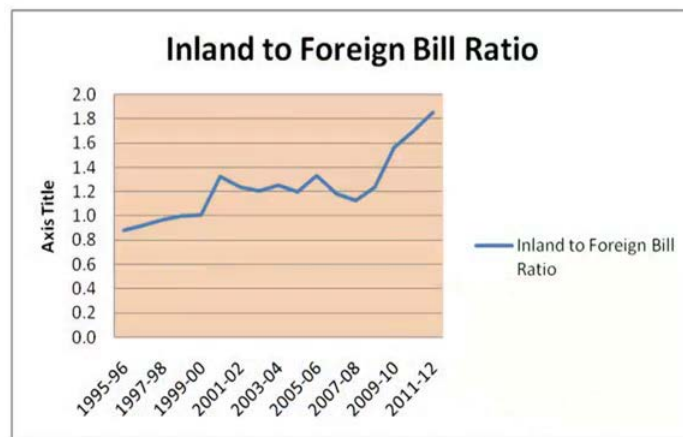


Figure III.16

Next inland to foreign bill ratio, I wanted to create. How much is the difference? It is clearly it is showing the since 2007 2008 it has been after that, inland to foreign bill ratio grown up. Look, world decision is going on the export import. Import market is still there, because they are essential imports for developing country. Exports on a developing country are not necessary items of the rest of the world often. There is a often luxury item gems and jewellery, handicraft products, Kashmiri carpets, some agriculture item tea, coffee, etceteras, plantation crops what we called tea, coffee etceteras of course, there some manufacturing goods. Software is highly sensitive to the rest of the economy. Out sourcing is down you know that. Software industry does export a lot or services. This is the export of services not goods.

And, the other services, lawyer service and doctor service. If your economy is down, you take home of your local doctors help. You do not go for an expensive economy because expensive doctors somewhere in Delhi, because you do not have the funds. So, you can imagine, when the economy when the world economy is down they over exposed must have been down significant percentage wise. Now, what do you see here the ratio of course, definitely got distorted after roughly after form 8 9 onwards he is being going up

line which means there is more inland bills in India than foreign bills can create, which is the reflection of the economic performance of the world including India and all that is clearly saying that?

(Refer Slide Time: 16:20)

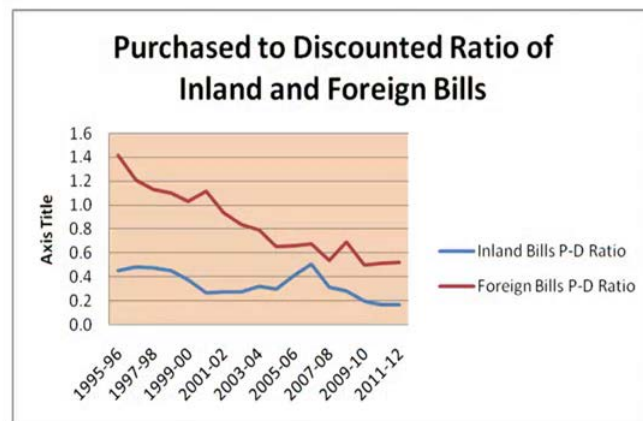


Figure III.17

Next, purchase to the discounted ratio this is just my interest. What is the purchased bill? I told you purchased bills are often demand commercial bills, which whether payment is made as soon as the goods arrived. So, there is a transit period, for which the bill is created and often banks purchase them. And make the payment to the seller of the goods and then recover the money from the buyer goods when the goods reach Kanpur. So, as soon as it reaches the buyer of the goods make sure are all things are ok. The makes the payment right away, these are demand bills. Bills which had created for temporarily 1 week, 5 days, 6 days, 7 days, 8 day period or 2 weeks.

In fact, I tell you something. I have created a commercial bill now. I do not know what interest, I will not have to pay interest but they should pay interest to me. I will ask or reach to a book to is in a month and a half it has not reached to me. Typical commercial bill I do not know what is going on. Anyway so purchase bill in discounted bills are, which banks discounts when you and she order something from a friend here in Kanpur or Calcutta. And she said I need the payment right now and the person in Kanpur said no, no, no, I cannot make you a payment for two months. Then she creates time using

commercial bill. Then she can take to bank of Rajasthan or something, and they would discount that is when discounting counts.

Initially, I did not understand when I was reading books what the meaning is. RBI side way the data on purchased discounts purchased bills and discounted bills both are there without any explanation. What purchased bills mean? What discounted bills mean? So, suddenly it occurs to me what they mean? And I found somewhere one line book not RBI side book RBI side something else. So, discounted bills are used in bills, but what do you see in deal bills to inland P D ratio purchase to the discount bills, the number is going down below one. So, what does it mean? There are more of discounted bills than purchased bills, P D ratio going down.

That means the bills of Indian commercial bills; the natures both foreign and inland are more of the type called long term bills. Not so much of bills created or which are of the purchase type bill bank purchase which is demand bills not much. Not much of a demand bill is created compare to discounted bills. So, P D ratio is less than one that is denominator is heavy larger than a numerator. So, this is the case for both inland bills as well as foreign bills.

(Refer Slide Time: 19:40)

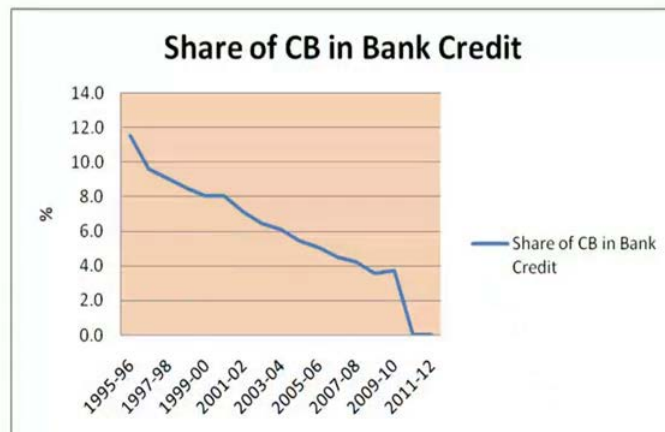


Figure III.18

Finally, this is a sad story. Commercial bill business may be going up, but what is the banks bank does a lot of business. Banks gives credit, gives a loan, credits, etceteras, whatever they call. So, share of commercial bill in banks credit do you see something

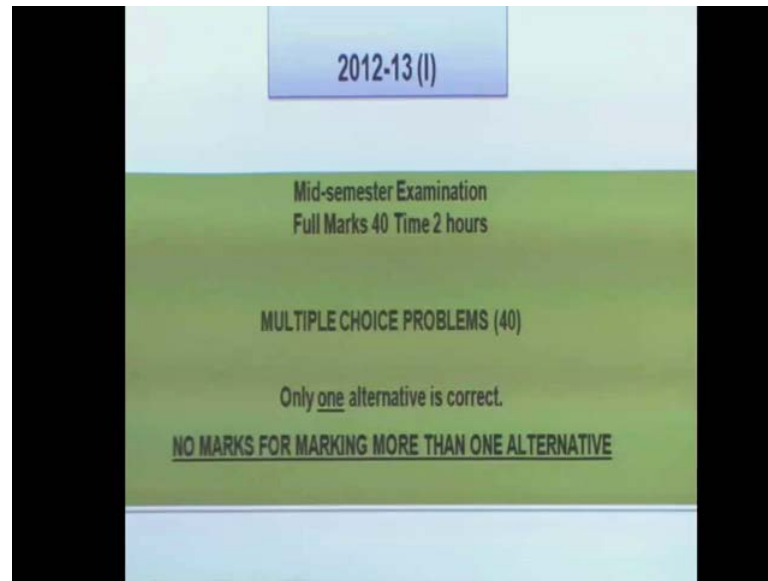
here. It is nearly 0 percent 0.1, 0.2 . The amount of money commercial banks in India involved in the commercial bill market, which is the very important market in any developed country any developed country is still a very under developed market in India. So, commercial bill participation reflects that. The total amount of money commercial bills deal with by giving out loans etceteras, and they involve in the commercial bill market. I am coming to the last topic, I will show you the disaggregated data there commercial bank.

Then what you see here is that the percentage of total bank credit; the money that is involved commercial bank money that is involved with commercial bills in purchasing or discounting or whatever. A commercial bill negligible is nearly 0 percent. And then what you see here, in the last 15 years or 16 years it has dramatically changed. It is going down and down and down and finally, a very sharp fall year the last year; dramatically changed.

Even in the mid 90s; when for the first time I was preparing a course and I was looking up something; earlier 90s etceteras. Commercial bills activity involvement of banks compares to the banks other credit. So, the banks, other credit system have expanded so much and the commercial bill sector have expanded hardly anything compare to that. So, the percentage share has become insignificant commercial bill market commercial bank . A simple word in simple terms it does not matter to them that is it.

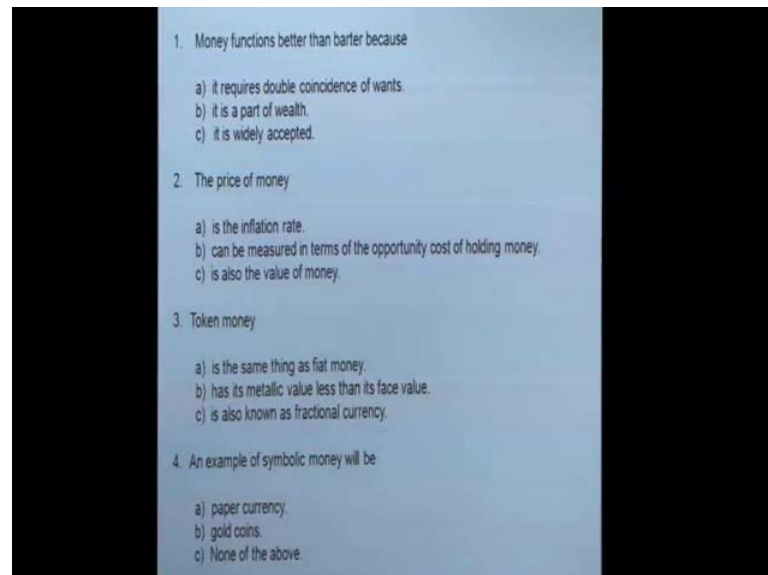
Now, what I want to do? Is it all right. Now what I want to do, today since I am wasting this day in not wasting. Since, I have half a day left, half a class left. I will show you an exam paper, you have done all right. I have, I will show you an exam paper and the possible Monday or something. I have written them to you you have done quite well mid seventies average, it has come. A few are not doing well. It is right on the slide you have it.

(Refer Slide Time: 22:52)



So, this is the question paper you had, and look at the questions. The answer that I have is the following, this is what I am going to do the rest of the class today, some errors are there, and the highest mark is 38. That means, if the least mistake the somebody made is 2 marks, 2 questions.

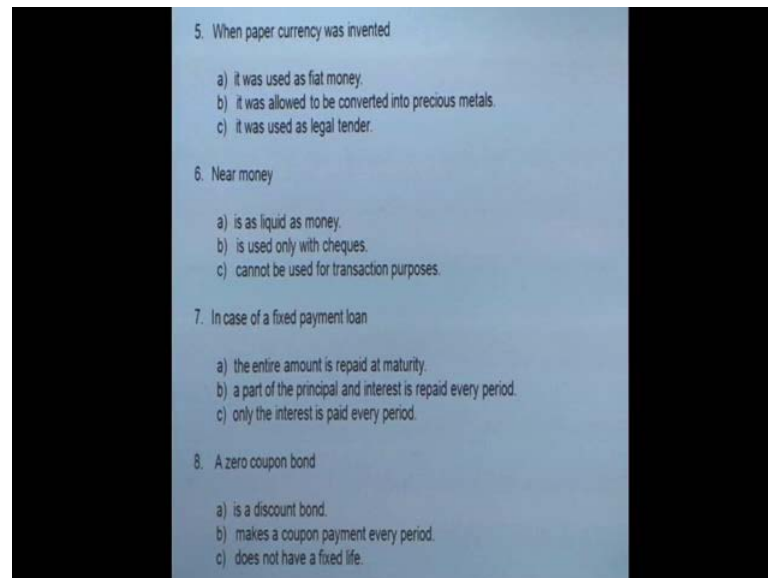
(Refer Slide Time: 23:07)



Money function better than barter because what? What is the answer? C. It is widely accepted. Very good. The price of money, which one is the answer? Number 2. Very good. B. And first token money that is we did so well token money 3) B. very good. Has

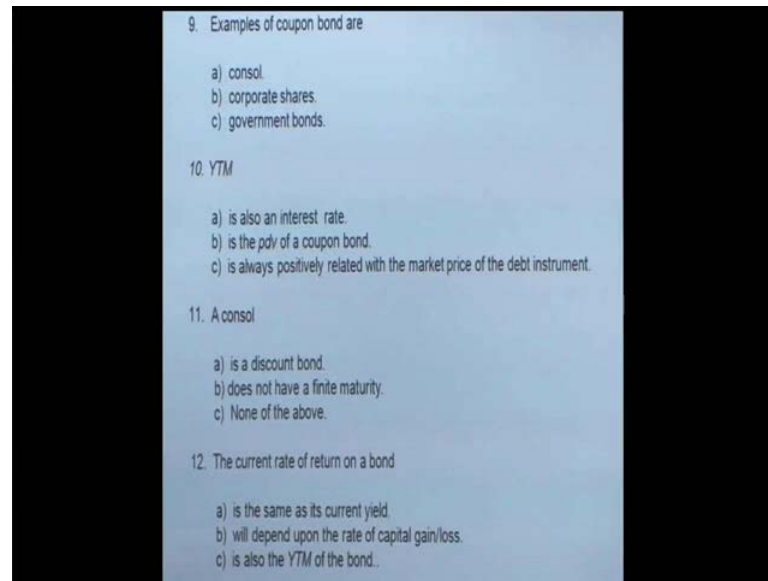
it metallic value less than a face value. And the number 4 and example of symbolic money which is the same thing as token money; will be different names are there, will be what? Paper currency gold coins on here people made error, it will be paper currency. Here people made error on first page I have seen; symbolic money and token money is the same thing. Silence please. Symbolic money, token money is the same thing.

(Refer Slide Time: 24:18)



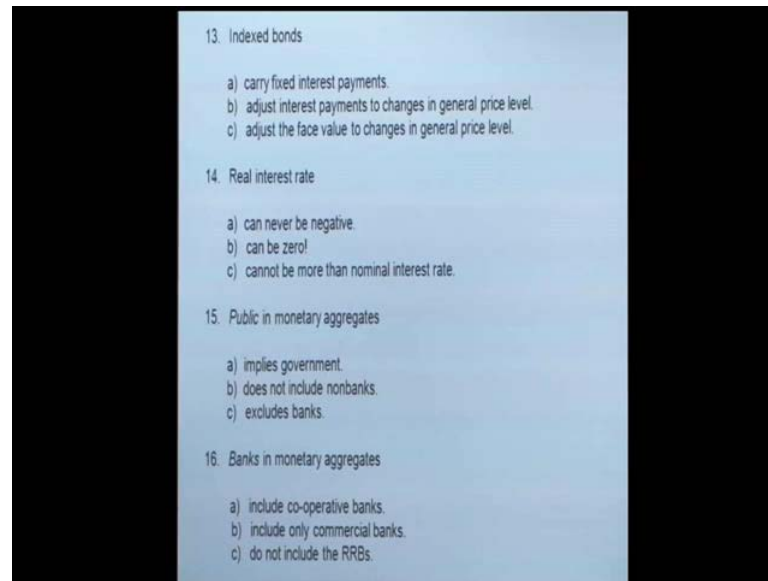
Next, when paper currency was invented; it was used as fiat money. Fiat money is legal tender that is called fiat money. It was allowed to be converted into precious metal number B is the answer. Many people did not write it. B is the answer. This is where they made errors. 6. Near money 6. near money is as liquid as money no is used only with cheque. Near money cannot be used with cheques, by fixed deposit money cannot be used for transaction purpose. Near money can fix deposit May in the middle of period then I can use it. 7 In case of a fixed payment loan the entire amount is repaid at maturity or what what is the answer? B very good b. 8) A zero coupon bond zero coupon bond is a discount bond. 9 9.

(Refer Slide Time: 25:44)



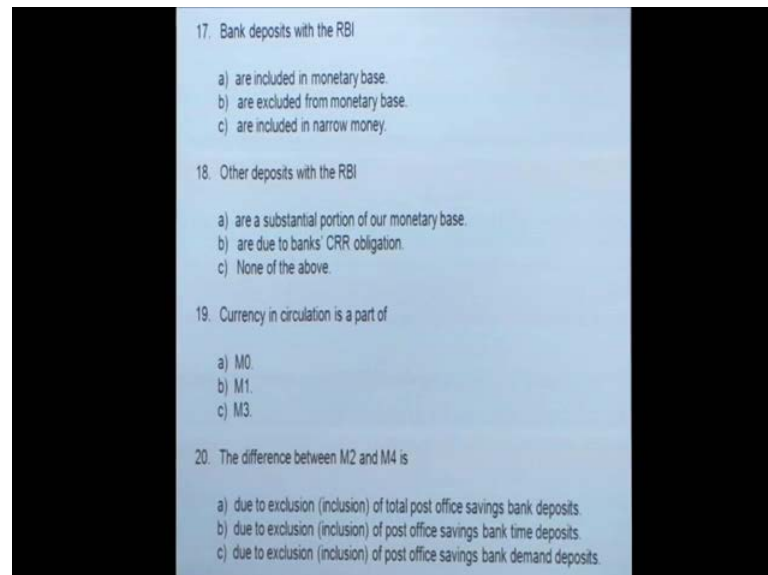
Examples of coupon bond are coupon bond 5 percent interest rate or 10 percent interest rate issue or government bonds. Very good. Corporate share just like a coupon bond debentures, remember and answer could be debentures. Corporate bonds are also like government bonds. 10. YTM yield to maturity is an interest rate. YTM is an interest rate. Consol is consol a discount bond or what? Discount bond or what? Does not have a finance maturity. The current rate of written on a bond will depend upon is not the current yield. Current yield are written include current yield plus capital gains. Yeah. YTM is always negative relevance with the price of the instrument. P is equal to coupon rate divided by YTM one plus YTM 1 plus YTM square the inverse relation p price . Now 12.

(Refer Slide Time: 27:33)



Next, I come to indexed bonds. Indexed bonds are just interest payment to changes in general price level will be the answer B. Then 14. Real interested rate, what is the answer? B. very good. 15. Public in monetary aggregates, what is the answer? 15. C right. 16. What is the answer? Banks in monetary aggregates. A. very good.

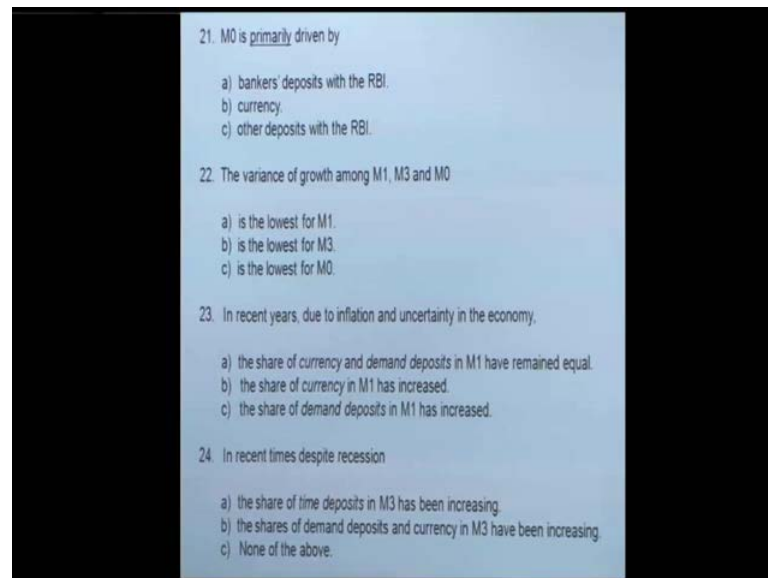
(Refer Slide Time: 27:59)



Bank deposit with RBI; including in monetary base, excluded from monetary base or included in narrow money, bank deposit with the RBI A. very good. Some people wrote probably incorrectly. 17. Because this is the trick because M 0 has something which are

not there in M 1, M 2, M 3, M 4. 17. Bank deposit with RBI. 18. Other deposits. C. This is nasty question, answer is none of the usually, I do not give but some time I do. 19. Currency in circulation is the part of what? A. very good. Difference between M 2 and M 4 is B. Because time deposits are not in M 2 but in there in M 4 post office time deposit b answer B. 20. Is B.

(Refer Slide Time: 29:08)



M 0 is primarily different by what? C somebody say c c insignificant. The variance of growth is lowest for whom? M 3 right. Most steady mode monetary aggregate in India M 3. 23. In recent years what happen? The share occurrence in an M 1 has increased. Answer is B. why has it increased? Share or currency you can see, why is more costly to spend people are keeping more currency. Simple intubation. Prices have gone up. I am keeping more cash. I told you, I have notice my withdrawal from bank. And you would not believe me it has increased by 10000 rupees every time we withdraw; not I spend at a very high rate. But every time, I go to the bank my withdrawal has increase by our 10000 rupees because of high inflation.

Food inflation is double many other things have double and I feel I feel; I have to go to bank more often. I do not go to bank; I do not have habit of going to bank. I kept some cash on dam I goodness . I have a scared, have a fear psychosis. I remember; I spend hours in the banks standing in the line, when I joined IIT. State bank was horrible. Now with computerization and all that is improved. And I have seen about to 5 to 10000

rupees more; every time I withdraw. Keep it up keep more currency. A phenomenon which happens during inflation is; in Germany after Second World War. When hyper inflation hit them, people used to carry bag full of currency to the bazaar, to the market place. There is store is about it. Bags like a suitcase; full of currency they used to carry. Money had no value; it was hyper inflation.

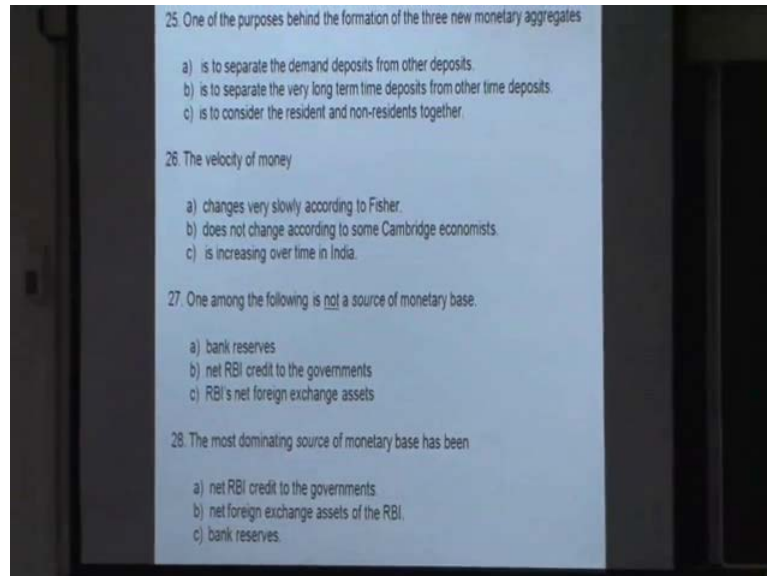
So, for simple grocery they are carrying a suitcase full of currency; and look at Germany today. Where it has gone? This is unbelievable. This used to be the case after Second World War in Germany. So, this is the number 23. Share of currency in M 1 has increased. Number 4 24 number 24, A. Share of time deposits still increasing. This is the amazing thing about India. When I have something to save or if I can save; I save. Indian used to have one of the highest saving propensities in the world. People do not try to spend here. People love to save. And think about an uncertain future always moving behind their mind; back of their mind. I have seen people do that saving with real goods. It does not mind.

I can give you an example. I have started scolding some people mind often. Who was doing it? Somebody was doing it; I have forgotten in my relatives circular somebody. You give them a gift they would not open it, they all accumulating the then these servants etceteras. Every year they would ask for something. Then one day I found that they are just like compiling them, accumulating them, they do not wear them. I said what you do with this all this gifts; that I gave you every year. There are piling up accumulating in a box. May be thinking about daughter management it will come, they can be used whatever.

So, India is a very interesting country. They have a high propensity to save here. In monetary terms and real terms also; they do not use give them; all they will give it and probably it 10 years data they would give the cloth has been moth eaten. They are not properly preserved also they do not know involves probably. So every year they ask for twice gifts; and I do not see the gifts been used. So, one day I ask them, what do you do with them? There is an M 3 amazing; contents time deposits that is the variable makes in to difference. Although one and high inflation allows them to keep upper forces then to keep more cash; to be spend down. And if they have any cash; there also saving for future, and putting in the M 3. M 3 line is untouched. No effect in recession in India,

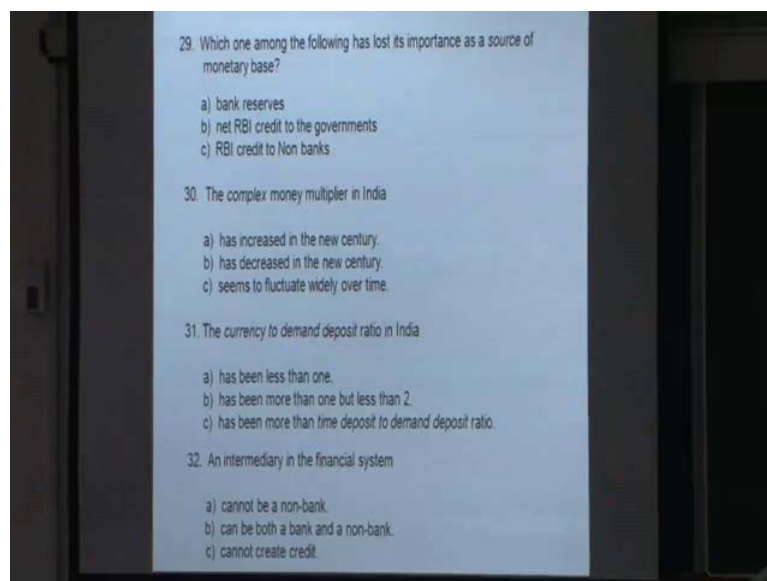
unbelievable. M1 and M0 have high fluctuations growth rates. M3 is very steady, very steady, so 24. The answer is A.

(Refer Slide Time: 34:07)



Now, 25. What is the answer? B. 26. You know that? A. Having Fischer theory. 27. A. Bank reserves are bank reserve is use of multi base, not a source. 28. You know that? Very easy answer B.

(Refer Slide Time: 34:34)



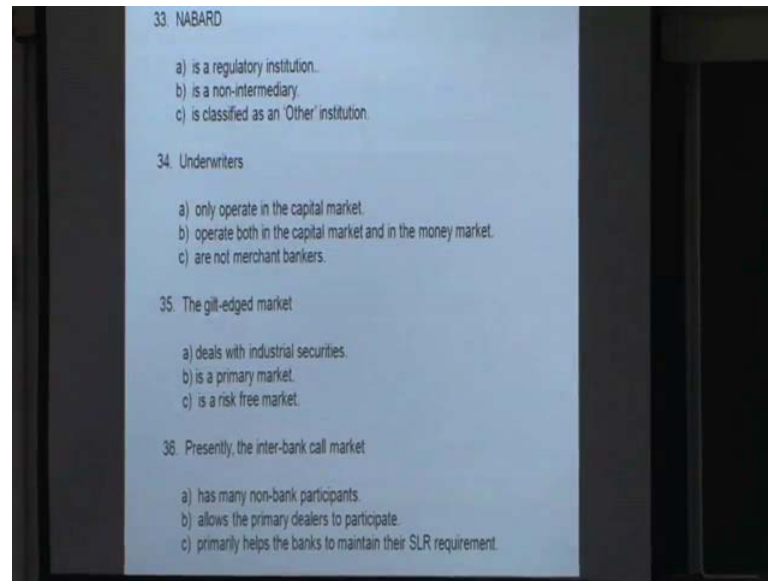
29. RBI credit to non banks have nearly disappeared nab ad, IDBI, export import bank called an exim bank all are independent financially. They do not dependent upon RBI

help anymore lost is important as not loss itself .Government is borrowing huge amount presently. Last 3 4 years only C. 30. Complex money look at the data. Data table have to must they can teach you. Complex money multiplier in India has increased decreased or what? Seems to fluctuate widely, not at all steadily going up. A. 31. Sorry 31. Currency demand deposit ratio is Currency demand deposit ratio above 1, less than 2, B. what it is saying? Demand deposit Indians banking habits are for current expenses. Banking habits are not a very good. They do not keep money in bank. They did not pay with cheques.

Indians make payments not with cheques, not with cards. Indian makes payment with cash; and I have heard that so many times. When I told him, can I pay you in cheque? Cash even good rates say, so then I said well; this is a holiday weekend. I do not go to bank and get cash. So I will have to wait for that amount of cash; and it is no problem next week we will deliver. It is very interesting these numbers are saying that, there is cash more people handle than demand deposits; which can be used for cheque payments or card payments.

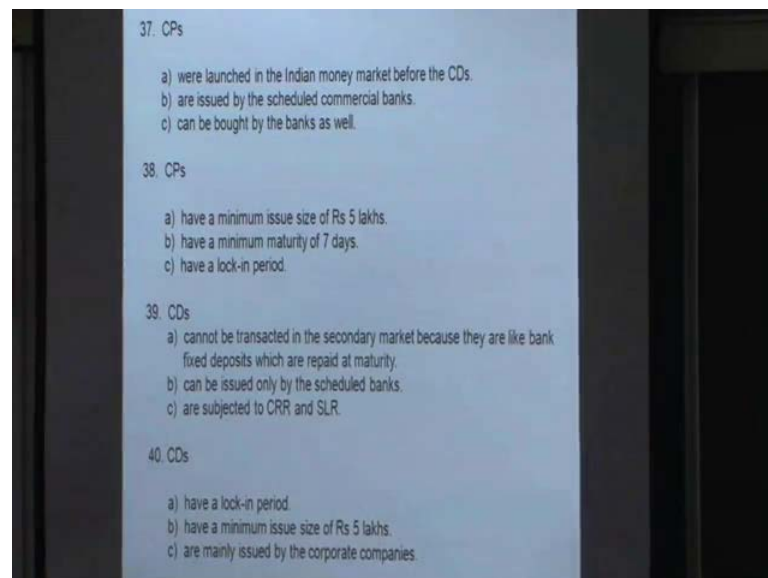
Indian habits, it is very clear this is probably a characteristic of developing country also. If you go to developed country; you will find probably the cash to demand deposit ratio is less than one. It is not only more than 1, its nearly 2, sometime very high double. Demand deposit so there are interesting small small things to me the way tells me about our country, our economy, form this data and stuff, which I put here as question for you. 32. An intermediate and financial system can be both a bank and non bank. Answer B.

(Refer Slide Time: 37:37)



32, 33 underwriters again B, unbelievable. Do you need if you want to me whenever you want all right all right 33. 35. C 36. Again B.

(Refer Slide Time: 38:17)



37. A CPs, CDs were launched before c ps. C C. answer is C can be brought by the banks as well CPs. 38. A. very good. 39. 39. 40. 1 A, have a locking period. So, I tell you people have done very well; because at last average is above mid 70s.