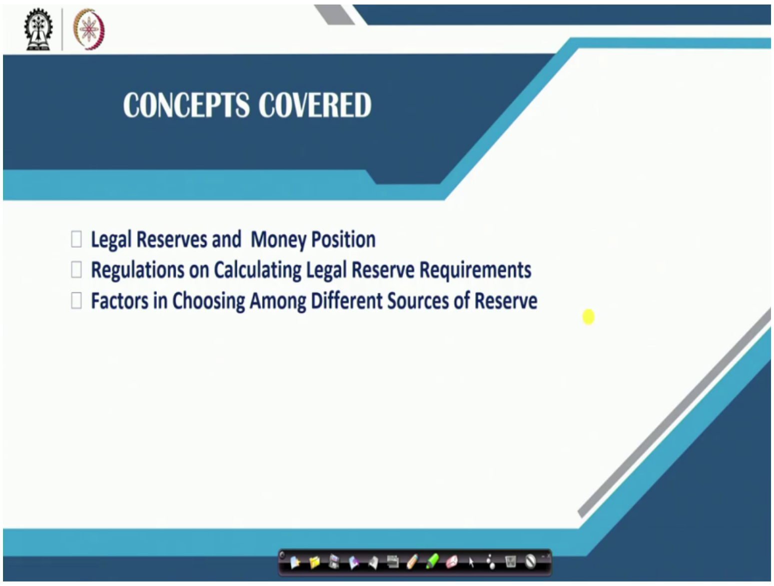
Management of Commercial Banking
Professor Jitendra Mahakud
Department of Humanities and Social Sciences
Indian Institute of Technology, Kharagpur
Lecture 49
Managing Liquidity of Commercial Banks - IV

In the previous session, we have discussed about the different approaches which are used to measure the liquidity needs of the commercial banks.

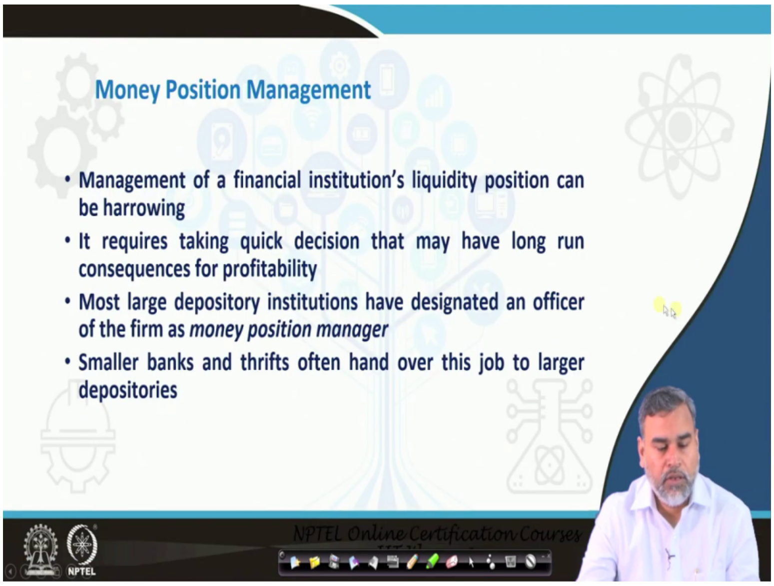
(Refer Slide Time: 00:24)



In today's session will be discussing about, there are other issues which are linked to this liquidity, one is that how to calculate the legal reserve requirements that how much legal reserve requirements the bank should hold? And how the money positions of the bank is managed?

And what are those factors basically is considered for the different sources of reserve that what the banks would use to maintain their reserve or what factors determine that how much reserve the particular banks would always have in that particular point of time. So, these are the different concepts what basically, what we are going to discuss in today's session.

(Refer Slide Time: 01:10)



Let us understand class, first of all we have to understand that, what is money position management? The money position management basically is a worrisome subject or worrisome matter for the commercial banks. It is really difficult for commercial banks to manage this, money positions in the sense we are talking about highly liquid instrument, how much high liquid instruments should be kept?

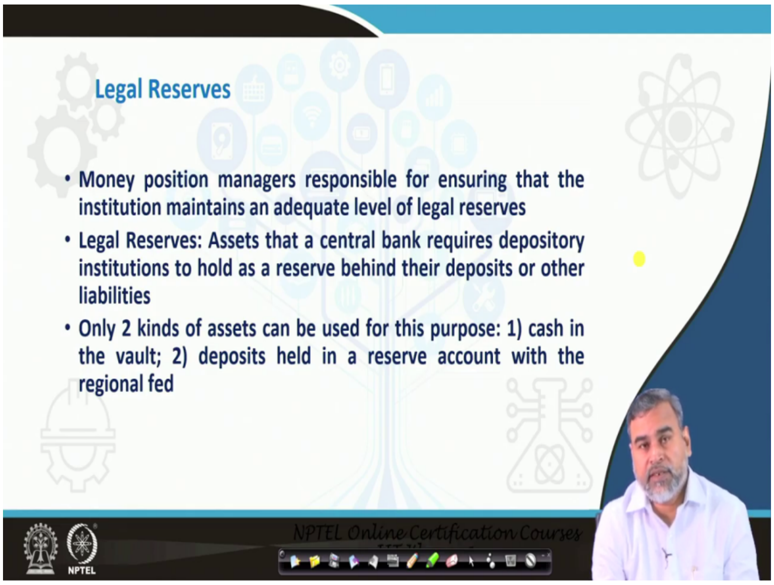
Because there is a kind of trade-off between liquidity and the profitability. So, whenever you talk about the trade-off between liquidate and profitability, why we said this is worrisome mater? The worrisome matter in the sense that, if they go for maintaining the high cash with them their profitability gets affected and if they will go for high profitability then their liquidity gets affected.

So, therefore the bank always have a kind of decision always they want to take which have a long-running implications from the profitability without affecting the liquidity position of the particular commercial bank. That is why the money position management is quite important or this is a complex of what the commercial banks always try to do.

For the large banks it may not be a problem, because they have the enough infrastructure and enough kind of financial power to have this kind of management policy by appointing the money position manager whose job is basically to do all kinds of analysis and decide that how the money should be managed? But for the small banks the relative ability is difficult to manage those things because of lack of many other issues.

So, that is why they can provide that or they can outsource that particular job from the different or the larger depositors by paying certain money. But the money position management is really kind of complex job of what the bank's always try to do. Because to have a balance between profitability and the liquidity.

(Refer Slide Time: 03:33)



But the major thing here you remember as a part of this the major thing is, how to calculate the legal reserves? The legal reserves, for example in India we have a system the CAS reserves issues, apart this is a regulatory reserve. But again certain kind of liquidity like SLR minimum amount of investments we are making in the different kind of short term securities and these are highly secured securities like government securities.

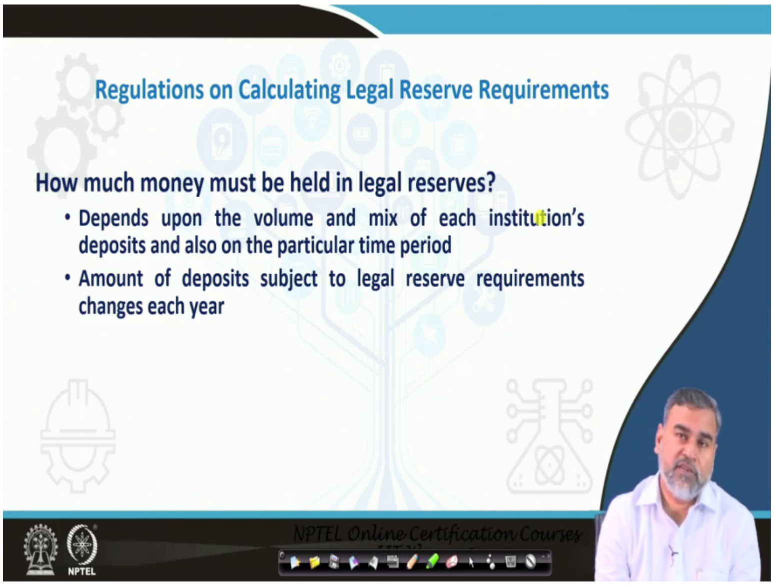
So, these are the different policies what the central bank can take for the reserve system of this particular commercial banks banking sector. But with a particular bank if you talk about US and other developed economies, you can find out that the calculation of legal reserve is a very important issue in that particular context, why basically the bank has to maintain an adequate level of legal reserve to avoid any kind of fluctuations with respect to or because of the difference between the expectations and the actuals which may happen in the market at a particular point of time.

So, because of that the legal reserves concept has to be always understood carefully and it has also to be managed carefully by that the bank will not be in that much trouble to manage their profitability and liquidity. So, in a true sense if you want to define the legal reserve, what is the legal reserve? These are the assets that a central bank requires the depository institutions to hold as a reserve behind their deposits or other liabilities.

How much reserves this should maintain against their deposits and other liabilities that is basically we call it a legal reserve. This is a regulatory reserve basically always the central bank always wants. And there are 2 types of assets which can be used for this purpose, 1 is cash and another 1 the deposits held in a reserve account with a regional central bank or maybe in aggregate, any directly in the central banks head office.

So, in the U.S. they always go for the deposits held in the reserve account with the regional Federal Reserve banking system and they consider these 2 assets one is cash and another 1 is the reserves with the bank, central bank.

(Refer Slide Time: 06:12)



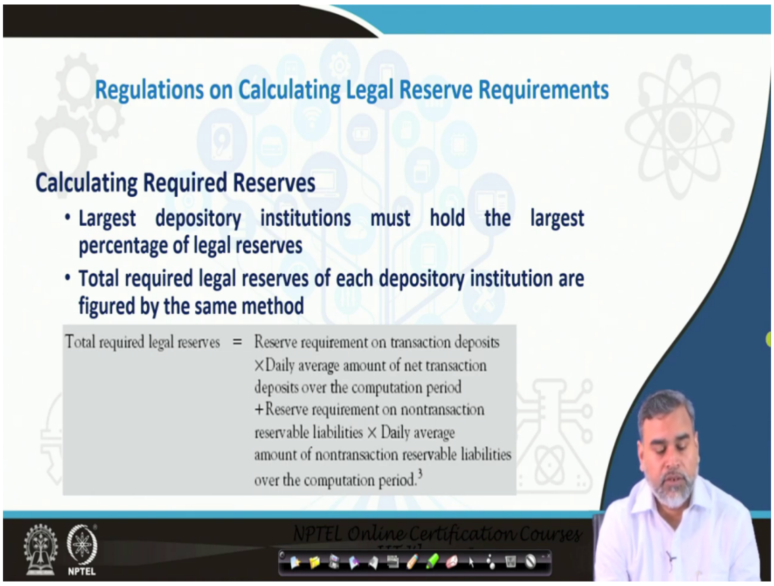
Then how much money should be held in the legal reserves? It is basically the certain percentage of the total deposits and the other liabilities what is the commercial banks have. So, that is why it depends upon the volume and mix of each bank deposits and also on the particular time period.

In that time period how much deposits and other liabilities the bank is holding and accordingly the amount or the percentage of the legal reserves they define, they always considered. And depending upon the fluctuations of the deposits and as well as the other requirements, the legal reserve requirements basically changes every year.

Whenever the deposit will change, the deposit, volume of the deposit of the bank will change or whenever there is a certain kind of other policy requirement are always the central bank wants to meet, they can change this reserve requirements of the commercial banks to get certain kind of policy objectives in the system.

So, therefore the reserve requirements depends upon the volume and mix of the deposits and as well as that the policies of the kind of we can say that broader objective for the commercial central bank wants to fulfil using this concept of the legal reserves. So, these are the 2 things what basically we should keep in the mind whenever we are trying to calculate that how much money should be kept as a legal reserve with that particular commercial bank. That is basically the first thing we have to keep in the mind.

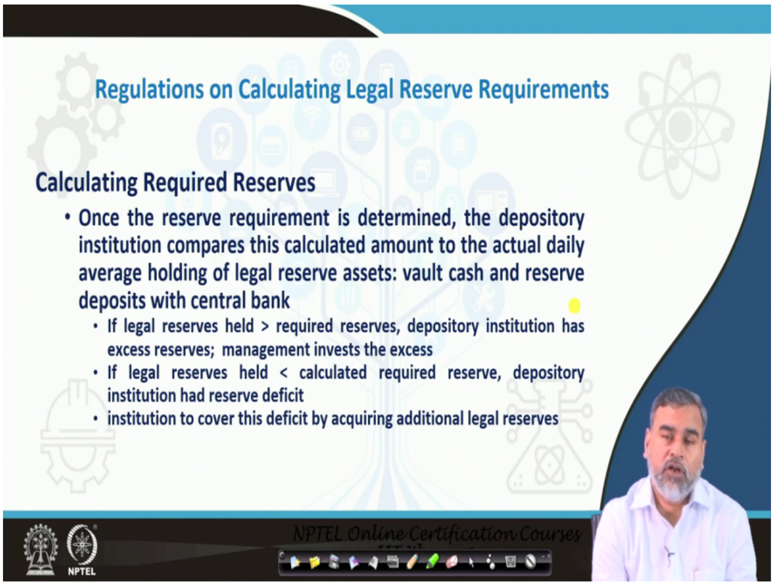
(Refer Slide Time: 08:02)



So, whenever we are calculating the required reserves of that particular bank in a particular bank. So, the largest depository institutions if you see they hold the largest percentage of the legal reserves, because their deposit base is larger. So, considering those volumes of the deposits they always go for a high legal reserves or the largest legal reserves.

So, if you want to calculate the legal reserves requirement of a particular bank it is calculated in this way. It is a reserve requirement on transaction deposits into daily average amount of net transactions, deposits over the computation period, plus the reserve requirements on the non-transaction reservable liabilities whatever the commercial banks have into the daily average amount of non-transaction reservable liabilities over the computation period. So, these are basically this is the way the total required legal reserve of the commercial bank can be calculated.

(Refer Slide Time: 09:17)



So, once the reserve requirement is determined using this particular formula the depository institutions compares the calculated amount to the actual daily average holding of legal reserve assets, the actual daily average holding of the legal reserve assets like your vault cash and the reserve deposits with the central bank.

Once this reserve requirement is determined the depository institutions compare this calculated amount to the actual daily average holding of the legal reserve assets to see that whether any extra money is required or the bank has already fulfilling the criteria whatever the central bank has fixed or they have already kept extra whatever money they have that is already exceeding that particular amount what they are supposed to keep.

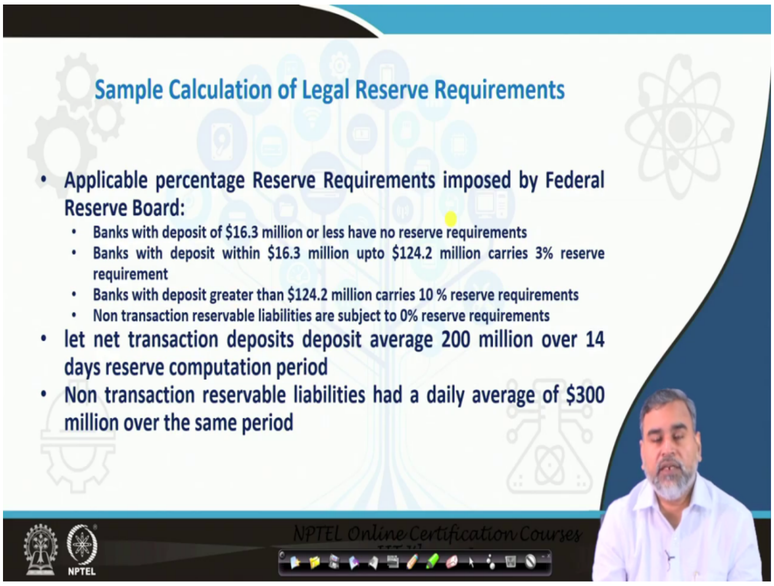
So, if the legal reserve what the banks are holding that is more than the required reserves. Then the depository institution has the excess reserve and in that particular point of time it is easy for the management to invest more in the system, more in the market. So, if they have an excess reserves which is that means the actual reserve is more than the expected or the required reserve or whatever they have or they need.

So, in that context the money which is kept aside instead of keeping it as a reserve, liquidity reserve, the banks can utilize it for the investments in the market. But if the legal reserves what the banks are holding is less than the calculated required reserve, then what we can say that the depository institutions like banks have the reserve deficit.

So, if the reserve deficit is there the bank try to fulfil that gap, because there is a regulatory cost also involved in that. If the required reserve is not maintained then the regulatory cost also the banks have to bare. And sometimes the regulatory cost is so huge that it will be difficult for the banks to operate in a very effective manner to maintain their profitability if they are incurring huge cost in terms of the regulatory cost.

So, that is why the institutions to cover this deficit by occurring the additional legal reserves in this particular system and this additional legal reserves can be created on the basis of the either liabilities or on the basis of the assets. So, whether they should go for the liability management to cover up these things or they can go for the asset management to cover up that thing that also we have to keep in the mind or that particular banker has to ensure that.

(Refer Slide Time: 12:15)

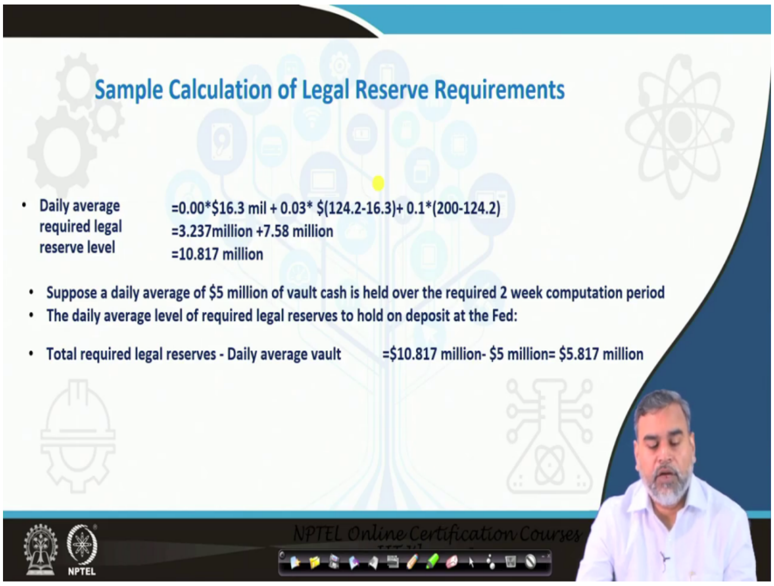


So, in this context what we have seen if you see the example this is the example from the U.S. market at point of view. The banks with the deposit of 16.3 million dollar or less of no reserve requirements generally that is the provision what they have made banks with the deposit within 16.3 to 124.2 carries the 3 percent reserve requirement. Banks with the deposit greater than 124.2 million dollar carries 10 percent reserve requirements and the non-transaction resolvable liabilities are subject to the 0 percent reserve requirements.

So, it may be uniform across all type of banks or in U.S. structure basically, those reserve requirements vary on the basis of the size of the deposit what the banks are holding, banks are having. The net transaction deposit average is 20 million over 14 years or 14 days reserve computation period if you assume that.

Then the non-transactional reservable liabilities had a daily average of 300 million dollar over the same period. Let this is the data which is given to you, then our objective is to calculate that how much legal reserve the banks should hold. Your net transaction of the deposit average is 200 million over this 14 days period. Then your non transaction receivable liabilities had a daily average of 300 million in the same period.

(Refer Slide Time: 14:01)

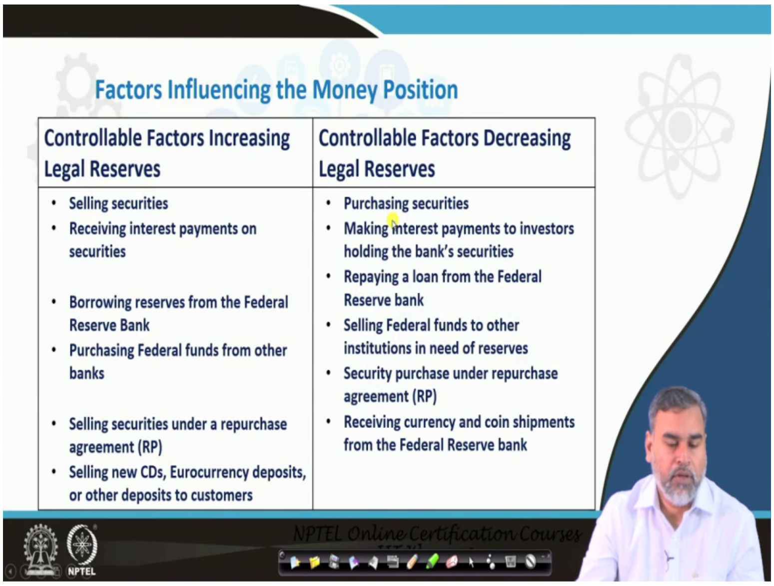


So, if this data is available to you then how you can calculate the legal reserve requirement. The legal reserve requirement is calculated in this way that 0 into 16.3. Because that is 0 percent always we have considered into 0.03 into 124.2 minus 16.3 plus 0.1 into 200 minus 124.2. So, we have got the required legal reserve which is 10.817 million.

So, the average required results what the particular bank has to maintain that is 10.817 million in that particular point of time. Suppose a daily average of 5 million dollar of vault cash is held over the required 2 weeks competition period then the daily average level of required legal reserves to hold on deposit at the central bank.

Then in that case the total required legal reserves minus daily average vault that will be coming around 5.817 million that is deducted from the legal reserve requirement for the commercial banks supposed to have. So, then end of the day we have 5.817 million which is the difference between the local required legal reserve and the daily average vault, cash which is available with the commercial banks.

(Refer Slide Time: 15:32)



There are many factors which affects the money positions of the commercial bank. There are some factors which are controllable factors increasing the legal reserves and there are some factors which is declining this legal reserves. Because already we know that the legal reserves is fluctuating over the time.

And in this context we have to see that how these factors are basically playing the role, how what kind of factors are really playing the role which is affecting the money position management of the commercial banks. So, if you want to see the factors which are trying to control the legal reserves in terms of the increasing the legal reserve. Then we have the selling the securities.

We can sell the security, receiving interest payments on the securities, because these are the short-term cash flows what the commercial bank can receive, borrowings from the central bank, purchasing the funds, government funds, from the other banks. Because there is an interbank lending market and there are the banks are basically the primary dealers, who are basically doing the trading within themselves for the variety of reasons.

So, in that context 1 banks have some surplus money another bank has a deficit. Because of that in the Indian context we have a concept of the call money market which is over time market, where 1 bank can transact with other banks and 1 bank is a lender and another bank is basically a borrower.

So, in this fashion that how much borrowing they can make from the other banks and also through the different kind of repo and other kind of operations what the reserve bank and other central bank has fixed, they can also borrow through and that kind of process from the central bank at that particular point of time.

Selling the securities on the repurchase agreement, that is a repo that I have explained to you. Selling new certificate of deposits, euro currency deposits and other deposits to the customer. There are varieties of deposits the commercial banks hold. The legal reserves can be maintained by selling those securities or by selling those assets what they are holding in the different forms.

It can be a certificate of deposits, it can be commercial papers, it can be euro currency deposits etc. So, any kind of deposits which are used basically to maintain this legal reserves of that particular commercial banks. There are some factors which are basically affecting adversely or inversely to the legal reserves, like purchasing the securities.

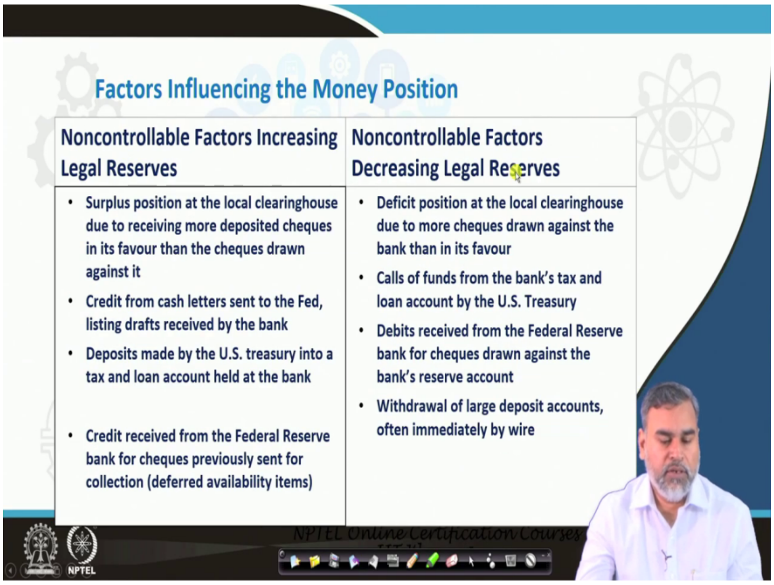
Obviously, selling the security has a positive impact on the legal reserve and purchasing security has a negative impact on the legal reserve. Making the interest payments to the investors holding the bank securities, repaying a loan from the Federal Reserve Bank or any other central bank whenever you have taken the loan, the loan has to be repaid back.

Then if a lone will be repaid back, then obviously the total money position or money supply position of the commercial banks is going to be disturbed. So, that is why that also has to be controlled. Then the selling this funds, government funds, to the other banks for the overnight basis or for a short term basis that also declines the legal reserves because that affects the total balance sheet and accordingly the percentage which is fixed by the regulator to deposit the money with respect to the legal reserve that may change.

Then security punches under repurchase agreement like our reverse repo, that are the repo operation negative adjustment facility what already we know about the Indian banking sector or the monetary policy of the Reserve Bank of India.

Then you are receiving the currency under other coin shipment from the Federal Reserve Bank, the foreign currency basically is managed directly by the central bank or the Reserve Bank of India. So, in that context that whenever any kind of bank needs to maintain the liquidity in terms of the foreign currency, so they can always receive the currency and the other shipments from the Reserve Bank or the Federal Reserve Bank in the U.S. and Reserve Bank for the Indian.

(Refer Slide Time: 20:09)



Then we have some other factors which are basically also affect the money positions, like surplus position at the local clearing house which has a positive impact on the legal reserves. Then in its favour than the cheques drawn against it, credit from the cash letter sent to the central bank, listing drafts received by the bank, positions what basically deposit positions particularly made by the U.S. treasury into a tax and loan account for held in that particular bank.

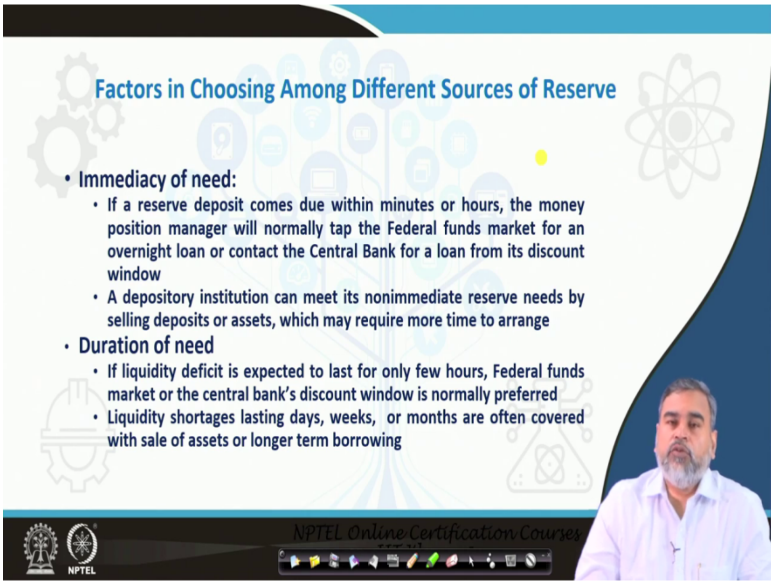
And the credit received from the central bank for the cheques previously sent for the collection that is also part of the legal reserve calculation of the commercial bank. While analysing the factors which is declining or is helping to decline this legal reserves these are deficit position at the local clearing house due to more cheques drawn against the bank than in its favour.

The call of funds from the banks tax and loan account by the government or by the U.S. Treasury if it is talking about the U.S. market then the debits received from the Federal

Reserve Bank for cheques drawn against the bank's reserve account. Then we have the withdrawals of the large deposit accounts often immediately by wire.

So, these are the different factors which are basically reducing the legal reserve or helping to reduce the legal reserve and these are the factors which are used basically to increase the legal reserves for the commercial banks by using the different kind of strategy or different kind of instruments.

(Refer Slide Time: 21:59)



Then there are many factors which are affecting the different sources of the reserve account of the reserve liquidity of the commercial bank. What are those, why basically the commercial banks keep the reserves and already we know that depending upon the interest rate fluctuations and other fluctuations the market basically fluctuates.

And if the market fluctuates and the particular instruments which are highly sensitive towards the market and as well as they are sensitive to the change in the interest rate automatically those factors basically or those particular items are going to or value of those items is going to be changed.

So, that is why there are many factors. So, always we consider which basically analyse the different type of sources of reserves, then how the banks are going to manage that particular thing. So, there is 1 factor is immediacy. What do mean by the immediacy? Immediacy means if a reserve deposit wants basically whenever the bank gets due to within minutes of the hours.

The money position manager will normally tap the government's fund market for an overnight loan to contact the central bank or they can contact the central bank for a loan from its discount window. So, if they will realize that reserve deposit account is coming then the money manager will always try for your deposit amount with the reserve bank by borrowing from the interbank market or the call money market or they can also take the help of the Reserve Bank of India or any other central bank to provide a discounted loans which will be helpful to maintain their liquidity. So, that is immediacy.

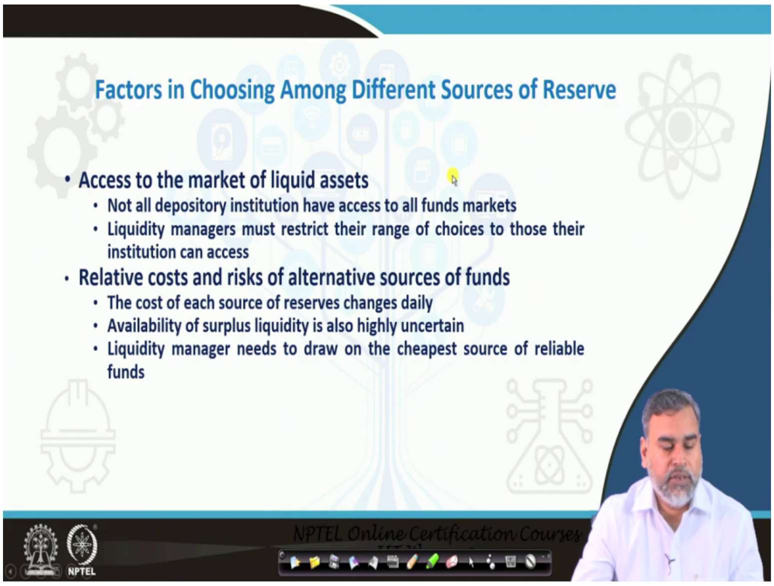
Then you have the duration of the need. When you need this? At what time the requirements are there by that the certain precaution can be taken to overcome that particular type of problem. So, the duration context what we have seen, if the duration deficit is expected to last for only few hours then the central bank or the any of the reserve bank discount window is normally preferred in that particular point of time because they have already incurred a huge loss in the market and again they have to rely upon the government basically to fulfil that particular gap what basically they have realized before.

Liquidity shortages can last from day to weeks or months or these are basically often covered with the sale of the assets or the longer term borrowings. Mostly what basically has been observed that in the developed countries even as well as somewhere in developing countries the liquidity reserve requirements are maintained through we can say that sale of the assets or by going for the long term borrowings from the different agencies.

So, which is also not healthy practices of the banks but still bank has to maintain that liquidity. So, because of that at the time of requirement they can borrow, but sometimes the borrowings becomes costlier because of the other external forces. The exogenous forces can decide that whether this particular borrowings from the different entities are advisable or their cost effective or not.

If they are not cost effective then there is a problem that whether we should go for this kind of financing or this kind of availability of the resources to the commercial bank or not. So that is why the duration basically of a need that has to be very much clear.

(Refer Slide Time: 25:43)



Then we have the access to the market, because we should have enough access to the market, because to create the liquidity, because not all depository institutions have access to the all funds market and the negative managers must restrict their range of choices to those their institution can access.

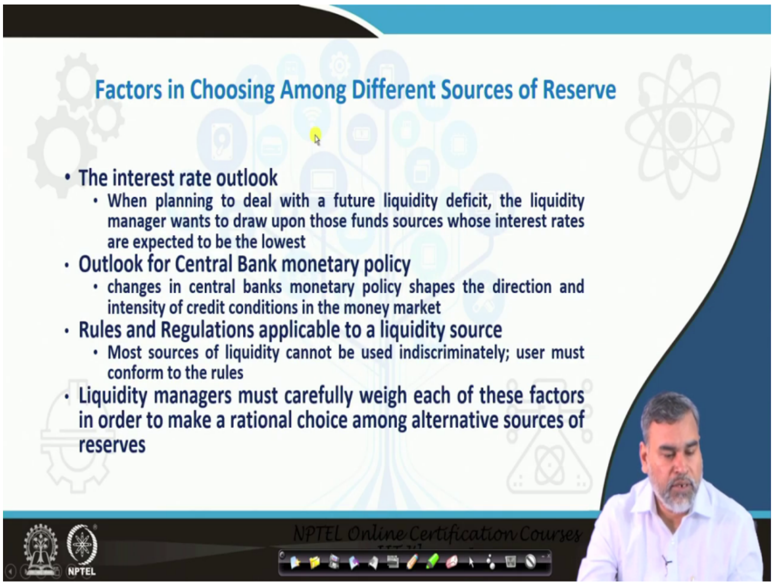
So, there are plethora of resources or the sources are available but the bank basically are the liquidity managers who decide that trends basically where the bank can access to a particular security and the bank will be able to manage that kind of security properly within that particular system. Then we have the relative cost and risk of alternative sources of funds that whenever we are raising the funds from the different sources the every source was a cost, some cost are basically implicit and some cost is explicit.

And there are certain kind of cost what basically very difficult to measure but still there are certain kind of risk which is involved against that. So, the cost of each source of results basically changes daily. Because of changing the deposits and other things that the cost of each source of deposits also change frequently.

Then the availability of the surplus liquidity is also highly uncertain. That how much liquidity the bank can create in a particular point of time that is also very much uncertain nature that how this thing can be realized with this particular given infrastructure how this can be realized and at a particular point of time.

Then the liquid manager needs to draw on the cheapest source of reliable funds, that which fund basically the cheapest and what is that source of the fund, the thorough cost benefit analysis of the financing activities has to be carried out whenever you talk about the cost and the risk which are playing the role for choosing there are different alternative sources of funds which are used by the commercial banks for investments.

(Refer Slide Time: 27:50)



Then we have another factor, we have interest rate outlook. When planning to deal with the future liquidate deficit, the liquidity manager wants to drop on these funds sources whose interest rate is expected to be the lowest. They can switch over from the long-term interest rate or maybe the interest rate which are reasonably higher than the rate what we are getting even if in the fixed rate period for a particular point of time.

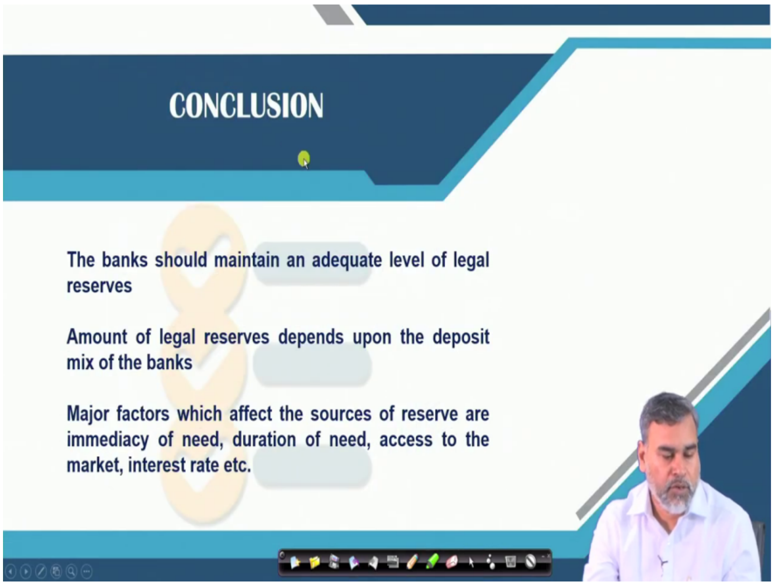
There is central bank's monetary policy again and again I am telling that plays a very significant role across the globe. So, any change in the monetary policy changes or safe the direction of intensity of the credit conditions. Because if the interest rate is higher, let in India if you take the example if the repo rate is increasing then your lending rate will be increasing.

The lending rate will be increasing then what will happen that, the credit condition of the market will be worsen because the demand for loan will be declining but if the demand for loan will be declining then it is a problem for the banks to disburse or loan to create the money and the bank will be in the trouble.

So, the high interest rate scenarios, if you observe that the demand for loans declines although the deposit weights increasing to some extent but the bank are not able to fulfil their objective because they want to maintain both liquidity and profitability at 1 go. Then most sources of liquidity cannot be used indiscriminately under most confirmed to user most basically conform to the rules that what kind of rule they should adopt to basically maintain that liquidity position of the commercial bank.

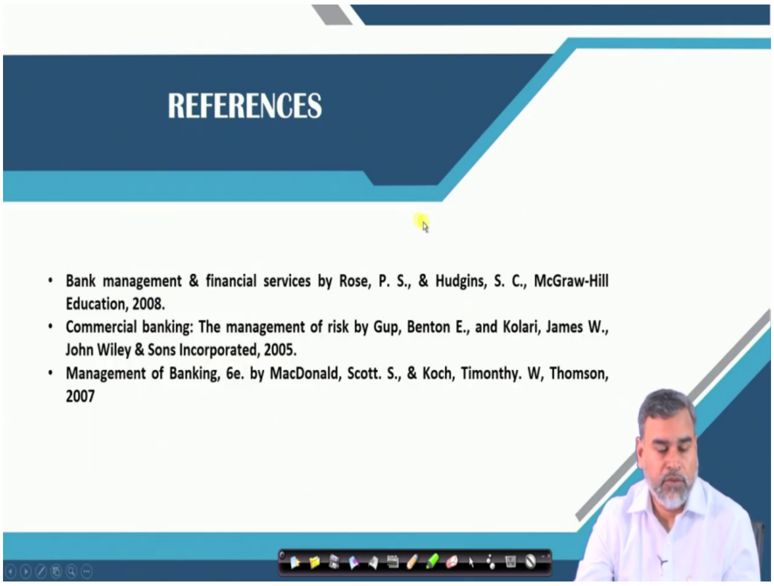
So, liquidity managers must carefully provide the weights of these factors to make a very rational choice among the different type of alternatives which are existing in the system. So, the thorough cost-benefit analysis and as well as the different kind of approaches should be used to find out the actual weights should be what should be given by that the rational choices can be made among the different alternative sources which are available in the system.

(Refer Slide Time: 30:07)



So, here what basically we have seen, we have seen that the banks would maintain an adequate level of legal reserves and the amount of legal reserves depends upon the deposit mix of the banks and major factors which affects the sources of reserves are immediacy of the need, duration of the need, access to the market, interest rate, then the cost which is associated with the alternative sources of the funds. So, these are the different factors which affect the source of the results.

(Refer Slide Time: 30:41)



So these are the references what you can go through for the detailed analysis. Thank you.