Management of Commercial Banking
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Lecture 47
Managing Liquidity of Commercial Banks - II

So, in the previous class we discussed about the bank liquidity and the basic concept of bank liquidity and what are those possible sources of the liquidity problem of the commercial banks.

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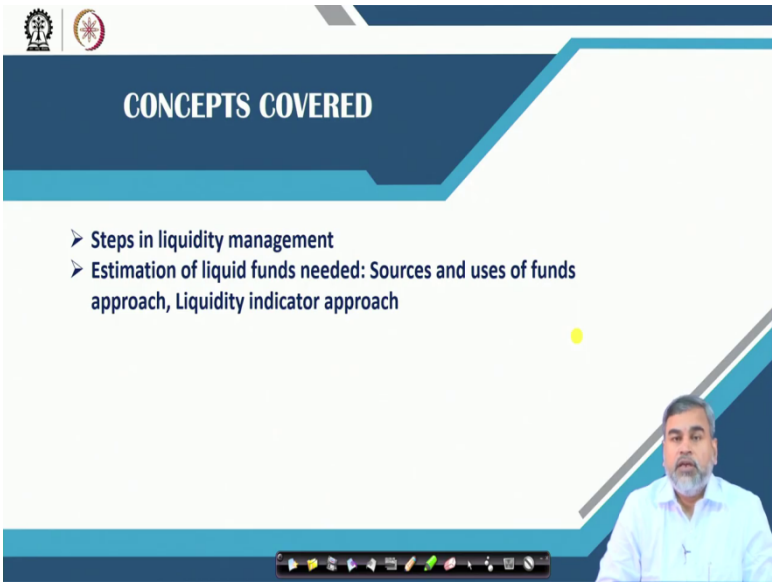

Today we will be discussing about certain issues related to again the liquidity management of the commercial bank. Here we will be discussing about what are those, whenever any commercial banks basically goes for liquidity management, what are those different steps

they follow, that means the steps in the liquidity management this is number 1 and number 2 that whenever this particular liquidity requirements are estimated then what are those different methods or different approaches are used to measure the liquidity requirements of the commercial banks.

So, there are many kind of approaches. There are many approaches the commercial banks used to measure the liquidity needs that how much fund the need to manage that liquidity positions. So, we will be discussing today there are 2 approaches, 1 is your sources and users of the funds approach and another 1 the liquidity indicator approach and the other approaches we will be discussing in the forthcoming classes.

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So, first of all whenever you talk about the steps in liquidity management, what do you mean by this? The liquidity management has 2 steps. Whenever the commercial banks manage the liquidity they follow basically 2 steps. One is first of all the estimate of the funds, how much funds are needed to or to manage their liquidity position, this is number 1 and number 2 that what are those different kind of strategy they adopt or liquidity management strategy what we can say what are the different kind of strategy they adopt to meet this liquidity needs, how much is the need and how the needs can be fulfilled.

So, these are the 2 major broad steps on the commercial banks basically always adopt whenever they manage the liquidity in their particular respective banks. So, all of you know that whenever you go for the estimation of the funds needed for the liquidity, we have

measure factor which is responsible for this your deposits inflows and outflows and the different varying levels of the loan commitments.

How much loans have been paid? How much repayment is made and as well as how much probability of loans are going to be default? All kinds of aspects will be taken into consideration whenever we are going for estimating the funds needed and how the deposits are coming and how the deposits are withdrawn this is also another factor we have to consider.

So, this is the basic steps for the funds requirement or liquid funds requirement to manage the liquidity of this particular commercial bank. This is basically number 1. Number 2, that whenever we manage this liquidity or made this liquidity requirements we follow certain strategy and the strategy it some banks can use their assets to manage the liquidity and some banks can use the liabilities to manage that liquidity and some banks can use both assets and liabilities to manage the liquidity.

In which part of the balance sheet can be used to manage the liquidity. If you are holding some assets, some securities you can sell it manage the liquidity, you can borrow, manage the liquidity, borrow from the money market and other instruments that already we have discussed, to manage the liquidity.

So, there are various ways the liquidity managements are basically made. So, that is why it can come under an asset management process or it can also come under a liability management process. So, whether the bank will go for asset management strategy or a liability management strategy that is a different issue, but either of these 2 or maybe both can be utilized to manage the liquidity positions.

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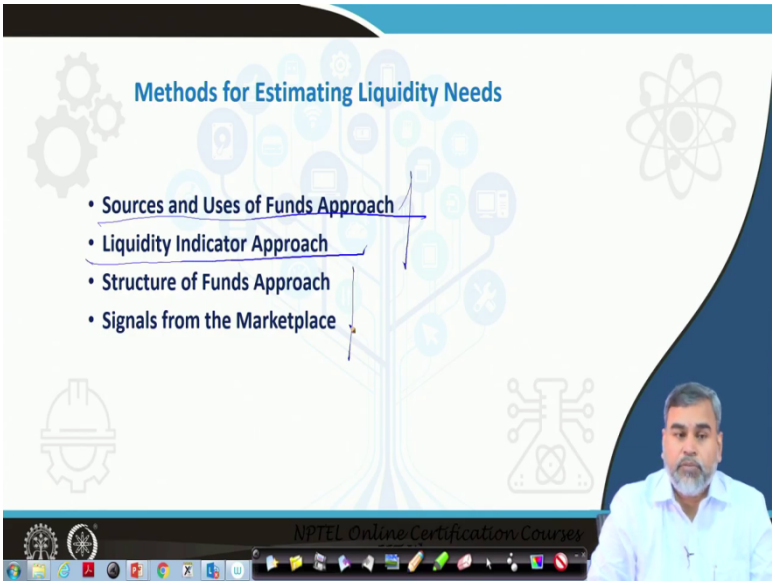

Then we will see that whenever you go for the liquidity management needs there are 4 approaches. 1 is your sources and uses of the funds approach. We have a liquidity indicator approach. We have a structure of the funds approach and we have a signals from the marketplace approach.

But in today's class we will be discussing about the first 2, that is your, sources and uses of the funds approach and this liquidity indicator approach and today's session we will cover up these 2 and next we will be covering up the structure of the funds approach and the signals from the marketplace approach.

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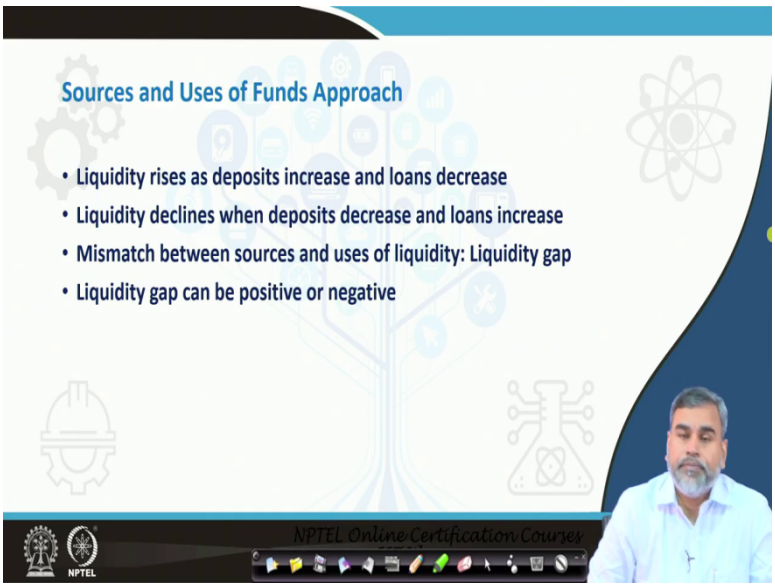

So, let us see that what do you mean by the sources and users of the funds approach. The sources and uses of the funds approach is very simple in nature by definition itself you can predict or you can guess that what this particular approach is. This approach is basically nothing but it talks about what are the different sources of liquidity and how these particular sources are going to be utilized to cater the demand for the liquidity.

So, liquidity basically rises when the deposit increases and the loan decreases, Liquidity rises when the deposits increase and loans decrease, that is number 1. Number 2, liquidity can decline on the deposit a decrease in loans increase that is very simple in nature. So, if the relatively the deposit amount is going to increase and loans are going to decrease then the liquid is increasing.

So, if the deposits are decreasing and loans are increasing then the liquidity decline that is basically already you know. But already we know that there is a mismatch between the sources and uses of the liquidity. Various reasons already we have explained in the previous class there is always a liquidity gap.

The liquidity gap is always there, because the demand and the supply is not same and the sources and uses of that particular liquidity positions are not also same. If the sources and uses are not same then obviously the liquidity gap is always exists and the liquidity gap can be 0 whenever there is a balance and the liquidity gap can be negative or can be positive depending upon the sources and uses of the funds.

Many funds are available but users are not there then the gap will be positive, but sources are not available but the demand is there or users are required then we can say that the gap is negative. So, depending upon this we can first find out what is the gap? Whether the gap is 0 or the gap is positive or the gap is negative. This is the first approach or first step we have to formulate whenever we go for the estimating the liquidity needs of this particular commercial bank.

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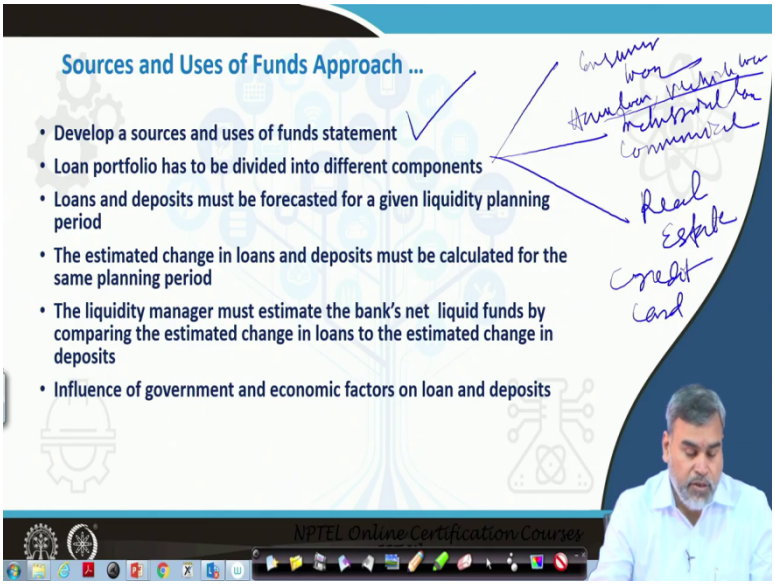

So, because of that what we have to do? Because of that we develop a sources and uses of the fund statement. First you prepare a statement of the different sources and uses of the funds, particularly the liquid funds, first basically you develop that. Second what you can do, if you have a loan portfolio then you divide it in the different components.

What do you mean by different components, there are different type of loans, you have consumer loan, you have industrial loan, industrial or commercial loan, you can have a loans which are specifically for the real estate loans, credit cards loans, etc then within consumer loan, you have house loan, you have vehicle loan, all kind of categorization what basically what you can make.

Then the loans and deposit in each category must be forecasted for a given liquidity planning period. You prepare a frequency, time frequency 0 to 3 months, 3 to 6 months, 6 to 9 months like that, 3 months period, 1 month period depending upon your requirement you prepared a different time zone, different maturity buckets and in the different maturity buckets you understand how much your sources and how much your liabilities that is very much important.

It is not that, in aggregate whether my sources and uses are matching or not that is not going to help you, what basically can go in to help you, it will help in that regard whenever in the different maturity buckets you are basically able to find out the requirements. So, this is basically first you have to understand that concept. Then the estimated change in loans and deposits must be calculated for the same planning period.

How much estimated change can be predicted, depending upon the past data, depending upon the, first of all you have to forecast and then the deposits and the loans, then how much change can be forecasted can be predicted, that also you have to estimate. Then what basically we have to do? The liquid manager, liquidity manager must estimate the bank's net liquid funds by comparing the estimated change loans to the estimated change in the deposits.

How much liquidity is required, what is the net liquidity position of the commercial bank and how much money is really required for to maintain the liquidity that has to be estimated from this statement and while making this we have to also incorporate the other government in the and as well as the economic factors which can change the demand for liquidity in as well as the supply of the deposits.

Because any kind of market fluctuations, any kind of policy measures are going to highly influenced the loans and the deposits of the commercial bank, because any kind of exogenous changes in the market is going to distort the liquidity position of the commercial banks through the change in the interest rate, so that interest rate prediction is also important.

And already we know that the policies, the government interventions and other economic factors, external factors which is coming to the market these are all coming in the random fashion. So, if all are coming in the random fashion it is very difficult to predict that what is going to happen in the near future from today.

So, because of that while forecasting that particular aspect also has to be considered whenever the forecasting is carried out or the estimated change in the demand for deposits or the supply of the deposits and demand for loans that has to be carried out, that is basically is the step we have to follow for this.

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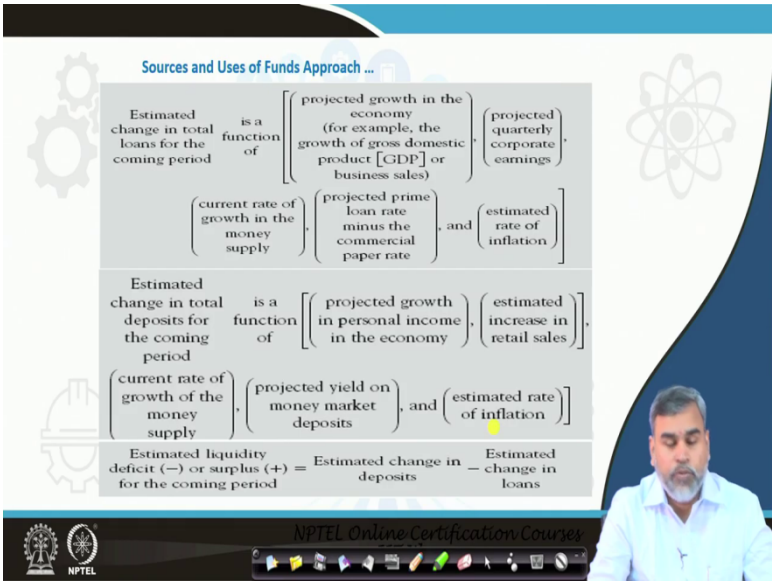

So, if you summarize this thing what basically you can see, what are those factors which are responsible for the estimated change in the total loans for the coming period and what are those factors which are affecting the estimated change in the total deposits for the coming period or the future period.

If you see the estimated change in the total loans for the coming period is a function of, already we say, growth in the economy, you have the business cyclic conditions in general what we can say, whether it is you can measure it through GDP or through the different sales and all these things, more or less in aggregate we can say that it is a business cycle.

What is the earnings of estimated or projected quarterly earnings you can create from this particular business and money supply, growth rate of the money supply which is a proxy for the monetary policy, what kind of monetary policy is basically used in that particular point of time because monetary policy is creating the liquidity in the market, in the funding liquidity in aggregate sense and that will have the impact on the liquidity inside this particular bank or inside this particular organization.

That is what we have to understand that what is the growth rate of the money supply, then the projected prime loan rate minus the commercial paper rate which is their basically the difference or basically spread we have to see and the estimated inflation rate, expected inflation rate. How the purchasing power of the consumer is going to be affected due to the other macroeconomic fundamentals.

Then what you got? We have the business cycle, we have the monitory policy, we have the corporate earnings, we have the risk, basically ailed spread then also we have the expected inflation. So, these are the tentative measure factors which are affecting the demand for the loans, estimated change in the loans and like that if you want to see what are those estimated change in the deposits or the factors which are affecting the estimated change in the deposits again we have the projected growth in personal income.

Because if the economy is better than the income level will be better by that we and say that the personal income will be greater. So, then personal income the surplus money can be deposited in the bank as one kind of less risky instruments in the financial system. We have estimated increase in the return sales within the bank.

Obviously money supply is another factor, already we know that there is a clear linkage between the aggregate money supply of the funding liquidity with the organization's funding liquidity. Projected yield on money market deposits. How much return we are expecting, the investments of the deposits what we are making in the money market then in place on debt is a common factor which is affecting the lending or the loan business and as well as the deposit business.

So, then once you have made a model which can give you the idea about the estimated change the total loans and estimated change in the total deposits, then you are in a position to calculate the estimated liquidity. It can be deficit or it can be a surplus for the next period that is basically your estimated change in the deposits minus the estimated change in the loans.

So, how much is supply side how much is the demand side, then you can say that whether you have a surplus or you have a deficit. Then accordingly we can take this or we can make our strategy that whether we should go for using the assets or you are going to use the liability side for managing the liquidity position of the commercial bank.

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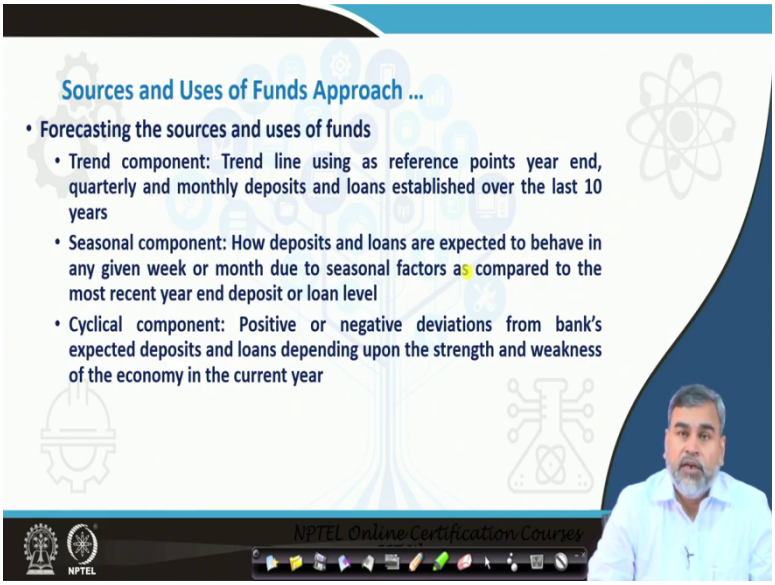

We can take an example in this case in the forger, but in the further analysis before we go for the example we have to see that whenever you go for the forecasting basically we go for normal in a basic preliminary stage although there are many models nowadays is available for forecasting these particular figures but in general traditional way if you want to go for the forecasting we can go for a trend analysis, we can go for, extract the seasonal component from this then as well as we have to find out the cyclical component from this.

So, the seasonal component is basically what? It is the trend line using a reference point year end, quarterly or monthly deposits and loans established over the last 10 years or more. Minimum 10 years data you can see and you can find a fitted trend from that, then you can find out what is the trend of that particular loans and deposits in this particular period and whether the same trend will go on or not and whether we are above the trend or below the trend, then accordingly we can decide that further this how the behaviour of this particular variable is going to be change.

Then after finding this trend component, then another component we have to extract that the seasonal component. In the seasonal component case what basically we have to do that how deposits and loans are expected to behave in any given week or the month due to the seasonal factors as compared to the most recent years and deposit or the loan level.

Then we have, for example, if you want to calculate this you can consider, let you are calculating a particular data for first week of January then you take this 10 years average of the first week of January, then you compare it with respect to the 10 years average of the end

week of the December, then you can observe that how much fluctuations are observed within this 2 period, then that basically can be considered as a seasonal component which is moving from the January first week from the December last week, if you are using the Euclid data.

If you are going for monthly data like that you can compare between the end of January with the end of the December. The average data for the 10 years for the January and the average data for the 10 years for the December, then you see the changes between these two, how these particular differences are there among these two that can be considered because of the seasonal component, this is the easiest way of finding out seasonal component.

Then you have the cyclical component which basically talks about positive or negative deviation from the banks, expected deposits and loans depending upon the strengths and weakness of the economy in that particular current year. The cyclical component also is very important in this context, because we have to see that how the other factors the cyclic.

Business cyclic factors as in a macroeconomic sense is going to affect the demand and supply of the sources and uses of the funds what the commercial banks are going to use for calculation of the funding requirements. So these are the component first you can use it for making your statement and from there the liquidity gap can be calculated.

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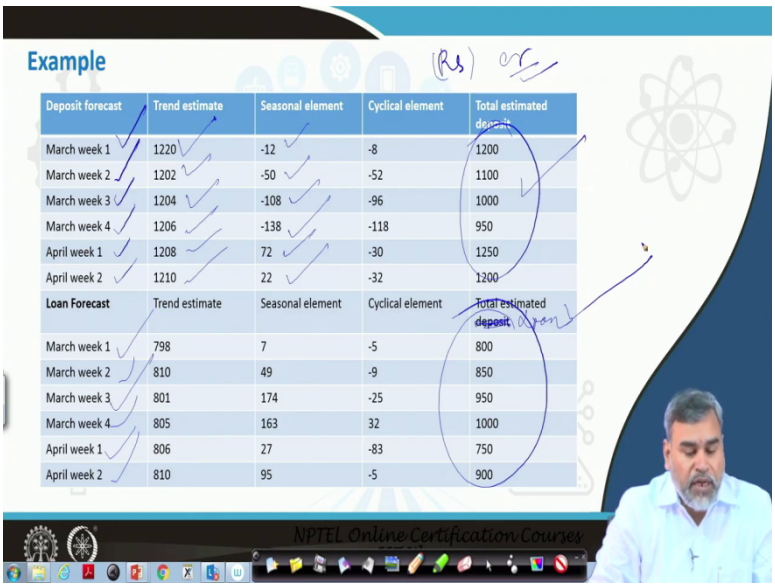

You see this example, let the deposit forecast we are making for March week 1, week 2, week 3, week 4, April week 1, April week 2. Let we have 6 weeks forecasting what we are making. So, if you see that these are the 6 weeks. Let from the trend calculations we have seen that, in the March week 1 let these are all in the is represented as rupees crore.

The particular bank has a deposit of 1220 crore, March second week 1202, third 1204, 06,08,1210. So, this is the forecasted figure what we got it from the trend analysis by plotting a trend line for the last 10 years data we have we got this particular figures which give you the trend component of this particular data.

Then comparing with respect to that previous months last week's data for a reasonable period of time, let 10 years' time, we have tried to find out the seasonal component from this and the seasonal component was let for March week 1 minus 12 it is minus 50, minus 108, minus 138, 72, 22.

So, then the cyclical component also in the same way we have calculated due to the macroeconomic fundamentals due to the fluctuations and all. So, this is the cyclical component what basically we have observed in that particular context. So, then if you add up these 3, 1220 + (-12) + (-8) it will be 1200, which is the total estimated deposit in the week first week of the March.

Then 1100 in the second week of the March, 1000 crore in the third week of the March, 950 crore in the 4th week of the March, you see that these are all the estimated data what you got it in terms of deposits and the same logic can be applied with respect to the loans forecasting also. These are the different estimated loan.

So, if you want to calculate this they after this what basically what we can do then we can find out how much is the liquidity requirement this commercial bank has in this particular period of time then if you see that.

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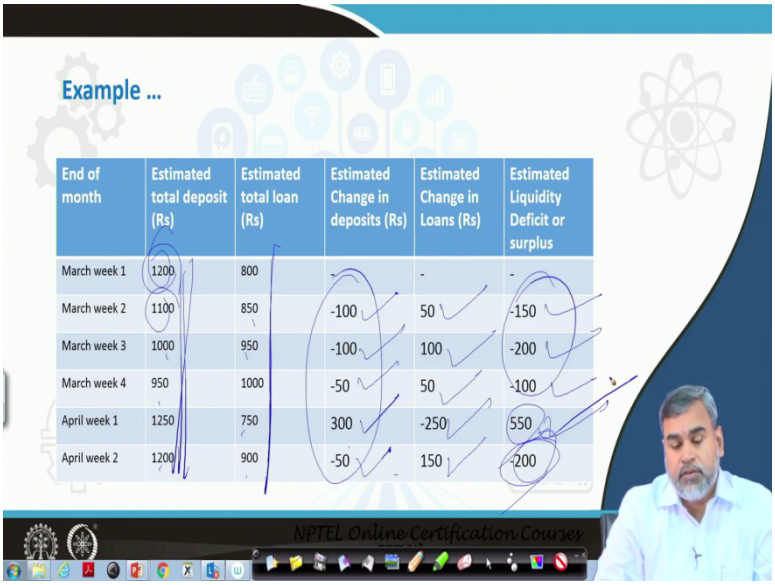

Now, we can come back to we have taken this estimated total deposits and estimated total loans. So, these are our estimated deposits and these are the estimated loans and now what we have done we have calculated the estimated change in the deposits and estimated change in the loans.

So, estimated changes or deposits means this is week 2 minus week 1 this is minus 100, 1000 1100 minus 100, 950 minus 1000 minus 50, 1250 minus 950 300, 1200 minus 1250 is equal to minus 50. So, these are the estimated change in the deposits across the weeks. Like that you can find out the estimated change in the loans that is 850 minus 800 that is 50, 590 minus 850 100, 1000 minus 950 50, 750 minus 1000 minus 250, 900 minus 750 is equal to 150.

So, we also got the estimated change in the deposits and as well as the estimated change in the loans. So, after you get this you can find out your estimated liquidity deficit or the surplus. So, now what is the estimated liquid deficit or the surplus, this is deposit minus loan minus 100 minus 50 minus 150, minus100 minus 100 minus 200, minus 50 minus 50 minus 100, it is 300 minus minus 250 that means 550 which is a surplus, in that sense and minus 50 minus 150 is 200.

So, for this bank if you consider there is a deficit in these 5 weeks and there is a surplus in only in the 1 week. So, the portfolio manager or the liquidity manager who is managing this they can find out trend that how this liquidity position is going to be. That is basically their forecasting before the first week of the march. Once they have forecasted before the first week of the miles then they will be ready themselves that how this position can be managed.

So, this is what basically the concept of the estimation of the liquidity deficit or the liquidity surplus and accordingly bank can make the strategy that we have to discuss further.

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So, whenever the basle committee has made a framework for the liquidity management of the different banks. If you consider for the large banks more particularly, they have said that first of all you measure and manage the net funding requirements, construct the detail sources of the fund, statement refer to as the maturity ladder that already we have discussed.

Maturity ladder gives a daily calculation of the cumulative net excess or deficit of the fund selected dates in the future. Varieties of the maturity ladder constructed considering alternatives scenarios, like normal business conditions, institutional specific problems, general market problems in the different scenarios. The maturity ladder has to be considered in the different scenarios by that the statement can be adequate enough to capture all kind of dynamics in the market.

Managing the market access see that how you are going to manage the market access in that particular point of time. And always prepared for a contingency planning if you are forecasting or anything does not go as per your expectations then what kind of contingency planning you can make by that this particular thing can be realized. So, these are the recommendations or framework given by the Basel committee for the sources and users of the funds approach.

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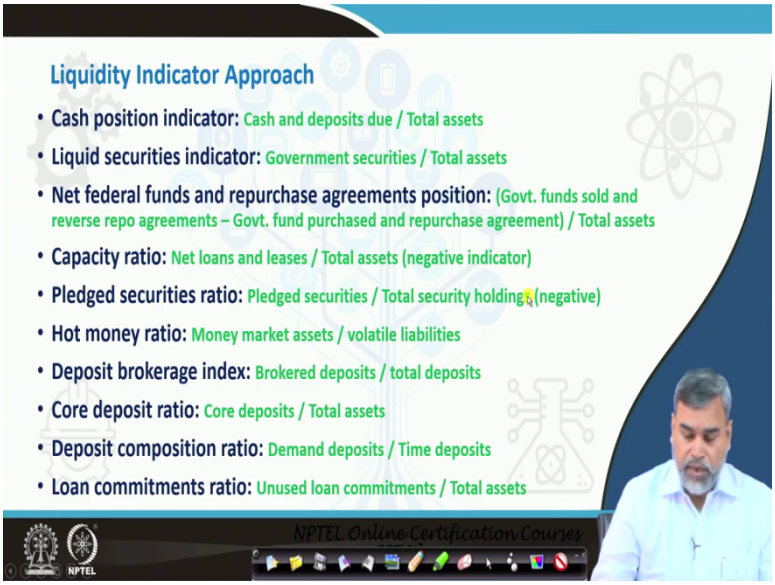

And we have another approach which is the liquidity indicator approach. We have cash position indicator which is cash and deposits due divided by total assets. If it is more than liquidity will be more liquid securities indicator that is government securities upon the total assets. If it is more than obviously the liquidity of the commercial bank will be more.

So, these are all the direct relationship with the liquidity position of the commercial bank. The net federal funds and deposits agreement positions like nothing but the government fund sold and the reverse repo agreements minus the government funds in the repurchase agreement divided by total assets. If it is more than also liquid it will be more.

Net loans or the leases divided by total assets how much total loans they have given? If it is more than which is called the capacity ratio which has a negative indicator for the liquidity. If it is higher than liquid it will be lower. If it is lower than liquidity will be higher. Then we have the place security ratio how much securities are placed and what kind of placing policy the commercial bank is following.

And the place securities upon the total security holdings that is basically also a negative indicator. If it is more that means it is inverse related to the liquidity position of the commercial bank. So, if it is more than the liquidity will be less and if it is less than liquid it will be more.

Money market assets upon the volatility liabilities. If it is more than liquid it will be more, if it is less than it will be less. Deposit brokerage index, the broker deposits upon total deposits

again it is inverse related to liquidity. If the broker deposits will be higher than it is related and was related to the liquidity position of the commercial bank.

Core deposits, core deposits means the particular deposits which are reasonably there in the particular bank for a particular period of time and which are reasonably highly short-term in nature. These are the saving deposits what we can say the core deposits upon the total assets. If this is higher than that is when the liquidity of the bank is better. The bank and fulfil the short-term requirements only what they need.

So, that also is another indicator the deposit composition ratio that when demand deposits upon time deposits. If it is higher than the bank is less liquid, because the time deposits are long-term in nature and then the demand deposit if it is higher than it is high liquidity demand deposits when it is a part of the savings deposits and the current deposits.

So, if it is higher than that means they are full they are able to fulfil the short-term requirements. If the term deposit or time deposits are more that means that particular assets are not that we utilize for the managing the liquidity of the commercial banks. Then we have the loan commitments ratio.

It is nothing but the unused loan commitments which is not yet realized, but the commercial bank has committed that the loan will be disbursed in this future dates. If this will be more than current liquidity is not getting affected but the future liquidity position is getting affected.

So, any kind of forecasting whenever we make, then we have to take at most precaution that whatever loan how many loan commitments the commercial banks have made and whether the loan commitments are going to be fulfilled or not if that commitments are more than maybe future liquidity position of the commercial banks will be less.

So, these are the liquidity indicator approach also commercial banks can look at that whether the liquidity position is good enough to cater the demand for the liquidity of the different customers whatever they have.

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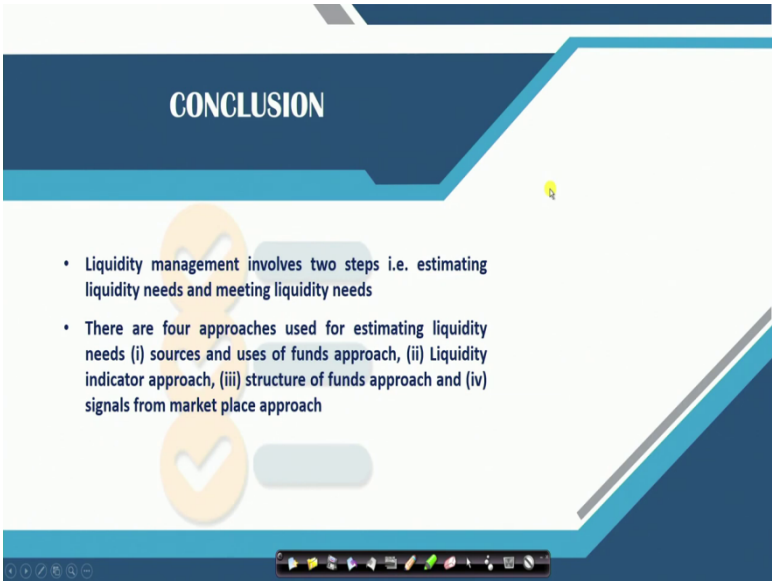

So, what basically we have discussed here, the liquidity management process which has 2 steps 1 is estimation of liquidity needs and the management for the meeting the liquidity needs or the strategy that we will be discussing further. And there are 4 approaches 1 is your for estimation of the liquidity 1 is your forces and ages of the funds approach, liquidity indicator approach, then structure of the funds approach, and the signal from the marketplace approach that these two approach what basically we will be discussing in the next session. And we have discussed about the sources and uses of the funds approach and the liquidity indicator approach.

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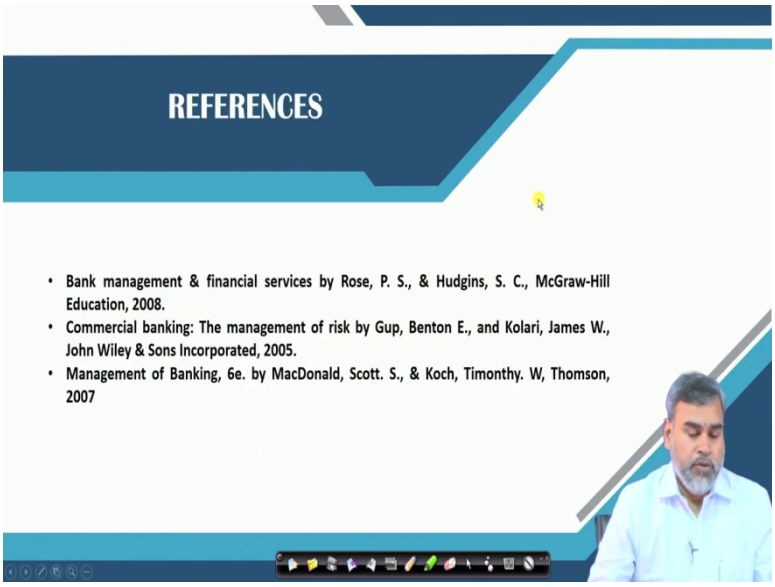

So, these are the references you can see for the detailed analysis of the particular issue or a particular concepts whatever we have discussed today, thank you.