Economics of Banking and Finance Markets
Prof. Sukumar Vellakkal
Department of Economic Sciences
Indian Institute of Technology, Kanpur

Lecture - 15
Principles of bank management - I

Welcome to this session. In the previous lecture we have covered some aspects of Bank Management.

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We had discussed the liquidity management and subsequently we had covered asset management. Hence, today's session we will be discussing liability management and capital adequacy managements.

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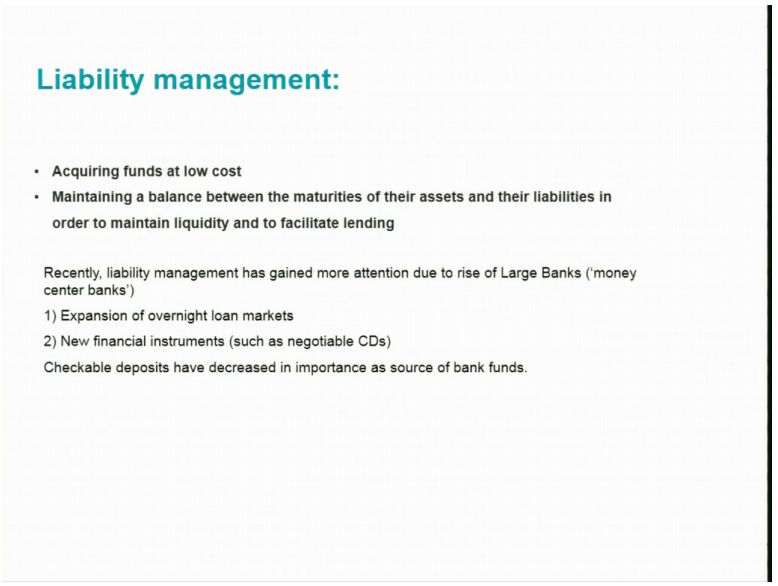

So, coming to the first part: liability management, it is related to the acquisition of funds at low cost by the banks. The liability management goes well along with the asset management as well, that is maintaining a balance between maturities of their assets and their liabilities to maintain liquidity and to facilitate lending and thereby also to make profit.

And recently liability management has gained more attention due to rise of large banks, especially money center banks. So, because of money center bank expansion there is expansion of overnight loan markets, new financial instruments such as negotiable certificates of deposits etc. As a result, the importance of checkable deposits has decreased as major sources of bank funds.

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So, let us now talk about capital adequacy management.

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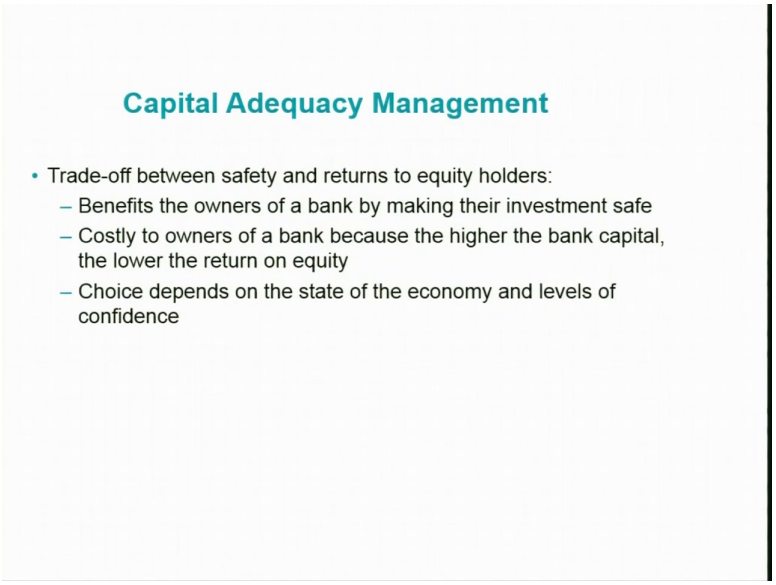

There is a trade-off between safety and returns to equity holders, the equity capital. The benefit the owners of a bank by making their investment safe, that is one. It is costly for the owners of a bank because the higher the bank capital lower the return on equity, we will be discussing this point in detail in subsequent discussion.

The choice between safety and return depends on the state of the economy and the levels of confidence in the economy. The overall health of the economy, the socio-economic soundness of the economy these are the factors matter in determining the tradeoff between safety and returns to equity holders.

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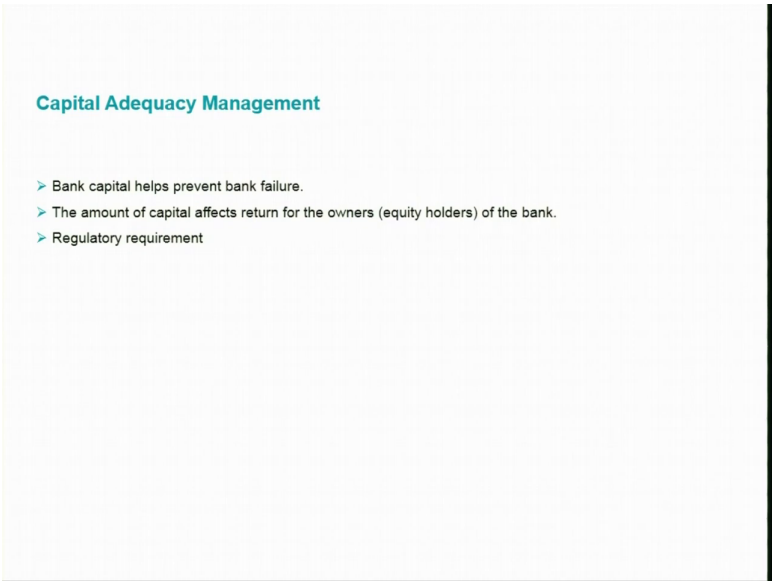

Capital adequacy: one of the key things here is at ensuring sufficient capital, that is, adequate capital that helps bank prevent bank failure.

The amount of capital affects return for the owners of the bank as well. At the same time from regulatory perspective, there is clear cut regulatory requirement of the required amount of capital in the bank, the proportion of capital to the total assets of the bank.

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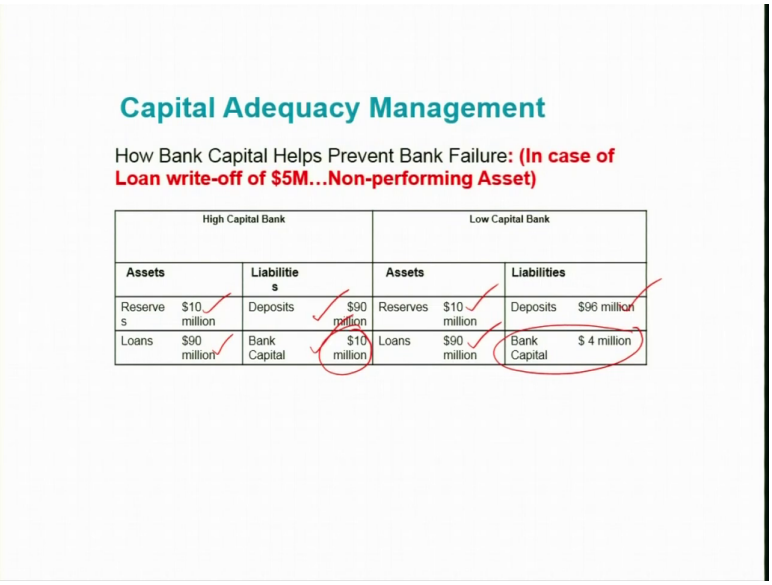

Let us examine these aspects by using a simple comparative example of two banks; one is keeping high capital that is called high capital bank, and another bank who is having low capital as compared to its total assets, let us call it low capital bank.

So, let us start this one, looking at the assets and liabilities of these banks, both banks having the total assets of 100 including the reserve 10 million and loans 90 million. And for the low capital bank, we are presenting the same reserves and same amount of loans. And now look at the liability side, this bank having 90, the high capital bank is having 90 million dollars as the deposits and this equity capital is 10 million, that the 10 percentage of the total assets.

Now, look at the low capital bank, you can see that this bank is having 96 million deposits, but the bank capital is only 4 million. So, in both scenarios, look at this bank that the banks with the high capital 10 million and bank having low capital of 4 million, then let us see if there are some non-performing assets.

So, in case of because banks will be having lots of non-performing assets like loan, that is, bad loans. For the non-performing assets-NPA, they must write it off after certain period.

So, suppose both banks are having 5 million dollars of bad loan, non-performing assets and they must write it off, in this case let us see how both banks, how their capital helps them in preventing bank failure due to the write-off of NPAs.

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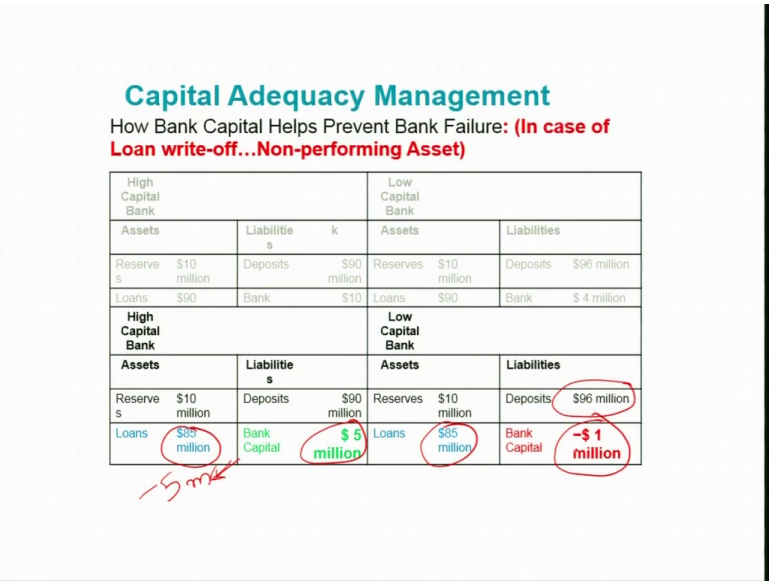

The bank that is keeping high capital adequacy ratio, that the 10 percentage, then you know that when they are writing off 5 million, the loan becomes only 85, out of these 5 is already written off.

you know that when there is a loan write off, suddenly their assets declining and eventually one possibility is that bank may collapse. When the banks finance this loss by using the bank capital (that the 10 million, out of this), this write off is taken by 5 million from the bank capital. Here the high bank capital, they could get 5 million easily from their bank capital.

What about the next bank, the small capital bank? So, if they had a loan write-off, they need five million here. But only 4 million capitals; obviously, they can take 4 million from here, but they must borrow as well. So, you can see that the bank capital is reduced to minus 1 million. So, in this case you can see that the bank is facing deficiency of funds.

What if there is a deposit outflow also. At that time, the small capital bank cannot raise money, because they are already having capital deficiency there, there is a shortage in bank capital.

This is one of the main reasons why banks keeping more equity capital as proportion to their total assets; you know, that is, to prevent bank failure.

The central bank, in the large interest of the economy to ensure that there is a sound banking system, want to prevent bank failures. So, they want to prevent bank failure. Because of that,

one of the regulatory requirements is that the central bank will be asking the commercial banks to keep adequate capital matching with their total assets.

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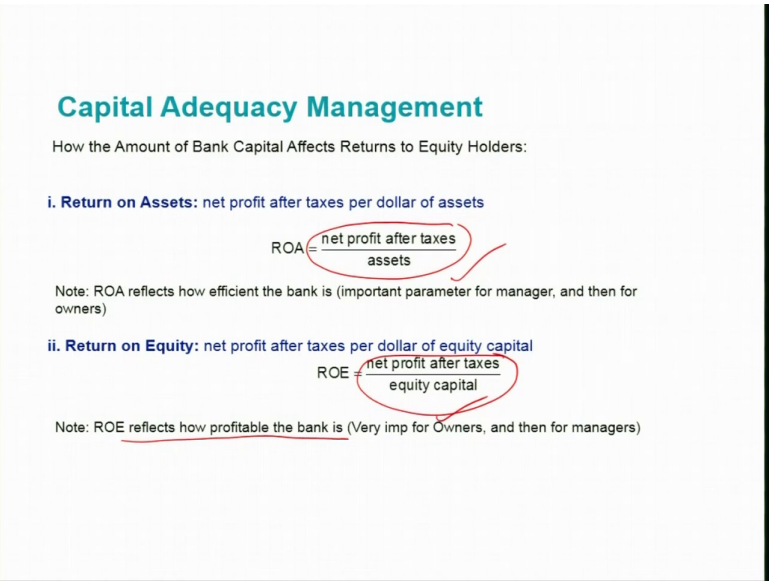

In the capital adequacy management, let us discuss some of the concept that is being widely used and applied.

One concept is called return on assets. The amount of capital affects the return to equity holders. The return on assets is the net profit after taxes divided by the total assets.

The ROA, shortly we call it ROA reflect how efficient the bank is, and is an important parameter for manager, because per unit of assets how much profit they are making. And then second, this is only secondary importance for owners because what they are interested is that not the net profit per asset, they are primarily interested profit per equity.

For an equity holder, that is, a shareholder in a bank, the most important concern is per unit of share; how much dividend they are getting, how much profit they are getting.

Let us discuss the second concept called return on equity. The return on equity means profit after taxes per unit of capital, this is called return on equity, that the net profit after taxes per dollar of equity capital.

The concept of the return on equity, it reflects how profitable the bank is. Because in the previous concept we seen that ROA, it reflects how efficient the bank is; that means, profit per unit of assets, but the return on equity it reflects how profitable the bank is.

You know that this parameter is very important for the owners, that the shareholders of the bank, and then only it is important for the managers. The shareholders will be looking how much profit they get per unit of share that they are holding with the bank.

So, in that way the ROE very important for the owners whereas the ROA is more important for the managers of the bank. The objective function of the managers and the objective function of the owners of the bank or the shareholders are different, and we will be discussing it in another context when we discuss conflict of interest concept in one of the subsequent sessions.

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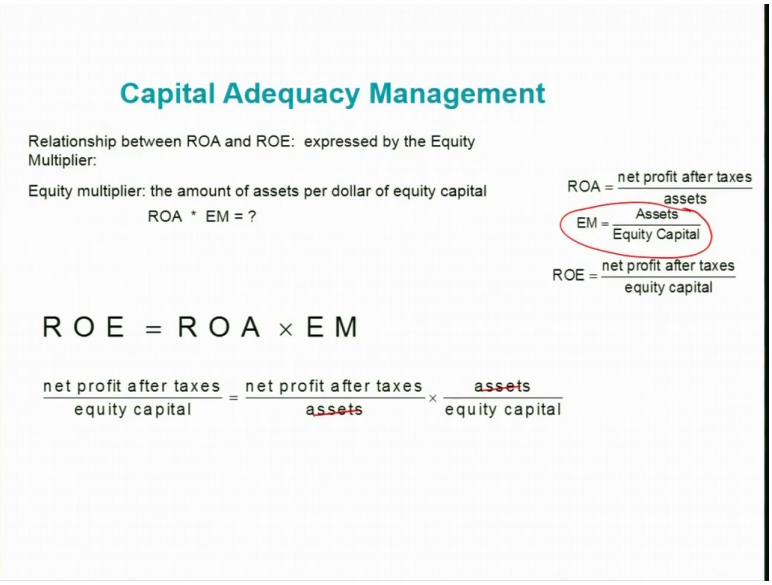

Let us now look at the relationship between ROA and ROE. We have defined the ROA that net profit after taxes divided by assets and the ROE that the net profit after taxes divided by the equity capital. The relationship between ROA and ROE can be expressed by the equity multiplier.

The equity multiplier that we are going to write down here shortly, the amount of assets per dollar of equity capital; that means, per unit of capital how much assets a bank can raise.

The ROE equals the ROA times EM. We are going to write it like that, ROE is equal to ROA times equity multiplier. You can see here the ROE is equal to ROA times equity multiplier. The equity multiplier is the amount of assets per dollar of equity capital. This is the relation. This is the equity multiplier that the assets per unit of capital.

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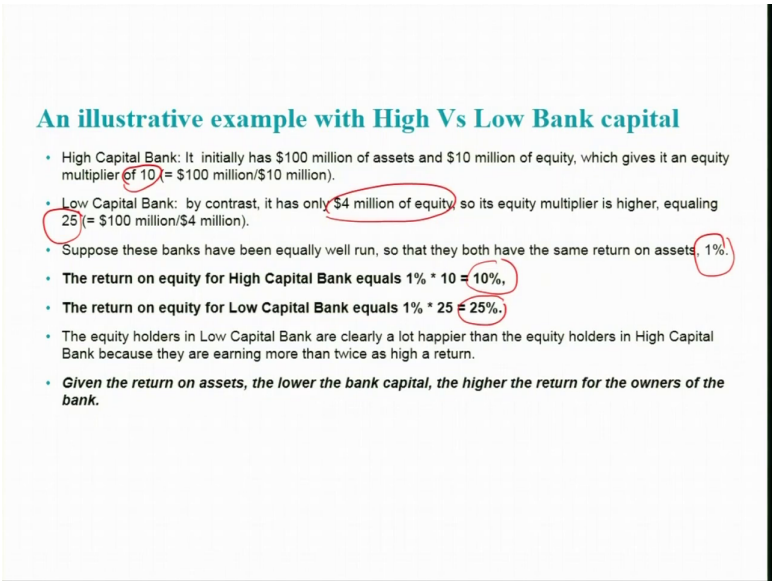

So, let us take an illustrative example with a high versus low bank capital. Assume that a high bank capital bank initially has 100 million of assets and 100 million of equity.

It gives an equity multiplier of 10, that is 100 million divided by 10 million. The asset divided by the equity capital. So, the equity multiplier here is 10.

Let us look at low capital bank with same amount of assets but it has only 4 million of equity capital. So, you know that the equity multiplier is higher equaling 25. So, the low capital bank and the high capital bank having equal amount of assets having different equity multiplier.

It means the asset that they are generating by a given unit of equity capital. In this case, suppose these banks have been equally well run so that they both have the same return on assets, for example, 1 percentage. Let us assume that each bank makes a same return on assets, that is, 1 percentage. Now look at the return on equity for high capital bank and the low capital bank. The return on equity for high capital bank is 1 percentage times 10. So, you

know that this bank, the return on equity per unit of capital, the high capital bank is earning 10 percentage.

And what about the low capital bank? The return on equity for the low capital bank is 25 percentage. You know who is happier? The equity holder in low capital bank is clearly a lot happier than the equity holders in high capital bank because, you know, they are earning more than twice as high a return. Higher the dividend they are getting and the share price their stock will also increase.

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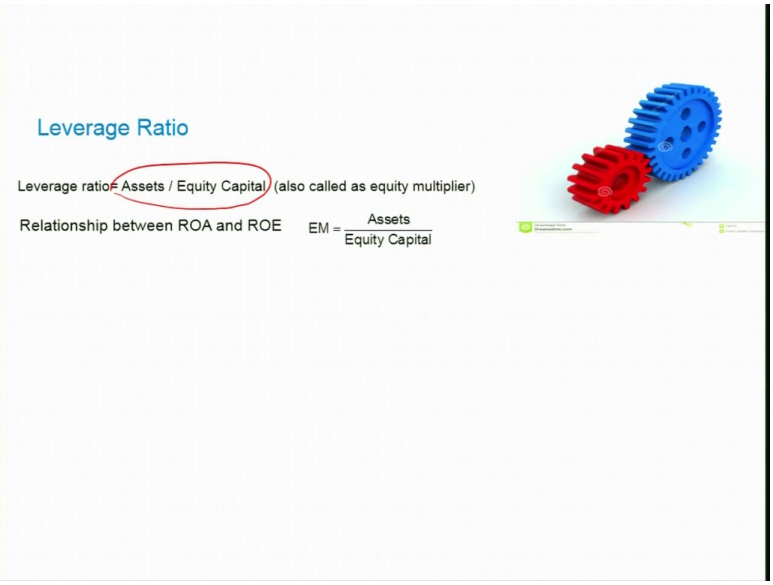

From this, we can also relate discuss another concept. Another name of this equity multiplier is the leverage ratio; that means, with a given amount of capital how much they are they can leverage, how much assets they are able to acquire; that means, the leverage ratio is the assets divided by equity capital.

So, in this case, you can see that the equity multiplier, that the assets divided by the equity capital; this is called the leverage ratio.

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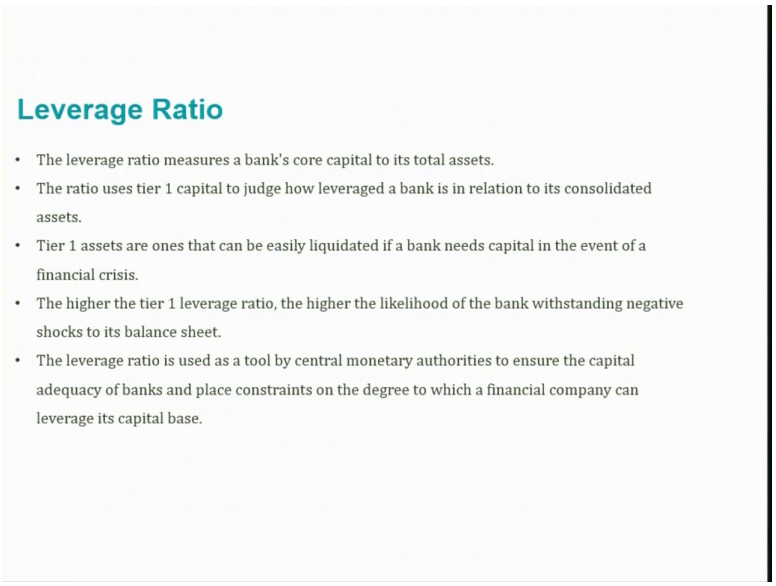

The leverage ratio measures a bank's core capital to its total assets, the ratio uses tier 1 capital to judge how leveraged a bank is in relation to its consolidated assets. About the tier 1 capital, it represents a bank's common equity, retained earnings, reserves and certain instruments with discretionary dividends and no maturity.

The tier 1 assets are ones that can be easily liquidated if a bank needs capital in the event of financial crisis. Higher the tier 1 leverage ratio, higher the likelihood of the bank withstanding negative shocks to its balance sheet. The leverage ratio is used as a tool by central monetary authorities to ensure the capital adequacy of banks, and place constraints on the degree to which a financial company can leverage its capital base.

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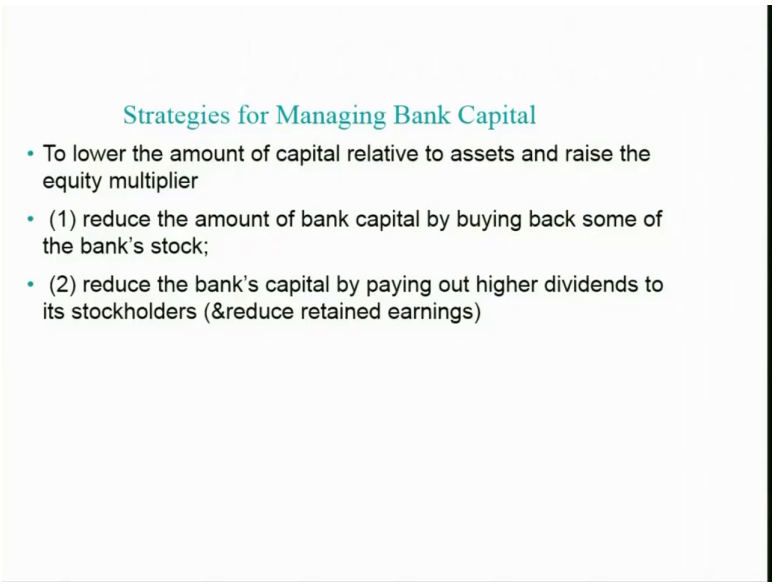

Let us now discuss the strategies for managing bank capital. Suppose both banks, the low capital bank and high capital bank, if both were able to acquire same amount of assets and able to earn same rate of return, then, you know that the low capital bank will be earning more profit, and their shareholders will be happier.

If they want to maximize profit, if they want to earn more profit, they must reduce the size of the bank capital. To lower the amount of capital relative to assets and raise the equity multiplier, what they must do is that one option is to reduce the amount of bank capital by buying back some of the bank stock, that is, buying back some of the issued stock by the bank, this is one option.

The second option is to reduce bank capital by paying out higher dividends to its shareholders; that means, a reduce the amount of the retained profit the bank is keeping, and distribute more dividends to the shareholders, so that the net total capital of the bank will be coming down.

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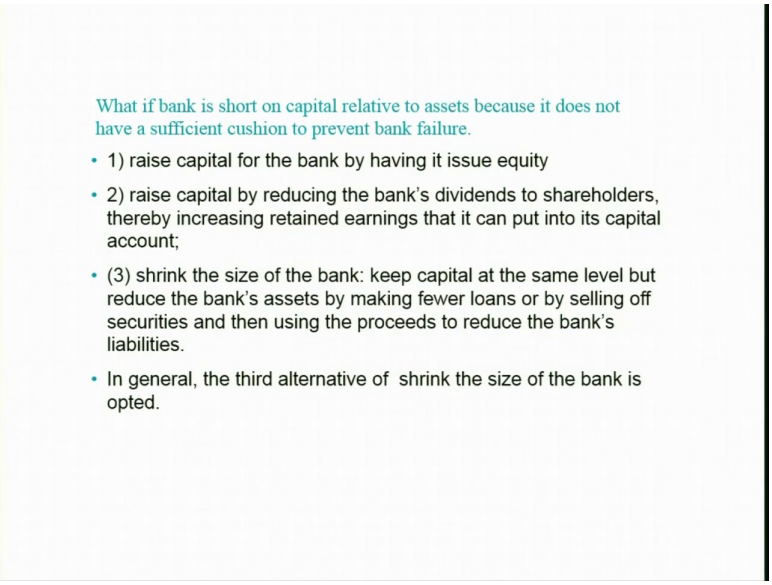

On the other hand, what if a bank is short on capital relative to assets because it does not have sufficient cushion to prevent a bank failure. In that case, the bank can raise capital for the bank by issuing equity, issuing more equity.

And the second option is to raise capital by reducing the banks dividends to shareholders; that means, reduce the dividend, reduce the distribution of dividend to the shareholders so that it can become the part of retained earnings. And that it can put it into capital account as well.

And the third option is to shrink the size of the bank; that means, keep capital at the same level, but reduce the bank's assets by making fewer loans or by selling of some of acquired securities, and using the proceeds to reduce the banks liabilities.

In general, the third alternative of shrink that the shrinking the size of the bank is the widely used option, because raising the capital by issuing equity may not go well with other shareholders; that means, as diluting the share will not go well with the shareholders. And similarly reducing the dividends to the shareholders: it also will not go well with the shareholders.

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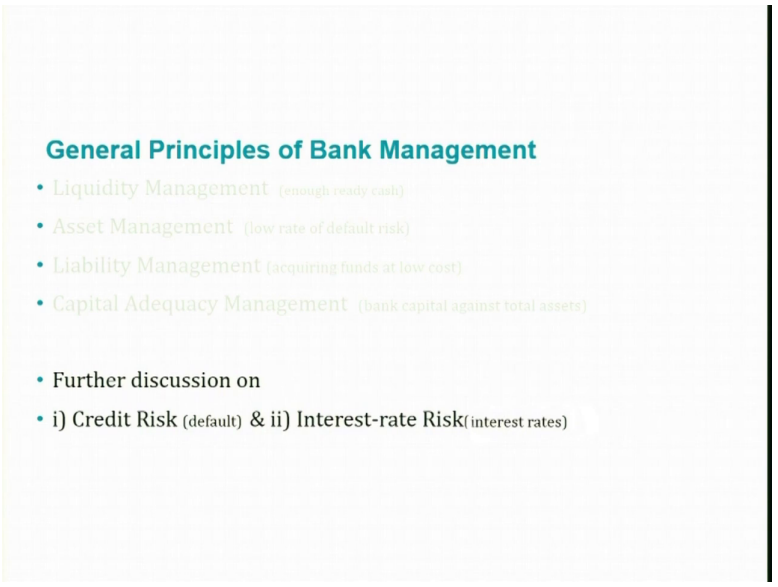

So, let us now discuss more about the credit risk and interest rate risk, these two concepts, let us discuss in-depth.

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So, coming to the first part, managing credit risk, it is important part of asset management of the bank.

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Importantly, we will be discussing the ways in which banks deal with credit risk.

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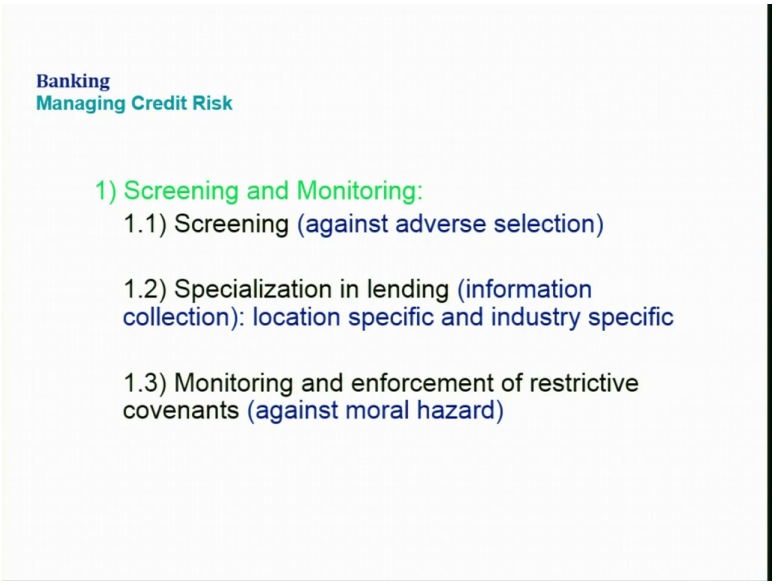

There are different options that banks used to deal managing the credit risk when bank is making a loan. At that time, the credit risk, that is, the default risk the bank is facing is a major issue. Banks use various tools to reduce the credit risk or to manage the credit risk.

So, one of the things is the screening and monitoring of potential borrowers. About the screening part, they screen the customers, the borrowers against the possible adverse

selection. That means, when the potential borrowers, in the best interest of the banks, the potential borrowers should be low risk borrowers, they should be having low default risk, ideally zero default risk, is most preferred by banks.

So, banks will be in screening customers potential borrowers so that they do not have adverse selection issues. So, adverse selection issues mean, mainly the bank borrowers those who are high risk borrowers, they have high tendency to borrow from the bank and then make a default. Then, you know that, as a result, the bank will be unable to recover its loan and then finally, it would eventually lead to bank failure.

And then comes the second part is specialization in lending; that means, through information collection. So, you may wonder, because one puzzling feature of a bank lending is that a bank often specializes in lending to local firms or to firms in particular industries such as energy. So, one of the things that we discussed in the previous session is that bank in fact, bank should diversify, but at the same time, now we are discussing that in order to manage credit risk, we also talk that sometime banks specialize as well.

This is little bit contrasting statement; that means, in one instance, we are saying that bank should diversify its portfolio, and now in another instance we are saying that they are going to specialize in lending. So, in one sense, this behavior seems surprising because it means that the bank is not diversifying its portfolio of loans and thus is exposing itself to more risk.

But from another perspective, such specialization makes perfect sense; you know how. Because the adverse selection problem, it requires that the banks screen out bad credit risk. It is easier for the bank to collect information about local firms and determine their credit worthiness than to collect comparable information on firms that are farther away. So, similarly by concentrating its lending on firms in specific industries the bank becomes more knowledgeable about these industries, and is therefore, better able to predict which firms will be able to make timely payment on their date.

The high-risk borrower has an incentive to engage in risky activities that make it less likely that the loans will be paid off. To reduce this kind of moral hazard behavior, financial institutions impose provisions including restrictive governance, and monitoring. The restrictive governance into loan contract restricts borrowers from engaging in risky activities. By monitoring borrower’s activities to see whether they are complying with the restrictive

governance. By enforcing governance, the lenders can make sure that borrowers are not engaging in risky project activities at their expense, means at bank's expense.

So, the need for banks and other financial institutions to engage in screening and monitoring explains why they spend so much money on auditing and information collecting activities.

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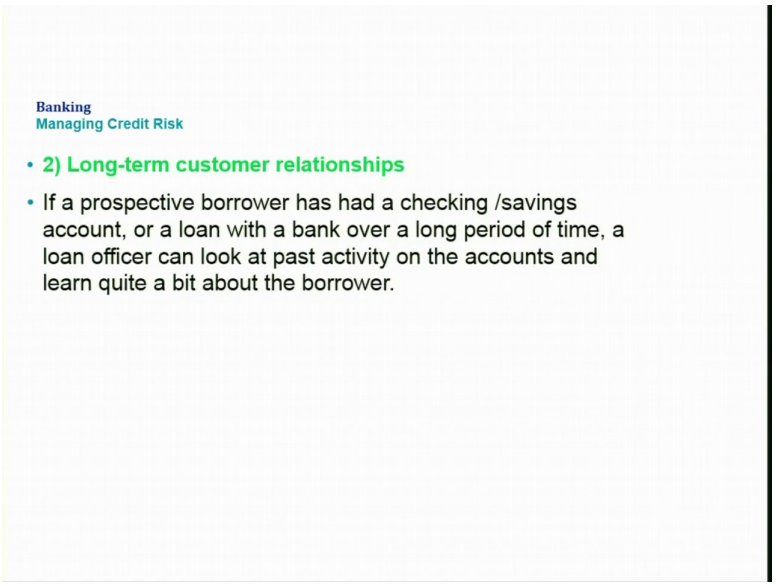

Another component is long-term customer relationship: building long-term customer relationship. If a prospective borrower has had a checking or savings account or a loan with a bank over a long period, a loan officer can look at past activity on the accounts and learn quite a bit about the borrows.

The balances in the checking and savings accounts tell the banker how liquid the potential borrower is, and at what time of year the borrower has a strong need for cash. A review of the checks of the borrower has written reveals borrowers supplies as well. If the borrower has borrowed previously from the bank, the bank has a record of the loan payments as well. Thus, long-term customer relationships reduce the cost of information collection and make it easier to screen out bad credit risk.

So, the need for monitoring by lenders adds to the importance of long-term customer relationship. If the borrowers have borrowed from the bank before, the bank has already established procedures for monitoring the customers. Therefore, the cost of monitoring long-term customers is lower than the cost of monitoring new customers.

And in the next session, we will discuss some more aspects of managing credit risk that include compensating balance, credit rationing etcetera.

Thank you.

Key words: liability management, capital adequacy management, credit risk, monitoring, screening, long-terms customer relationship