Management of Commercial Banking
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Lecture - 06
Bank Performance Measures - 1

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So, after the discussion on the financial statements of the commercial banks, today we will be discussing about the Bank Performance Measures. There are many ways the performance of the bank can be measured. Some of the measures are accounting measures; some of the measures are the market measures. And some of the measures are also very subjective in nature.

But today we will be starting the discussion on the accounting measures, then in the forthcoming sessions we will be adding or we will be discussion more about the other market measures and the other subjective measures what the commercials banks have or commercial banks always use to analyse their performance in a larger sense.

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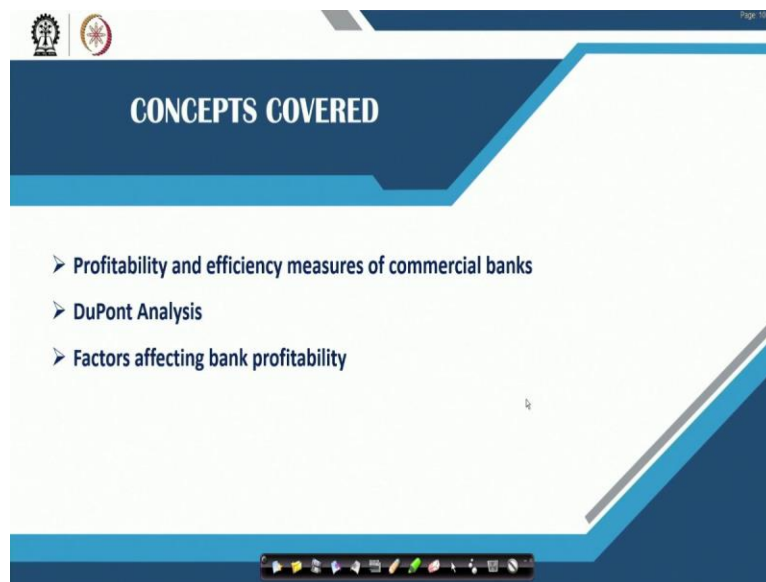

So, if you see that in today's discussion, the major focus of this particular session is based upon these three issues. One is how the profitability and efficiency measures of commercial banks are analysed or measured. But one thing remember, here when I am referring to the accounting measures only, that already I told you and through that we will be discussing how the different ratios or how different measures are used to calculate this aggregate performance measure of the commercial bank or how this particular performance measure can be decomposed into the different other ratios which is generally considered as the DuPont analysis that we will discuss.

And then will discuss about the major factors which are affecting the banks accounting profitability measures. Mostly again and again I am telling, we are referring to the accounting measures. So, these are the major issues what will be discussing in today's session.

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Measuring Performance of Commercial Banks

- Performance refers to how adequately the bank meets the needs of its stockholders (owners), employees, depositors and other creditors and borrowing customers
- Bank performance measures are evaluated with help of the Income Statement and Balance Sheet

So, let us see that how basically those accounting measures are analysed or may be discussed in the commercial bank perspective that whenever we talk about the performance of the commercial bank, performance is nothing but it refers to how adequately the bank meets the needs of its stockholders, employees, depositors and other creditors and the borrowing customers.

Basically these are the different major stakeholders of this particular bank, so if really the bank is able to meet these requirements of all the stakeholders, then we can say that the bank is performing well. That is one perspective whenever we talk about the profit point of view. But one thing you remember, the requirement of all the stakeholders are different, the requirements of all the stakeholders are different because for example whenever we talk about the stockholders or the equity holders, they mostly rely upon these certain measures which affect the performance of the stocks only.

They may not be relying upon the interested charge on the loans or the interest paid on the deposits, so this may not be a concern for them although indirectly they are linked. But the objective of those kind of stakeholders are different than the other stakeholder of the bank. So, that is why the bank has to keep the balanced approach whenever they want to satisfy the needs or the requirements of all the stakeholders which are linked to the particular commercial bank. This is number 1.

And whenever we talk about the performance, particularly the accounting performance, the accounting performance are basically always evaluated for not only for the banks for any

organization or any kind of non-financial companies also. We always evaluate the performance with the help of the income statement and the balance sheet. So these are the two different kind of or we can say that financial statements always use to measure the performance that is why every discussion we have made on the different items which consider the balance sheet as well as the income statement or the profit-loss account. So, this is what the performance is defined.

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Then how the performance is measured? Already I told you that the performance can be assessed in different ways. For example, there are certain ways the performance can be measured, the performance can be profitability measures, performance can be also assessed through the stability measures, performance also can be measured through the liquidity measures, the performance also can be measured through risk, performance also can be measured through the market valuation.

So there are many ways the performance can be assessed, but again you remember in today's discussion we are only focussing on the profitability and the efficiency measures to some efficiency measures and the profitability measures, not all efficiency measures. These are the two things will be the focus for today's discussion.

So, the first one which comes to the mind whenever we talk about profitability that is return on assets not only for the banks, for any organization return on asset is the one of the important measures for the measuring the profitability. So, what do you mean by the return on asset? It is the net income upon total assets.

Already in the previous class we discussed about what is, how we can calculate net income and total assets we know which comprised of many, you have investments, you have loans, you have other kind of assets whatever we have. Then net income upon total assets that will give you the return on assets. General return on asset is an indicator of managerial efficiency.

What does it mean? What do mean by the managerial efficiency? The managerial efficiency is nothing but how capable your management is to convert the asset into the earnings. The assets have been given. What are those assets? You have loan, you have investments, you have fixed assets also, there are many assets which are given to you. How basically you are utilizing those assets, whether you are utilizing those assets in the effective way or not, that can be reflected through your net income.

So, if really you are able to effectively utilize those ratios then your net income will be more. So, if the assets are there with you, if it is not properly utilized by you, then your net income will not be maximized. So, in that case the performance goes down. So, therefore, it measures the managerial efficiency that means the manager is efficient enough to utilize those assets to generate the income for that particular bank for a particular period of time. So, that is why the return on asset is one of the very important measure which measures the managerial efficiency and which is considered as the most prominent measure of the profitability in terms of accounting measures.

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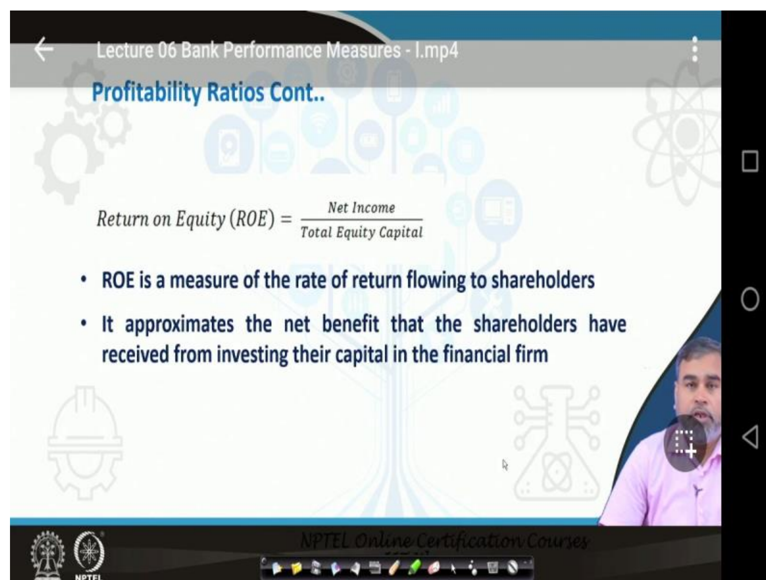

Second one is return on equity, which is mostly focussed by the equity holders. The equity holders rely more on the return on equity. The reason is if the return on equity is more, that

means the benefits of the shareholders also will be more. Whatever money they have invested that means the equity which is invested in that particular bank that gives them the more revenue or more kinds of benefits, if the return on equity will be more. Then how the return on equity is measured? It is basically again the net income divided by the total equity capital.

So, it is a measure of rate of return flowing to the shareholders supposed to the shareholder get the benefit from these particular measure and it basically assumes or it basically measures the net benefit that the shareholders have received from investing their capital in the financial form like banks.

So, here, if the return on equity will be more that means the performance of the equity in the market of that particular company is more. Because equities are properly invested, the net income has increased. If the net income has increased, then obviously your return on equity will also increase. So, that is what the basic theme of the understanding of the return on equity.

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Profitability Ratios Cont..

$$Net\ Interest\ Margin = \frac{(Interest\ Income - Interest\ Expense)}{Total\ Assets}$$

$$Net\ Non\ Interest\ Margin = \frac{(Non\ interest\ Revenue - Non\ interest\ Expense)}{Total\ Assets}$$

$$Net\ Operating\ Margin = \frac{(Total\ operating\ Revenue - Total\ Operating\ Expenses}{Total\ Assets}$$

$$= \frac{Operating\ Income}{Total\ Assets}$$

- These are efficiency as well as profitability measures
- They indicate how well the management and staff have been able to keep the growth revenue ahead of rising costs

Then we have some other measures, we have the net interest margin, already we know that what is net interest income, net interest income is your interest income minus interest expenses. If you divide it with respect to the total assets then we can get the net interest margin.

We have net non-interest margin, the non-interest margin means what? It is the non-interest income minus non-interest expense divided by the total assets that will give you the net non-interest margin. Then we have the operating margin which is nothing but the total operating revenue minus total operating expenses divided by the total asset.

Total operating revenue minus total operating expense is nothing but the operating income, which is operating income of the total assets. And remember these measures are basically the efficiency measures. And well as we also consider them as the profitability measure but mostly this measures are basically the efficiency measures.

That means how the management or the employees of this particular bank are able to keep their growth or keep their revenue growth ahead of the rising cost. So obviously, if the expenses will be lesser than income then there is a positive net income. If there is an interest positive net income from the interest is positive, then net interest margin will be positive.

So, like that the numerator in all the cases will be positive, then we can say that effectively whatever cost the bank is incurring to manage their particular assets and liabilities these are lesser than the revenues what they are generating out of the utilization of those particular assets.

So because of that we can say that the positive ratios of all these indicators tells you that this particular banks are more efficient and their profitability is better. This indicate how well the management and staff have been able to keep the growth revenue ahead of arising cost. Then what are the other things we can get from this?

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Profitability Ratios Cont..

- The *net interest margin* measures how large a spread between interest revenue and interest cost management has been able to achieve close control over earning assets and pursuit of the cheapest source of funding
- The *net non-interest margin* measures the amount of non-interest revenue stemming from service fees the bank has been able to collect relative to the amount of non-interest cost incurred

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The net interest margin also measures how large a spread between the interest revenue and interest cost management has been able to achieve close control over earnings assets and pursuit of the cheapest source of the funding. That means the management is able to identify what is the cheapest source of the funding, that means they are also able to control their earning

asset in such a way that they can maximize their revenue or the interest income and as well as from where they are raising the money there also they are able to identify the appropriate sources of funding, by that they are able to reduce the cost.

So, in the end the net interest margin becomes positive. Net non-interest margin what basically it measures? It measures the amount of non-interest revenue which is coming out of the fees, commissions and etcetera relative to the huge amount of the non-interest cost. There are the payment to the equity holders, then you have the salaries, you have the wages, you have overhead costs, there are many cost. There is a huge amount of non-interest cost. Generally, the non-interest cost will be more than the non-interest revenue, generally. That is why most of the banks you find that figure is negative.

But in today's context, due to the globalization and growth opportunities which is existing in the market and the development of the different financial services, developmental of the technology, now the fees and commissions or the balance sheet activities that has increased drastically. These particular operations have increased by many folds so because of that nowadays also the non-interest income is increasing by the commercial banks. Because of complexity in the financial system.

Now, there are many exotic products which are available, there are many mergers, takeovers are taking place, there are many financial instruments, complex financial instruments are available and the banks are competent enough to provide the services to the different clients for managing these kind of assets.

So, whenever they provide the services to manage these kind of assets in terms of risk management services, in terms of other consulting services, against that the income is also increasing, the fees and commissions are increasing, but still because this amount of non-interest expenses are large maybe this particular difference is negative, but still the gap is declining over the period of time. That basically always we can observe whenever we discuss about the balance sheet.

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Profitability Ratios Cont..

$$Earnings\ Spread = \frac{Total\ Interest\ Income}{Total\ Earning\ Assets} - \frac{Total\ Interest\ Expense}{Total\ interest\ Bearing\ Liabilities}$$

- Traditional measure of earnings efficiency
- It measures the effectiveness of a firm's intermediation function in borrowing and lending money
- It also shows the intensity of competition in the market
- Greater competition tends to squeeze the difference between average asset yields and average liability costs

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Then another measure we have that is earning spread. What is earning spread? It is the total interest income upon the total earning asset minus the interest expenses divide by the total interest bearing liabilities. This is a very traditional method of measuring the efficiency and what basically it measures. It measures the effectiveness of firm's intermediation function in terms of the borrowing and lending the money. How effectively the banks are able to utilize their lending operations and borrowing operations that basically is judged from this particular measure that is called the earning spread.

It also shows the intensity of the competition of the market because if there are many competitors, there are many players in the market maybe the interest income is relatively lesser and greater (comp) that is why the greater competition tends to squeeze the difference between the average asset yield and average liability cost. So, that is what basically always we observe, so that is why the competition leads to lesser performance in terms of the profit from the organization point of view.

Although it is good for the customers because if there is a competition, then the cost is declining from the customer point of view, but from the banking point of view if you see the competition leads to less performance or less profitability. But still competition is a desired concept, the reason is competition makes the system more robust and as well as more stable and from the customer or the client's point of view it is also very effective to reduce their cost.

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So, the DuPont analysis is quite popular because it decomposed this ROE into the different kind of ratios. Like we know that ROE is equal to net income upon total equity.

So, if you take here the total assets by equity then it becomes ROE and into total assets by total equity. And total assets by total equity is nothing but it is called the equity multiplier. But if you again want to expand this, you can also expand in this way,

$$\frac{\text{Net Income}}{\textit{Total Operating Revenue}} \times \frac{\textit{Total Operating Revenue}}{\textit{Total Assets}} \times \frac{\textit{Total Assets}}{\textit{Total Equity Capital}}$$

So this ratio is the net profit margin, this one is asset utilization ratio and this is basically the equity multiplier.

So, now what has happened further also although these two are quite popular, further also you can see it in the different way, you can take net income upon pretax net operating income, then pretax net operating income upon total operating revenue, then total operating revenue upon total assets into total assets upon the total equity.

So, again we have a tax management efficiency, expenses control efficiency, this one, then you have the asset management efficiency, then you have the fund management efficiency which are basically the equity multiplier. So, how the managers are efficiently utilizing those kind of domains, those kind of items into the balance sheet that basically gives you the idea that how this ROE of this particular bank can be maximized. So this is the way the different components or different ways the ROE can be decomposed. But one thing is that all those ratios which are affecting this ROE, they are also determined by certain factors.

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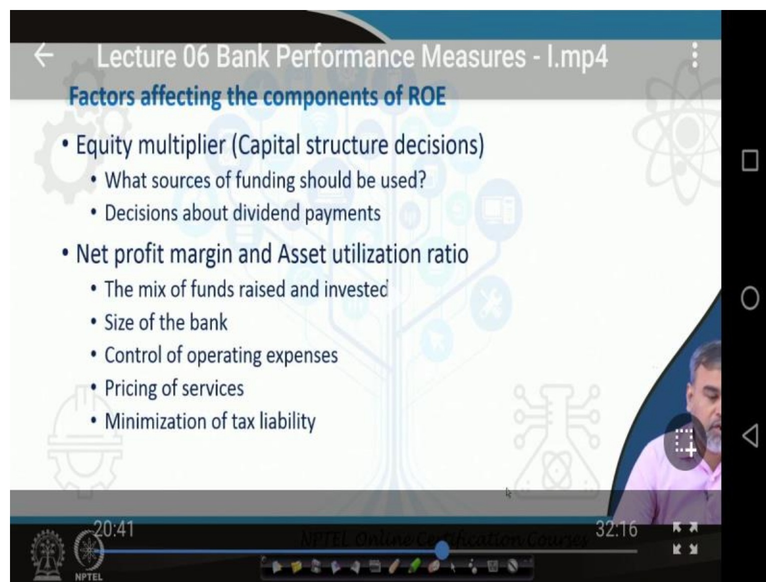

Then what are those factors? Majorly we have seen equity, multiplier which is nothing but the capital structure of the bank, we have the net profit margin and the asset utilization ratio and as well as the tax. These are the 3 things or 4 things whatever we have observed which are the responsible ratios to determine the ROE.

Then, what do you mean by the capital structure decision? That means how the management basically has effectively managed their composition of sources of funds. What sources of the funding should be used? We have debt and equity, you have return earnings, so on the basis of the timing, on the basis of the market conditions, on the basis of the cost which are involved with respect to the different funding, how really the managers are good enough to utilize their ability to choose an effective fund which can minimize the cost.

The basic objective is to reduce the cost of capital. So, how the cost of capital can be minimized that depends upon the composition of debt and equity. If the composition of debt and equity is changed, then the cost of capital also changed. So, what source of funding is really effective to minimize this cost that is basically important.

And the decision about the dividend payments, whether dividends should be paid or should not be paid that is also again a managerial decision. And as well as if at all it is paid, then in what form it will be paid, whether the cash dividend will be paid or the stock dividend will be paid? So, dividend decision also will have the impact on the cost of this particular bank which effectively affecting this ROE.

Then we have net profit margin and asset utilization ratio. Then here also the managers have strong role. How effectively they decide about the mix of the funds raised and how they are invested, where the money comes and how the money is utilized, that is also very important from the managerial point of view.

Size of the bank because we already know that size has a strong role in terms of the use of the assets, we can say that availability of the resources in the market and all that varies across the size. Because of that size of the bank plays a significant control on the net profit margin and asset utilization.

How the managers are able to control the operating expenses whether it is really good enough for them to control their operating expenses in an effective manner that is a common factor for them. Pricing of the services-whatever services they provide and whatever services they get, whether whatever pricing they deciding or whatever prices they are paying, whether really that price is the optimal price or not, whether it is cost effective or not, that is also another factor and how effectively they have invested the fund or they have raised the funds from the market by that the tax liability can be minimized.

How to choose those instruments? What are those instrument which should be there in the balance sheet or should we chosen for the instrument by that the tax can be minimized? So, these are the different factors for the managers always consider or manager's effectiveness can be measured through these factors whenever we decide the return on equity or we calculate the return on equity because return on equity depends upon equity multiplier, asset utilization, profit margin. But profit margin, asset utilization and equity multiplier these are determined by these factors. So, end of the day, so if you are looking after these factors then obviously your return on equity can be maximized.

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Factors affecting profitability

- Bank size
- Capital ratio
- Risk
- Funding cost
- Revenue diversification
- Bank age
- Corporate governance
- Industry structure
- Business cycle

Then overall if you see, there are certain factors, if somebody wants to really see that what real factors which are affecting the accounting profitability of the banks, or the overall profitability of the banks, there are many factors we can discuss, we can analyse, one is size of the banks.

You know we have a hypothesis called 'too big to fail' hypothesis. Large banks never fail so easily, but if the large banks fail, there is a greatest damage to the financial system. But another thing is size of the bank is also related to information asymmetry. Because sometimes people argue that there is more information asymmetry with respect to small banks than the large banks it can be vice versa. So, that is why there is a relationship between the size and the cost what the banks incur in terms of the investments and as well as providing the loans. So, that is why size has a direct or indirect impact on the profitability.

Capital ratio measures the stability of the bank, basically equity multiplier. If it is stable, equity multiplier or capital, capital upon total assets; capital means we are referring both debt and equity that basically shows that how the banks are stable. More the stability, better will be the performance, but it can be also argued if more equity capital will be there sometime the cost will be more because of that sometimes it will have some lesser, it will have an adverse impact on the profitability. But the stability as a positive impact on the profitability that is what we can assume.

Risk means it can be credit risk, it can be market risk, and it can be liquidity risk, etcetera. So, if risk is more, then may be the profitability gets hampered, the profitability may be less. Funding cost, what do you mean by the funding cost? The funding cost means whenever the company or the bank has raised the revenue, from where they have raised the revenue?

Obviously from the call money market, from the reserve bank of India, or any other central bank or there are other funding agencies.

Then how these interests are paid? How much interest they have paid? Whether the, whatever payment they have made, whether really it is compensating the revenue or really the revenue what they are generating it is more than that particular cost or not. So, the funding cost is higher, then obviously it will have an adverse impact on profitability so we can expect one inverse relationship between them.

Revenue diversification, here I have given the name revenue diversification which is nothing but the revenue generated, what is the percentage of the revenue through the non-interest income activities. Whether the bank is able to generate more revenue through the activities which is not related to the assets which are interest bearing assets.

If the revenue is really diversified then any fluctuations or any changes in the market will have lesser impact on the total performance of the revenue side of the balance sheet. But if the bank is concentrating on one type of assets for generating revenue, then there is a possibility of the failure. So, the revenue diversification is also quite important whether really this revenue generation of the banks are diversified or not.

Then age of the bank, more the experience sometimes the banks can utilize their experience, use their reputation to get the funds in cheaper way but reverse is that across by age sometimes the banks follows a very conservative approach. They may not be compatible to the technology because of that sometimes the profit may be hampered by that. Corporate governance means the structure of the board, the audit characteristics that means everything should be transparent by that people and the clients have the more confidence of the bank, by that the profitability can be enhanced.

The industry structure means whether the banking industry follows a monopolistic structure or monopoly structure or competitive structure, so if it is a competitive structure, profitably relatively averaged out, if it is a monopoly structure then obviously there is a chance of high profit and if the monopolistic then profit will be in-between monopoly and the perfectly competitive structure that is why in that economy what kind of banking structure is operating that is important.

Business cycle means the economy condition, if the conditions will be better then obviously the banks will be able to utilize this opportunities which are available in the economy and because of that and the lending activities will be more, then as well as the investment activities also will be more and which can enhance their profit through the revenue maximization.

That is why the good economic condition has a positive impact. It can be measured through real growth rate of GDP or it can be measured through different other measures like term spread, default spread and all kinds of indicators. So these are the tentative factors which are affecting the accounting profitability of the commercial banks.

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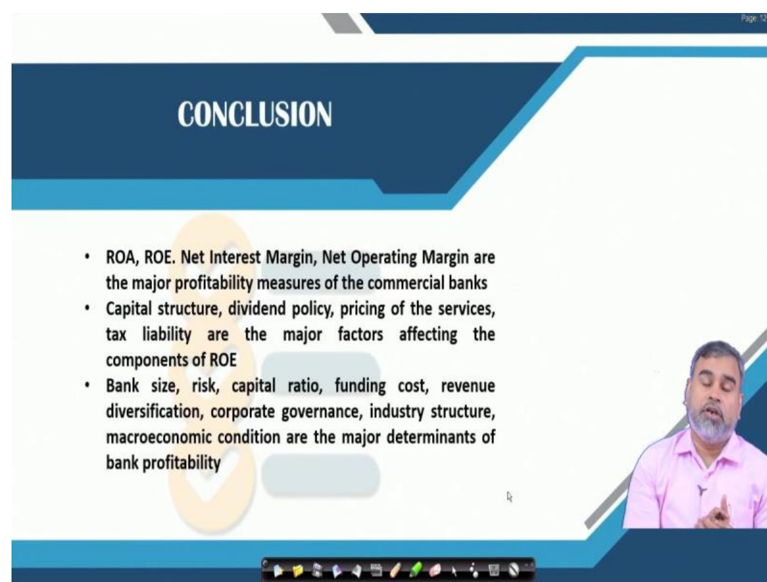

So, in the conclusion or if you summarize this discussion whatever we have made today that return on asset, return on the equity, net interest margin, net operating margin are the measure profitability measures of the commercial banks. Capital structure, dividend policy, pricing of the services, tax liability these are the major factors affecting the components of ROE.

Bank size, risk, capital ratio, funding cost, revenue diversification, corporate governance, industry structure, macroeconomic condition these are the measure determinants which affect or which determine the profitability of the commercial banks and over all this things whatever we have discussed these are specific to the accounting measures of the profitability of the commercial bank and further we will be discussing about the market measures and the other measures which are used for measuring the performance.

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REFERENCES

- Bank management & financial services by Rose, P. S., & Hudgins, S. C., McGraw-Hill Education, 2008.
- Commercial banking: The management of risk by Gup, Benton E., and Kolari, James W., John Wiley & Sons Incorporated, 2005.
- Management of Banking, 6e. by MacDonald, Scott. S., & Koch, Timonthy. W, Thomson, 2007

These are the references what you can go through. Thank you.