Management of Commercial Banking
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Lecture 44
Managing Investment Portfolios - IV

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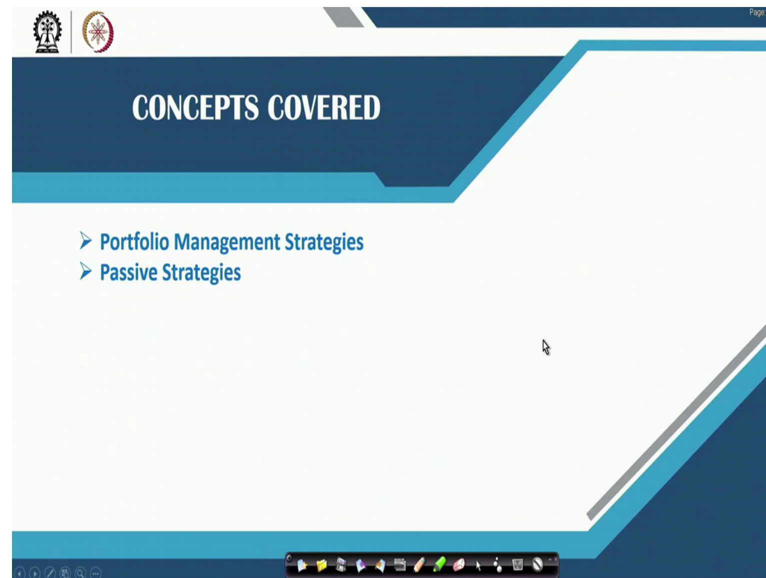

So, after discussing about the different components of the portfolio for the investments and what are those factors which should be considered while constructing the portfolio and we can start the discussion on the what kind of portfolio management strategies is used and how that particular strategy is really implemented by the commercial banks in the market to maximize their return.

So in today's session we will be discussing, we can start the discussion on the portfolio management strategies, what are those different broad strategies the commercial banks adopt while formulating the portfolio and as well as we have to see specifically one type of strategy that is called the passive strategies. What are the different types of passive strategies the commercial banks use whenever they basically construct the portfolio for their investments?

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Investment Strategies

- Investment strategies play an integral role in meeting overall asset and liability management goals regarding interest rate risk, liquidity risk, credit risk, the bank's tax position, expected net income, and capital adequacy
- What maturity of securities should the investing institution hold?
- Should it purchase mostly short term bills and notes, or only long term bonds, or combination of both?

So, whenever we talk about the investment strategy what this investment strategy is all about? The investment strategies basically play an integral role or very important role in meeting the overall asset and liability management goals regarding the interest rate risk, liquidity risk, credit risk, bank's tax position, expected net income and the capital adequacy.

These are basically the broad variables which are used to define or to may be explain the bank's stability, the bank's profitability and as well as the risk management of the commercial banks. So, the portfolio strategy should be formulated in such a way by that the overall risk management of the commercial banks and overall risk of the commercial banks can be managed, the profit can be enhanced and the bank will become more stable. So, these are the three things are kept in the mind while formulating the investment strategy of the commercial bank. This is basically the issue what we want to discuss.

Second one is what, already we know that what basically we do, whenever you go for strategy what kind of strategy we can adopt? One is portfolio there are two questions, what assets and how to allocate the funds? The same two questions has to be answered whenever we are constructing the portfolio.

So, in the investments process whenever we construct the portfolio then whenever we are talking about the banking perspective, if bank is the investor then mostly banks instruments for the investors are restricted towards the equity market. So, banks are mostly concentrated on the fixed income securities and within the fixed income securities there are some securities which are highly liquid. They are the part of the SLR investments, and some of the securities

they are not part of the SLR investments. They are relatively long term securities or the capital market instruments.

In that particular point of time, obviously there are some questions always we should answer whenever we talk about or discuss about the investment strategy, particularly with reference to the commercial banks. Then what maturity of securities should the investing institutions hold or the bank should hold?

Whether they should go for the long term maturity securities or securities having the short term maturity? This is the first question they have to answer. Second question, should it purchase mostly the short term bills or the notes or only the long term bonds or the combination of the both?

So, whether we should confine ourselves to the short term securities or whether we should confine ourselves to the long term securities or we can go for a combination of both, short term and long term securities? This is basically another question or another issue always commercial banks always face, and commercial banks try to manage that particular thing with a proper investment policy or proper investment strategy broadly if you want to categorize the strategy.

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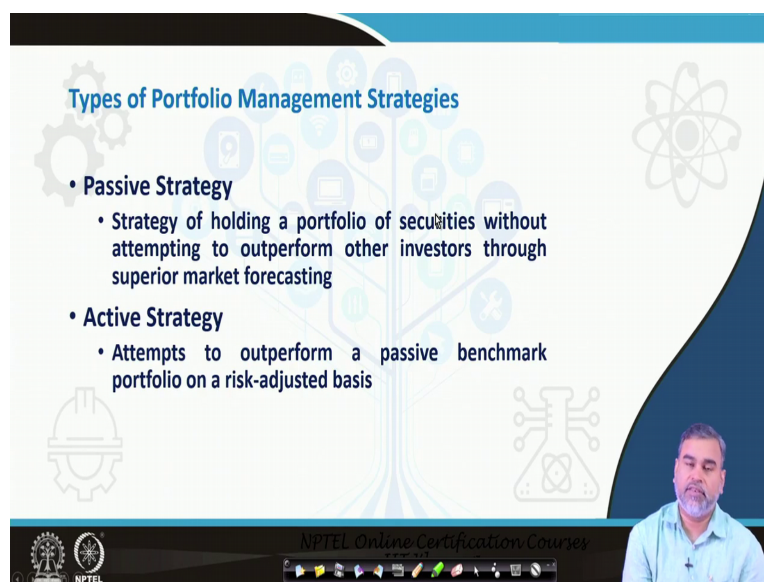

The strategy can be two types. The strategy can be passive strategy or the strategy can be active strategy. So, if you want to categorize this active and passive strategy what is the formal definitions of this? Whenever we go by a passive strategy it is basically you have to

hold a portfolio of the securities without attempting to outperform over the other investors through superior market forecasting.

What does it mean? Because we have a benchmark, whenever we invested we have a target, we have a benchmark. Either, how we can decide the target? The target can be decided on the basis of the benchmark. Let somebody is investing in the bond market or the bank is investing in the bond market. So, there are different type of bond indices which are available. So, whenever we talk about the bond indices the particular bank will look at that how this bond, how much return the bond index is giving.

So, my objective is to get how much return the bond index is giving? If I am getting that much return then my portfolio is fine, the performance of my portfolio is fine. So, that is why I am not going to, or the particular bank is not interested to always bid that particular bond market return what they are expecting from that particular bond index. They are getting, they are trying to get the return what the bond index is giving.

So, that is why they are not very aggressive in nature or they are not basically going for any kind of techniques which is going to get them more return in the market or they are relatively less risky in nature. So, the particular passive strategy is relatively less risky and whenever you go for the active strategy they are relatively high risk strategies.

So, in that case for every aspects their attempt is to outperform the passive benchmark portfolio on the risk-adjusted basis. So, we have to make the strategy in such a way by that I can always extract more return what the benchmark is giving. But in the passive strategy that is not the objective.

In the active strategy case we are getting, always trying to get more return above than the benchmark but in case of passive strategy we are trying to get that return what the benchmark is giving. So, that is the basic difference between the passive strategy and active strategy, and in today's session we will be mostly focusing on the different types of passive strategies which are used by the investors or the commercial banks for their investment portfolio and further we will be discussing about the different type of active strategies.

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Buy and Hold Strategy

- Investors don't trade actively to maximize the return
- Hold the bond with a maturity or duration close to their investment horizon
- Price risk elimination is the prime objective
- Return on security is controlled by coupon payments and reinvestment rate

The first and foremost active strategy, passive strategy what the any investor including commercial banks use is Buy and Hold strategy. So, what do we mean by the Buy and Hold strategy? Here the investors don't trade actively to maximize the return. Investors don't trade actively to maximize the return.

Hold the bond with a maturity, or a duration close to their investment horizon. There is a maturity period. There is investment horizon period. When you need money? When you are expecting that the money is required by you? So, if you know your holding period or investment horizon period then you hold there are many types of bonds which are available with the different maturities.

Then you go on holding that bond whose maturity or the duration will be close to your horizon period. And in that process what you are trying to do? If you are holding in that type of bond then any kind of fluctuations in the interest rate is not going to affect your total investment value. So, the basic job or the basic objective of the Buy and Hold strategy is elimination of the price risk. If you are holding the bond up to the maturity and why you are holding the bond up to the maturity? Because that is your investment horizon period.

Then in-between you do not have to play with that particular bond, you do not have to take any other positions with respect to that particular bond. Then what happens, that you are not exposed to any kind of price risk due to the fluctuations in the interest rates in the market, and the return on this particular security is totally controlled by the coupon payments and the reinvestment.

So, the coupons and reinvestment, these are basically the two components which gives them the return of that particular security if somebody is buying and holding that security up to the maturity and the basic job or basic objective of making this particular strategy is to eliminate the price risk from the investment due to change in the interest rate scenario. So, this is one strategy basically the most used strategy or we can say oldest strategy in terms of passive strategy where this always, the commercial banks or the investors use.

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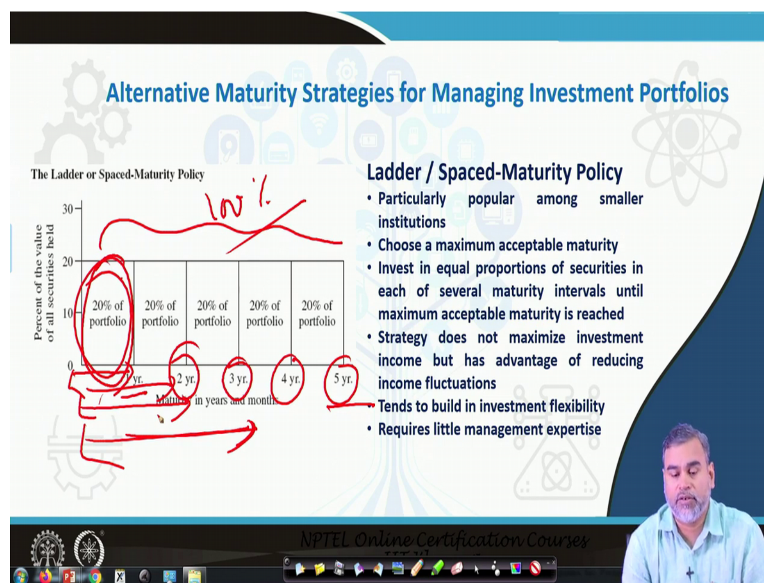

Other one is, there are many strategies which is based upon the different type of maturity strategies. One is basically Bond Laddering or the Spaced-Maturity policy. So, the Bond Laddering and Spaced-Maturity strategy is what? So, whenever you go for the Bond Laddering this is one of the popular strategy in terms of the fixed income securities particularly used in the bond market. That is also used by the commercial banks.

So, here what is the process here if you see, choose a maximum acceptable maturity. The commercial banks should choose a maximum acceptable maturity. Then after you decide that acceptable maturity, invest in equal proportions of securities in each similar maturity intervals. Make a ladder until the maximum acceptable maturity is reached.

So, if you see this particular diagram, this is basically talks about your 100 percent portfolio, then 20 percent of the portfolio you can invest up to the 1 year maturity, another 20 percent 2 years maturity, 3 years, 4 years and 5 years. So, then what happens in this process the objective was not maximize the investment income but had advantage of reducing the income fluctuations?

You see if you are holding a bond up to 1 year maturity, another bond up to 2 years maturity, and 3 years maturity so depending upon that what happens, if there is a change in the interest rate in the market then in the short run if the interest rate is going down you are gaining here and again further if it is increasing then you may lose here, and again if it is declining then again you are gaining here. Because of that overall you are trying to minimize the interest rate risk exposure in the market in terms of the pricing of that particular bond.

So, if you are holding up to 5 years then that may not help you but if the different kind of maturity, if you are holding that components of the different types of bonds then you are basically trying to reduce the interest rate risk exposure in the market due to the fluctuations in the interest rate. So, that is basically in our term, we call it the Bond Laddering or the Spaced-Maturity strategy.

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Alternative Maturity Strategies for Managing Investment Portfolios

The Front-End Load Maturity Policy

Front-End Load Maturity Policy

- Purchase only short term securities and place all investments within a brief interval of time
- Approach stresses using investment portfolio primarily as a source of liquidity rather than a source of income
- Avoids large capital losses if market interest rate rises

Alternative Maturity Strategies for Managing Investment Portfolios

The Back-End Load Maturity Policy

Back-End Load Maturity Policy

- Purchase only long term securities and place all investments within range of 5 to 10 years maturity range
- Rely heavily on borrowing in money market to help meet liquidity requirements
- Approach maximizes income potential from security investment if market interest rate falls

In this context we have another strategy related to this, that is called the Front-End Load Maturity and another one is the Back-End Load Maturity. Whenever you go for the Front-End Load Maturity policy here what basically we do, we purchase only the short term securities and place all investments within a brief interval of the time. And this approach basically gives the importance using investment portfolio primarily as a source of liquidity rather than a source of income, and it avoids larger capital losses if market interest rate rises.

So, that is basically called the Front-End Load Maturity policy can be adopted and in the Back-End Load Maturity policy is just reverse of that. Purchase only long term securities and place all investments within the range of 5 to 10 years maturity range. Rely heavily on the borrowings in money market to help the liquidity requirements and the basic objective or basic approach is to maximize the income potential from the security investments if market interest rate falls.

So, already we know that the long term securities are riskier than the short term securities. In that particular context what basically here we are trying to do if we are going for this kind of maturity policy then we can extract more return if our expected interest rate in the future is going to be declining. So, that is basically called the Back-End Load Maturity policy can be adopted or can be used by the commercial banks for minimizing the risk or maximizing the return.

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Then another strategy which is popular strategy called the Barbell strategy. The Barbell strategy is basically the combination of the front end and back end load approach. So, in this context what basically happens, you invest most of its funds, your funds in certain portfolio of highly liquid assets and liquid securities at one extreme and long term portfolio of the bonds in the other extreme, and keep minimum investment holding in the intermediate maturities.

So, in that process what happens it is a very safe portfolio strategy what you can adopt. By that if you are holding some percentage of the short term portfolio then your liquidity objective is fulfilled. If you are holding a long term portfolio then your income generation objective is fulfilled. Then if you have a mid term, medium term or the intermediate maturities portfolio you are holding then that satisfies both the conditions.

So, here if you see in this diagram we are holding some short term maturities, 30, 20 percent around we are holding in the short term securities, here we are holding some 20 percent to, 20 percent very high long term securities, then another 30-30 percent if you see that more or less they are intermediate in nature. So, in that process what basically happens that due to the fluctuations of the interest rate we are less exposed to this particular fluctuations of the pricing.

So, if there is a change in the pricing of the bond, if you are losing in a particular segment then obviously you may gain in another segment because that particular investment is not going to be matured now. That is going to be matured in a longer period. And when the

interest rate is going to be changed, that is also not known, because of that we have some intermediate securities.

So, if the interest rate has gone up in the short-term we have lost but in the, again within 2 years or 1 and half year the interest rate again, again going down, reverse trend then what happens that we are gaining, the price basically is increasing. If you have only short term and long term then for example interest rate has gone up then again it has gone down and again gone up then in that particular point of time we may not have immunized that interest rate risk in the market or we cannot extract the maximum possible benefits from this.

So, because of that all the 3 components of this particular, on the basis of the term to maturity if you will have then there is a possibility that we can have less exposure towards the interest rate risk in the market. So, that is basically called the Barbell strategy. Short term portfolio provides liquidity, long term portfolios provide the income, and the medium term securities are considered to have precautionary results.

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Indexing Strategy

- The objective is to construct a portfolio of bonds that will equal the performance of a specified index
- Performance is measured in terms of total return realized over the investment horizon
- Factors affecting the Selection of the Index
  - Investor's Risk tolerance
  - Objectives
  - Constraints imposed by the regulator

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Then we have another strategy we can adopt. That is called the indexing strategy. So, in the indexing strategy what basically here we are trying to do, the objective of the indexing or to construct the portfolio using the indexing strategy is to mimic or may be replicate a benchmark index.

If there is a index which is available and legally we cannot invest in that particular index directly but we can have that particular replication of the index by investing or by considering

the same assets which are used in that particular index and as well as the proportion of the money which has invested in that particular asset, the same methodology, same proportion we can use in our replication of the index.

For example, if you take BSE 30, that BSE sensex is the index. So, instead of we cannot invest in that BSE sensex. So, what we know that there are 30 companies, 1 to 30. We know that which are those stocks which are added. So, because we are not allowed to invest in that particular sensex we can consider all those 30 stocks which are part of the index, fine? First job is done. Which are those assets should we consider, that already we know. There is no need to analyze that which are the assets should be consider on what basis?

Second is allocation. Allocation is also done because proportion of the particular money which has invested in the different securities is already known. So, we have allocate the funds in the same way. Allocation is also done in the same way but there are some differences because of certain reasons.

But the question here is that our basic job is that particular differences we have to minimize. That we will see. So, here what is the objective? Our objective is we have to compare that how much return we are getting and how much return the index is giving. The performance is measured in terms of the total return realized over the investment horizon in comparison to the index return what basically we are observing from the market.

So, for that what index we should consider? That the commercial banks want to construct an index fund. Then what index they should consider? Then whenever they want to have a consideration of the index that which particular index should be considered there is a big dilemma. First of all whether is should be equity index or bond index? Okay if they want to have a bond portfolio they can go for bond index. If they have equity portfolio they can go for equity index. And within that there are many types of index, indices. Then which index they should consider?

Then whenever the banks or any investor chooses the index they have consider certain factors. What are those factors? First is tolerance limit, risk tolerance limit. How much risk this particular organization can take? So, if it is a larger organization the risk is relatively, risk-taking capacity is higher.

If it is small then risk-taking capacity is lower. Or the risk tolerance limit is lower. So, because of that they have to choose a particular index which is reasonably giving a kind of average return over the time and they are not exposed to much more risk in the system in the market. That is first of all the tolerance limit we have to see.

Objectives, whether your objective is to maximize the return or your objective is to get a regular flow of income so that will basically decide you that whether you should go for equity portfolio or bond portfolio or a combination of both? So, in that context the objective has to be clear. Then we are also not free to choose asset which are available in the system. Already we have seen that only there is a regulation in terms of capital market exposure, in terms of equity investments.

So, if there are certain kinds of regulations in terms of choosing the assets or in terms of exposure towards that particular segment then we are also constant. So, the constant imposed by the regulator is another factor we have to see. So, after considering all those things, whenever you have decided that which index should be your benchmark index, or which index you are going to replicate?

Next step is follow this process. And the objective is always to minimize the difference of the returns between these two. Then what basically you are going to do in this case? In this particular context what basically here we are trying to do?

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Indexing Methodologies

- To minimize the tracking error
- Causes of Tracking Error
  - Transaction costs in construction of the index
  - Differences in the composition of the indexed portfolio and the index itself
  - Discrepancies between prices used by the organization constructing the index and the transaction prices paid by the index manager

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Our basic objective is to minimize the tracking error. What is tracking error? The tracking error is basically nothing but the difference or the variation of the difference between the index what you are constructing and the index what basically you are replicating.

Let you are constructing index A and you are replicating the index B then whatever return you are getting from this, let your RA1 , RA2 like this and here your RB1, RB2 like this then our objective is to minimize this tracking error then how we can minimize that? We can minimize this, basically we are minimizing the variance or the standard deviation of the return differences.

Find out the SD of return differences that means RA1- RB1, so like that RA2 - RB2, take the differences, find out the SD. So, that is basically called the tracking error, the standard deviation of the return differences between your constructed portfolio and benchmark portfolio is called the tracking error.

Find out these return differences find out the SD of that over the time period. Then objective of the portfolio construction is to minimize this tracking error. And why there is an error? You are mimicking this portfolio, you are simply replicating that portfolio, but still there is error. Why that error basically happens. That error basically happens because of the transaction cost.

Whenever you are investing all those 20, 30 assets for that we have to bear and certain kind of, any transaction cost is a huge cost. The transaction cost is not there whenever we are getting the index value from the market. First of all the transaction cost and the differences in the composition of the index portfolio and the index itself because there is, some changes may happen in-between. And that changes you are not making because the portfolio rebalancing you are not making regular basis.

Let there are 30 stocks in the BSE sensex, tomorrow that 30 stocks may not be there or may be after 2 months the 30 stocks may not be there, another one stock has been added and another stock has been deleted. But that is not reflected in your account because you have already invested in that particular stocks which was there before. And another thing is, there may be a discrepancy between the prices used by organization which is constructing the index and the transaction prices paid by the index manager.

Anyway that is basically what happens that whenever the construction is made, there may be a price differences happens in terms of the allocation of the funds what we are making. And in-between there may be some another factor also which is responsible in this case.

There may be some other events which could have occurred with respect to that particular market, with respect to that particular stock which is not reflected, which is in aggregate reflected in the total benchmark index but whenever we are individually considering that thing that will have the different implications on my portfolio.

So, the major factors which are causing this particular error is basically your transaction cost, your we can say that composition of the portfolio in the different time periods because we are not making this rebalancing in the regular basis, and as well as these different kind of events which may occur within this particular investment horizon period which is not reflected in the index value but it is reflected in your portfolio.

So, that is why the basic job of the particular bank is to find out a particular index which can fulfill their objectives on the basis of the risk appetite and that itself is a job or may be the basic step of the job basically they have to define then after that they can have certain kind of replications. By that this kind of strategy can be formulated and the basic job of this particular strategy is to minimize the risk. So, this is about the indexing methodology.

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So, after the discussion what basically we have seen that the investment strategy can be classified as passive and the active strategy. And passive strategy means not to bid the

market, only to get the return what the benchmark return or benchmark index is giving and we have also, active strategy means always we have superior techniques to bid the market in the regular intervals.

By that we have to be aggressive in the market and the, whenever we are talking about the passive strategies, passive strategy includes Buy and Hold strategy to eliminate the price risk. There are different alternative maturity strategy to minimize the interest rate risk in the market like your Barbell strategy and all, and the indexing strategy is there also to get some kind of expected return what we have fixed in the beginning from that particular investments by looking at the benchmark portfolio.

So, these are the different investment strategies what, which comes under the passive strategy, and in the next class we will be focusing on the different kind of active strategies what the commercial banks also use to maximize the return or to bid the market in the regular intervals.

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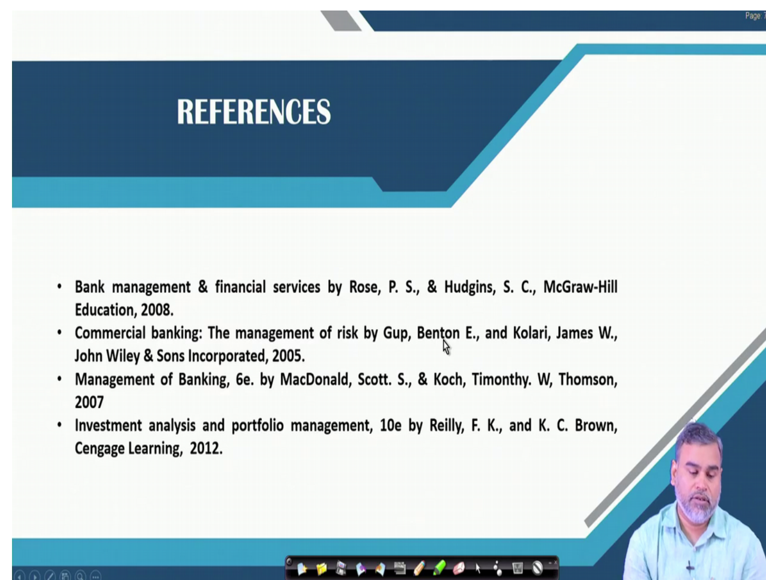

So, these are the references what you can go through to get this overall idea about these portfolio management strategies in terms of bond or equity or the different kind of assets what the commercial banks may use or any other organizations may use to construct their portfolio to minimize their risk or to maximize their return. Thank you.