MINERAL ECONOMICS AND BUSINESS

Prof. Bibhuti Bhusan Mandal

Department of Mining Engineering

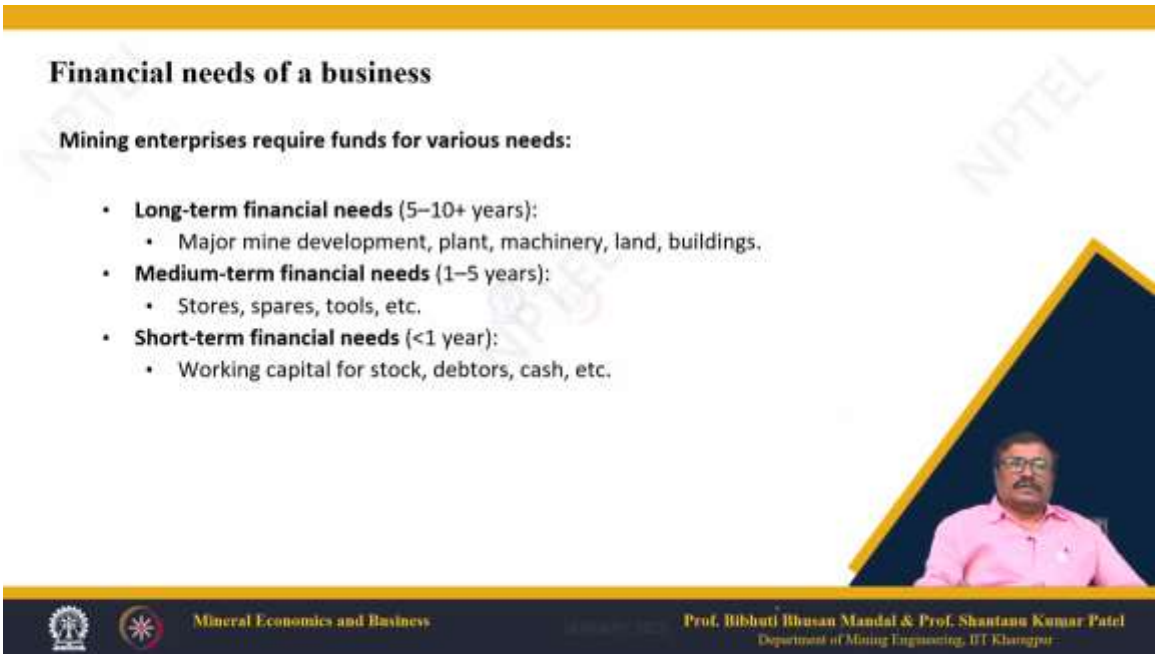
IIT Kharagpur

Week 6

Lecture 26 : Introduction to mining finance

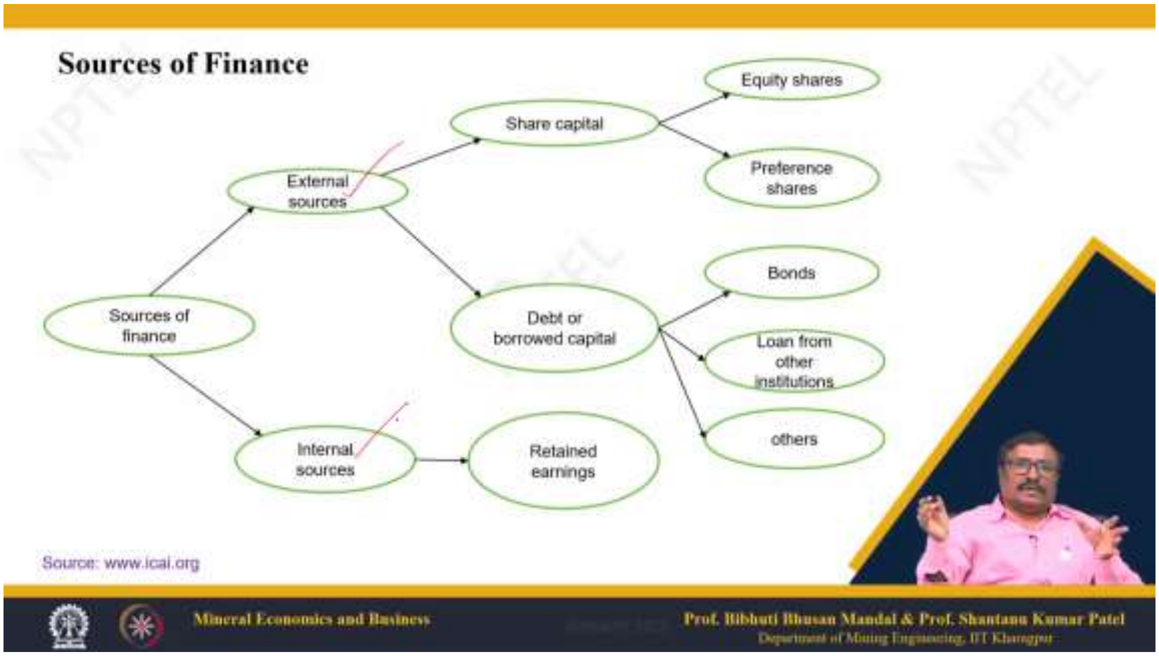
Hello, welcome everybody. Today, we will discuss mining finance—rather, the introduction to mining finance, several aspects of it—and introduce the concepts of debt, equity, and various other financial resources that businesses or mining businesses can use for running their operations. The financial needs of the business and sources of finance will be discussed, and we will cover introductory concepts such as equity, preference shares, retained earnings, debentures, and bonds. These topics will be discussed in this particular lecture. As you can easily understand, a mining enterprise, like any other business, will require funds for various needs.

Unless the mine is a small quarry or a very small mine of minor minerals, you may not require huge capital, but for bigger open-cast mines or large underground mines, the capital requirement is substantial. And not only the quantity, but the period for which you may require the funds will also vary. For example, long-term financial needs for mine development, major mine expansion, plant establishment, machinery purchase, land acquisition, and building construction—all these facilities will require long-term financial commitments that may extend beyond 10 years.



So, 5 to 10 years, or 10-plus years, we refer to as long-term financial needs. What is it? We may need spare stores or tools immediately, or require funds for a small expansion for which we do not have cash or readily available money. In that case, we will require medium-term financial support for a few years, and once the small expansion program is completed and returns start coming in, this financial need will be fulfilled. The third category is very short-term financial needs—less than one year—where we lack easy liquidity or available cash.

So, what do we do? We require some working capital. This also becomes necessary sometimes, as I have seen, when you do not have enough profit or are somehow running the show, but you want to continue, and you must have some infusion of working capital to run the mine. And also, to pay the interest to the debtors, you need some cash. So, in that case, we will opt for short-term financial needs, which are usually for a period of less than 1 year.



So, the sources of finance can broadly be categorized into two: one is external sources, and the other is internal sources. The external sources can be further divided into share or equity capital, or can be debt or borrowed capital. So, the shares can again be divided into equity and preference shares, whereas the debt can be further divided into bonds or loans from financial institutions or banks, and there are other sources. So, this is the broad categorization of the sources of finance.

And in internal sources, we can say that we can retain our own earnings and invest them back into the business itself. So, that will be our internal source. This will be our internal source. We are not taking anything from outside. We are investing a part of the profit that we have earned back into the business.

To start with, because these are all basic things that we are teaching now in this particular lecture, not much in detail, but these are essential learnings for the students of mineral economics who have not taken a specific course on these topics. Say any public limited company may raise funds by way of owner's capital or equity capital, which are also known as owner's capital. Because these equity shareholders—you must have heard about stocks and shares, very common words nowadays. So, the equity shareholders are basically the owners because they undertake the highest risk. So, these equity shareholders are entitled.

So, they buy the shares, the money goes to the company, and they become shareholders—that means by purchasing the stock, they become the owner of that part only, which proportionately you can distribute. And this is why they will purchase, because they get a dividend after, say, a financial year. So, once the claims of the other stakeholders are first satisfied, then the shareholders will get their dividend. This is how it is defined. Now, the dividend payable to them is a distribution of profits. That means a part is given, not the entire profit is distributed. Even though they are 100 percent equity-based, meaning they are supposed to be distributed, it is decided that only a part of the profit—

is given to them. Because what happens is, first, there are other claims like debentures and preferential shares where the money has to be paid first. Then, if you decide that some part will be reinvested, the remaining part—in the annual general body meeting—they decide that this part will be shared as dividends to shareholders. At the same time, during winding up, ordinary shareholders can exercise their claim on the assets when you are winding up the company. After the claims of other capital suppliers are settled, whatever is remaining, they can claim because they are the ordinary shareholders. Now, what are the different types of equity shares, as I have been talking? So, shares—what are these? What are the different types? There is a new issue—this is an initial offer. There are rights issues, and there are bonus shares.

So, in the beginning we offer shares in the market. So, you will be seeing big advertisement in the newspapers or in television that the company is issuing the initial offer. Sometimes with a premium that means, if the company it has a big prospect or the company thinks that they have very good prospect or image in the market. So, they can they can sell the 100 rupees at the rate of 315 rupees per share with a premium. what are these then the rights issue and the bonus issue.

So, bonus issue is basically a free distribution of additional shares to existing shareholders. So, the shareholders are there they will get additional shares, but in case of the rights issue this is an offer to buy additional shares at a discounted price. The first one is free of cost, but this is additional share with the discounted price. Now, what happens? Now, the cost to shareholders bonus issue will involve no cost to shareholders, but the rights issue requires shareholder to pay for the new shares.

For the bonus the shareholders will have no cost, but for the rights issue they will have to pay for the new shares. Now, what are the advantages of this equity shares? They are non-redeemable that means you cannot you do not have to purchase back buy back. So, that is ensuring long term capital as long as your company is continuing. So, there is no repayment obligation in case of stock.

So, for example, a mine is running for 30 years, 40 years, 50 years. So, if you have started with 1 lakh, 2 lakhs equity shares in the beginning that will continue for the entire life of the mine entire. So, you do not have to think about the repayment obligation due to money that you have fund that you have gathered or taken from the shareholders right from the beginning. But the equity shares are tradable that means, this can be purchased and sold in open market in stock when they are listed in the stock exchange you can purchase and sell. But that is why when you are allowed to trade there in the stock market.

So, the company which is which has issued the shares from where the investors have purchased They are no way responsible for any loss due to this trading. I mean if I am purchasing at say 140 rupees and then I am forced to sell as at 120 rupees and making a loss of 20 rupees per share, the company is not responsible. It is a trading thing. So, whether you lose or gain, it is your decision.

Now, again if you have a large and strong equity base that means, the company is assumed to be strong in in financial position. So, showing that you have a good equity base a strong equity base you can raise additional fund through debt, debt instruments like debentures. So, by showing that equity strong equity base the we can raise additional fund through the debentures or debt instruments. Companies can also raise additional funds through rights issue as I said earlier when when required. So, these are advantages of the equity share.

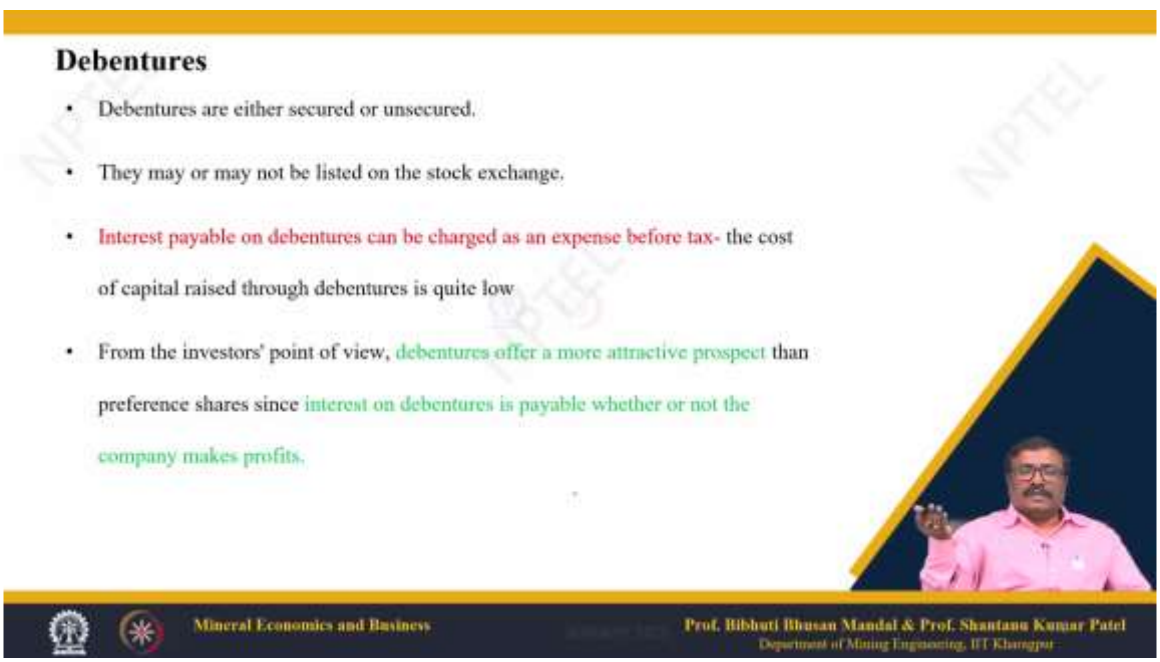
So, what are the disadvantages of raising funds through equity shares? So, investors will find ordinary shares riskier. They are riskier than other instruments because of the uncertain dividend payments and capital gains. Unless they could make a profit, a substantial part of the profit is shared with your stock buyers or shareholders; otherwise, you do not gain anything. So, sometimes when there is no profit, you have to just forget about the dividend at all.

Now, the issue of new equity shares will reduce the earnings per share. Say we have X number of shares in the market, and then we are adding another new issue of equity shares, which makes it X plus A. Now, the amount of profit that we are sharing may be P in the beginning, then we will get P by X as the earnings per share. But when you are adding something, then it will reduce to P by X plus A. So, what happens to X plus A? So, what happens? The earnings per share effectively reduce. If P increases, then the profit or earnings per share will decrease.

So, it will need to be proportionally increased in the future. Now, the issue of new equity shares can also reduce ownership because you are increasing the number of owners, as the number of shares is increasing. Existing shareholders, if they are not buying the new equity shares, will find their control diluted, reducing their overall control over the company. Next come the debentures that the company can take from the public by issuing debentures. by said from the public.

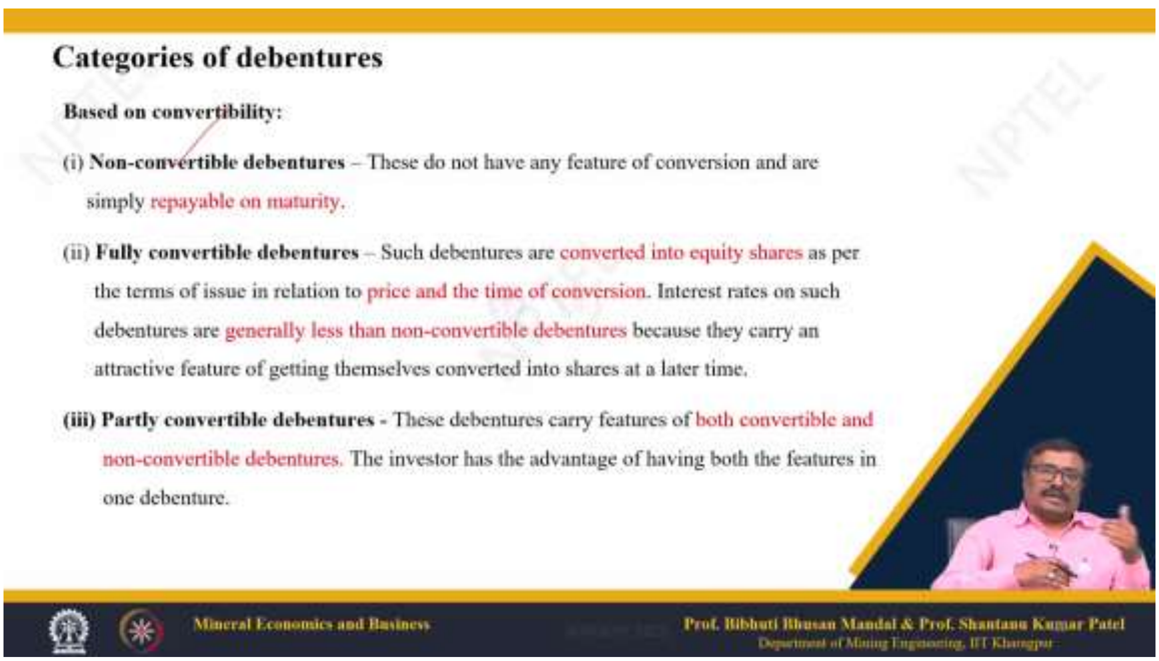
So, what are the ah what are these what is these ah debentures? These are normally issued in different denominations. That means, we are giving ah particularly we have basically a contract between ah we call it Rinpatra. So, it is a debenture a document also well well documented that that is sold rather at 100 or 1000 rupees like a carry different rates of interest.

That means I will give you the debentures the investors will take the debentures from us and they will pay this amount the 100 rupees or 1000 rupees whatever it is fixed and at the end of the year for example, we will pay at a rate of interest that is fixed. So what happens the debentures are basically ah that gives an assurance to the people that they will get a different ah dividend or an interest for for sure. It is not like the dividend that we pay to the shareholders. Here it is it is a certain amount that will be paid to them.

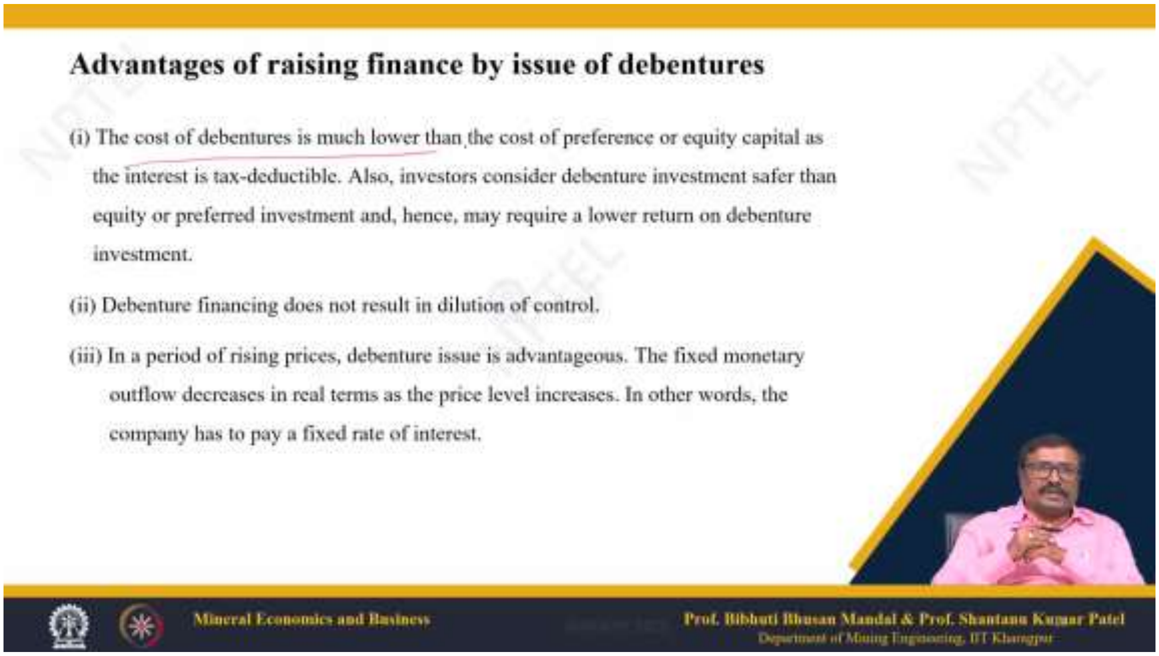


This is basically an instrument for financial instruments for raising long term debt capital, long term debt capital. Now the period of maturity normally varies from 3 to 10 years and may also increase for projects having high gestation period where in mining projects also this can happen that when long term capital investment will be required. before we can get or we can reach the full capacity of the production in any mine. So, it may go even beyond 10 years for complete gearing up for the complete ah full production, till then we require money huge amount of money. So, we can issue debentures and take loan rather basically it is nothing, but taking loan from the public by issuing these debentures.

Now they can be either secured or unsecured; that will come later. So, they may not be listed or listed on the stock exchange—not necessarily. So, the interest payable on debentures can be charged as an expense before tax. This is very, very, very important. That means, when we are calculating or finding out the profit, then what we do is that a certain part has to be paid because this is a debenture. There is an agreement between the company and the investors that at the end of the year, you will pay interest against the debenture based on the value and the interest rate that we have fixed.



So, the cost of the cost of capital raised through debentures is quite low because whatever interest we are paying to the investors will be deducted from our income. So, the effective tax rate—the effective tax—will come down. So, the company will enjoy that part. That means the cost of capital to the company for the debentures they have issued will be low. From the investors' point of view, debentures offer a more attractive prospect than preference shares, since interest on debentures is payable whether or not the company makes any profit.



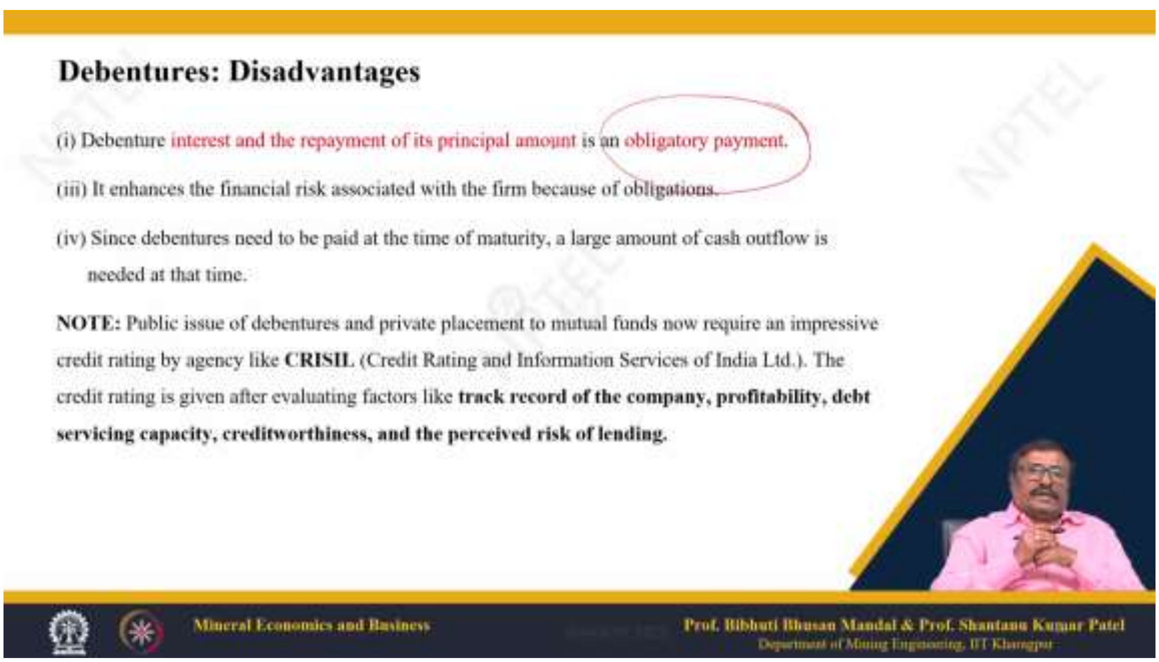
So, you have to pay the interest on the debentures. So, whether you make a profit or do not make a profit, this is a financial obligation for any company. What are the categories of debentures? Based on convertibility, we can say that there are non-convertible debentures. So, these cannot be converted into shares, and they are simply repayable on maturity.

So, this is another part where we not only pay interest every year, for example, but also when it reaches the period of maturity, at the end of the period of maturity, the debentures are given back to the company, and the company will pay the value also. So, in that case, you have to pay on redemption. Now, fully convertible debentures are also there. These debentures are converted into equity shares.

There are debentures which cannot be converted, but these debentures can be—these are fully convertible debentures. They can be converted into equity shares as per the terms of issue in relation to price and time of conversion—what price and at the time of conversion. That means, when it is converted, that has to be fixed in the beginning. The interest rates on such debentures are generally less because these can be converted into shares, which is why it is generally less than non-convertible debentures, because they carry attractive features

of getting themselves converted into shares at a later time. Now, there is something hybrid called the partly convertible debentures. These debentures carry features of both convertible and non-convertible debentures. So, here this is a combination of these two, nothing else other than the features of what we have discussed before. Now, what are the advantages of raising finance through debentures?

As I said the cost of debenture, the cost of capital which is a subject in this series of lecture is much lower than the cost of preference or equity share capital, because the interest itself is tax deductible right in the beginning. So, the investors consider debenture investment because they will get a guaranteed interest after a predefined period, but in in in equity or share capital it is not guaranteed at all. So, they may require a lower return on debentured investment. So, debenture financing does not result in dilution of control like the shares because if you are increasing the number of shares then you will be diluting the control because the shareholders are basically the owners in a way.



So, in a period of again rising prices when the price is rising in the market debenture issue is advantageous. Why? Because the fixed monetary outflow decreases in real terms because the value of money because rising price is rising. So, in case of inflation the money is devalued, but what happens you are paying the same amount that means effectively you are paying less amount.

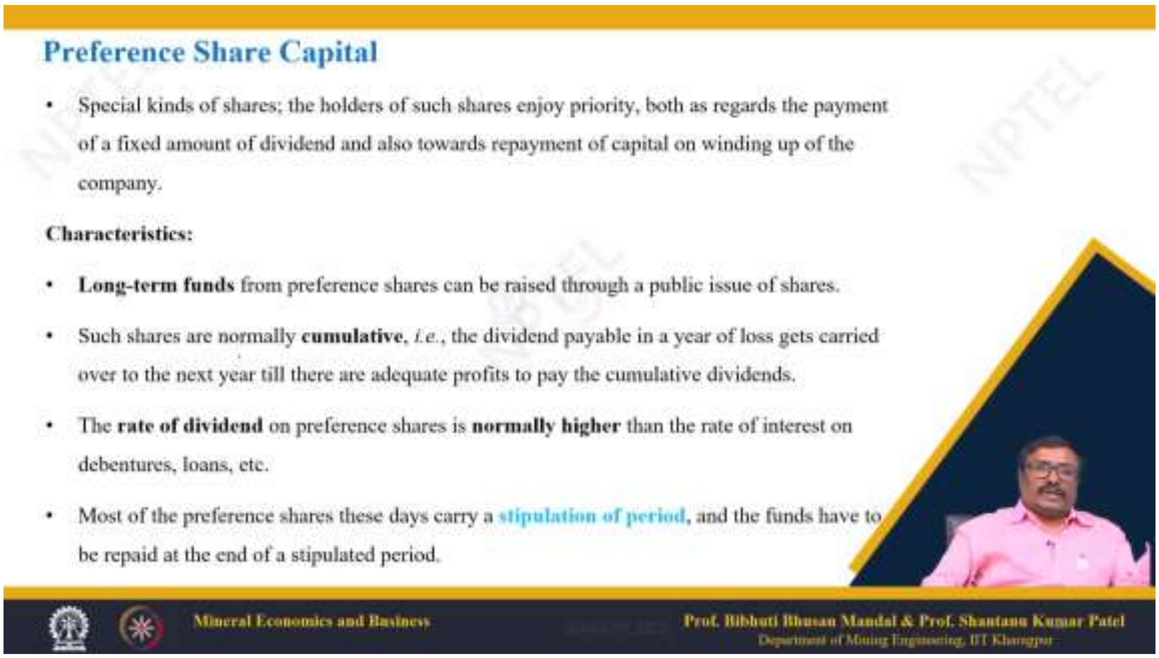
So, the company has to pay a fixed rate of interest, but fixed say 100 rupees you are paying 9 rupees per debenture, but if the value of 9 rupees falls to 8.5 rupees due to inflation then also you are paying that 9 rupees that means you are effectively paying less effectively paying less. If you are trying to adjust in the inflation then you are supposed to pay more than 9 rupees, but you are paying 9 rupees that means you are paying effectively less amount. What are the disadvantages? First thing is that payment of interest is an obligatory financial obligation for a company, because whether you are having profit and or no profit you have to pay the interest.

So, the financial risk is higher in the case of this kind of obligation. So, since debentures need to be paid at the time of maturity, a large amount of cash outflow will be required during redemption at the time of maturity. When all these mature, a huge amount of money will go as cash outflow. And another part is that when you are taking a loan from the public, your company's image should be good—meaning your credit rating in the market should be good; otherwise, people will not be interested in purchasing the debentures. Purchasing debentures means actually giving a loan to the company.

Why would I give a loan to a company that may not provide a return or may not continue its business? So, the credit rating through CRISIL or similar credit rating agencies like Credit Rating Information Services India Limited—depending on the rating given by them—only then can we benefit from easily issuing the debentures and getting a loan from the public. Now we are coming to the preference share capital. This is a deviation from the share capital that we first discussed in the beginning. So, these are a special kind of shares.

So, the holders of these shares enjoy priority in regard to the payment of a fixed amount of dividend, like debentures, as I said—but remember, they are shares. Also, they have priority towards repayment of capital on winding up the company when it is finally closed. It is not 10 years or 3 years or something. When the whole thing is wound up—when the company is closed—only then can you get back the money. That means the repayment of capital is assured when the company is wound up.

Now, the long-term funds from preference shares can be raised through public issue of these shares because this is up to the discretion of the company. These shares are normally cumulative, which means the dividend that is payable in a year of loss gets carried forward. That means, if you are not paying any dividend this year because of the loss incurred by the company, this will be carried forward to the next year and will be added up. So, unless and until we have adequate profit to pay, we can wait for this, and ultimately you get the cumulative dividend. That is the beauty of this preference share capital. The rate of dividend on preference shares is normally higher than the rate of interest on debentures or loans.



Most of these preference shares now carry a stipulation of period, and the funds have to be repaid at the end of the stipulated period. This is a modification. Instead of having an open end like 30 years, 40 years, or as long as the mine goes, you have to wait for repayment. So, it is almost coming closer to debenture, but not exactly the debenture. In hybrid form of financing, the concept is that preference share capital can be conceived as a hybrid form. Because, from what I have discussed, you might have understood by this time that it has both the features of equity and debt capital.

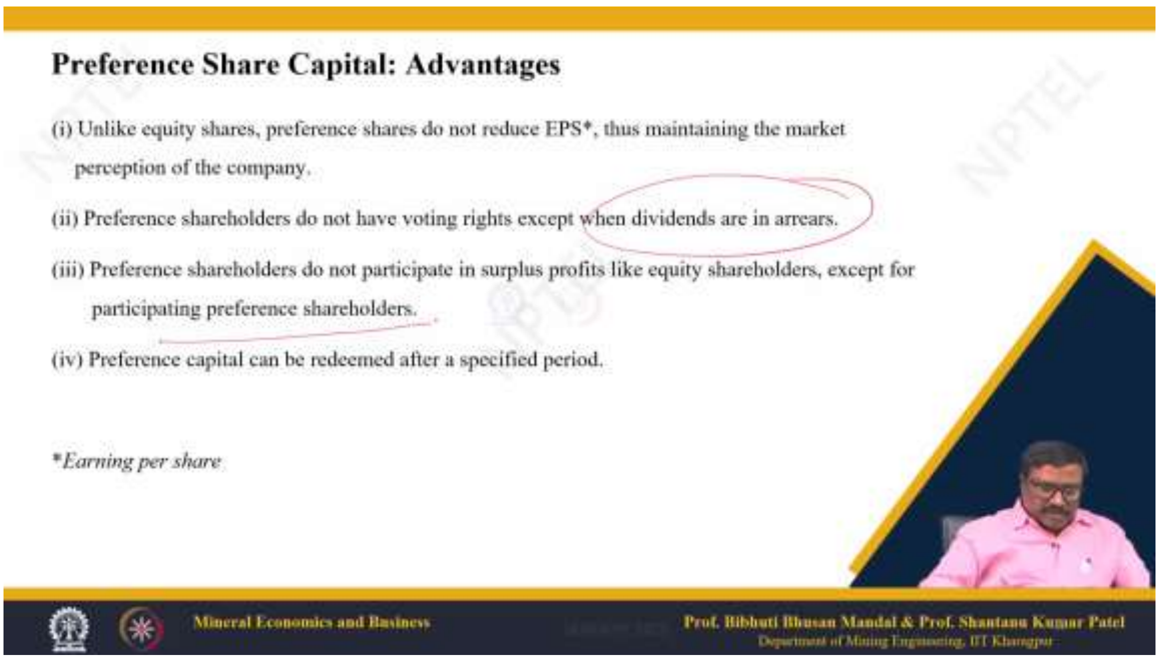
It is similar to equity because preference dividend, like equity dividend, is not a tax-deductible payment. So, it is not a debenture. But you are getting it every year or so. It resembles debt because the rate of preference dividend is fixed. You are not market-dependent.

So, it looks like debenture, but it also looks like share capital. So, the cumulative convertible preference shares are also another option. that may be offered when where shares carry a cumulative dividend for a specific period. For example, 3 years you will not give any kind of dividend in that case what will happen after 3 years for example, or 4 years you can give the entire dividend you can hold on that. These shares are attractive for projects with long gestation period when you need the money for certain period of time.

So, you do not have to pay you can wait for that the company can wait for that. Now the redeemable preference shares, these may be redeemed at a pre-decided future date earlier from the company profit. These enable the promoters to withdraw the capital. Once the company becomes self-sufficient, so the people who had the preference share, they can withdraw the money and they can reinvest wherever they like maybe for better profitable ventures. Unlike equity shares, preference shares do not reduce the earning per share because they are not typical equity shares.

So, thus maintaining the market perception of the company, we are not diluting it. Preference share holders do not have voting rights unless the dividends are paid in areas. So, they do not also participate in surplus profits like equity shareholders except for participating in preference shareholders. Now, the preference capital can be redeemed after a specified period. These are these are also additional advantages.

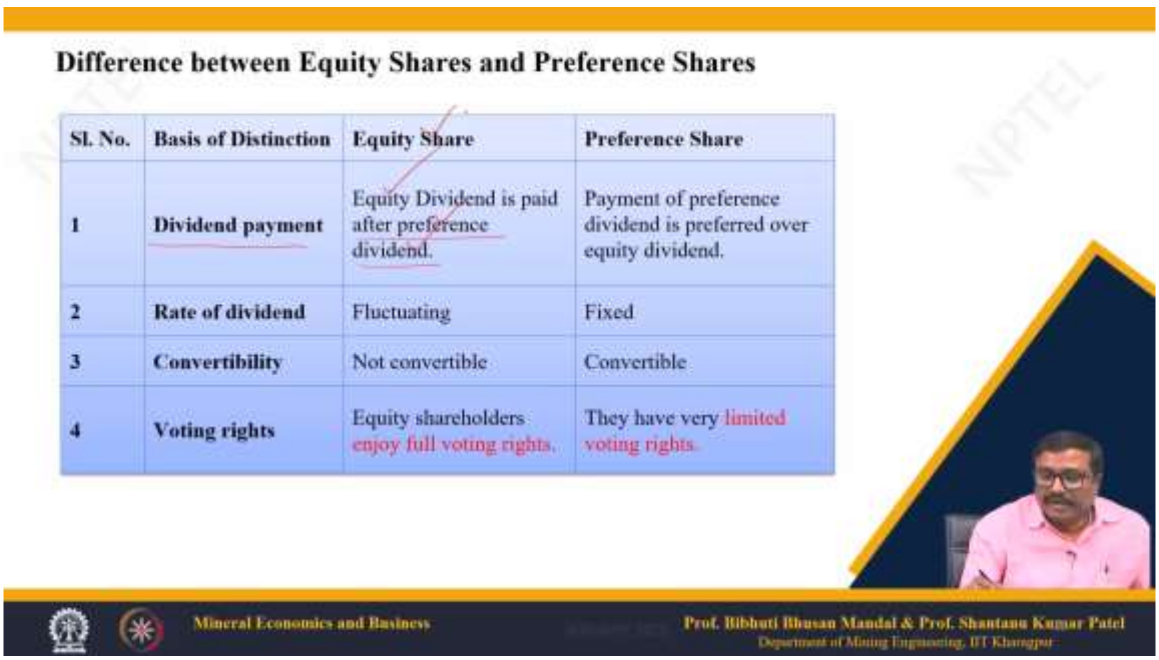
What are the difference between the equity shares and the preference shares can be summarized like this. So, the equity shares in case for dividend payment equity dividend is paid after preference dividend. That means, first the preference dividend are paid dividend for the preference shares are paid then equity dividend is paid. But in for preference share is the payment of preference dividend is preferred over equity dividend is same thing written in two different language nothing else. So, first we pay for the preference share



it is a preferred share rather. So, the dividend is paid for the preference share capital first and then we pay to the equity. Rate of dividend for equity share is fluctuating not fixed, but for preference share it behaves like a debenture and is fixed. Convertible shares are not convertible, but it is convertible partially or fully convertible. So, voting rights, equity shareholders enjoy full voting rights.

They have very limited voting rights for the preference shares except very exceptional cases. Similarly, if we can now we compare preference share with debenture, previously we did with equity. So, the for preference shares, the preference share capital is a special kind of share. So, the debenture is a type of loan which can be raised from the public. One is share capital, one is again debt capital.

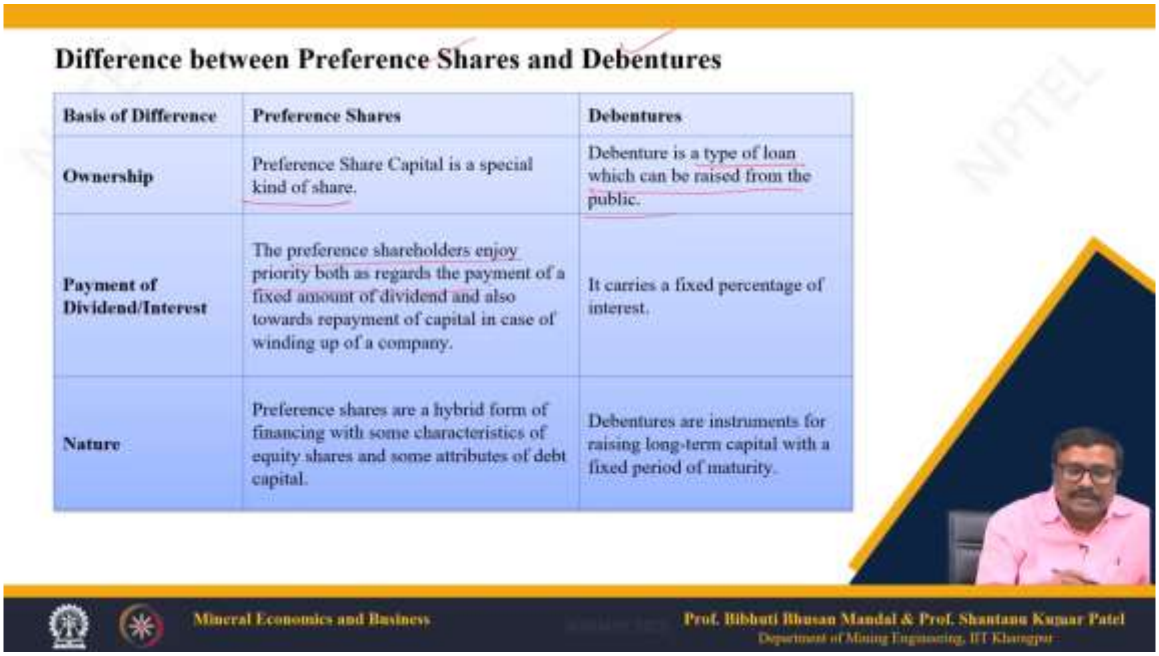
Now, the payment of, say, dividend or interest—the preference shareholders enjoy priority both as regards payment of the fixed amount of dividend and also towards repayment of capital in case the company is getting wound up. So, in that case, the preference share will always get preference, but here in debentures, we have a fixed percentage of interest. A preference share is a hybrid form of financing with some characteristics of equity and some attributes from debt. But debentures are essentially instruments for raising long-term capital with a fixed period of maturity. Now, we are coming to the two small parts of this lecture. The first one is retained earnings—these are not shares, not debentures, nothing to do directly with the public.



Sl. No.	Basis of Distinction	Equity Share	Preference Share
1	Dividend payment	Equity Dividend is paid after preference dividend.	Payment of preference dividend is preferred over equity dividend.
2	Rate of dividend	Fluctuating	Fixed
3	Convertibility	Not convertible	Convertible
4	Voting rights	Equity shareholders enjoy full voting rights.	They have very limited voting rights.

Long-term funds may also be provided by accumulating the profits of the company and by reinvesting them back into the business. That means we have earned and invested a part of that—it is a very common thing. So, these funds actually belong to the ordinary. And increase the net worth of the company. Now, the shareholders cumulatively decided that this part will be reinvested.

So, the net worth of the company is increasing. So, when a reasonable amount of profit is earned every year, we can reinvest it. So, this is also a legal requirement—that you do not just increase your cash balance in the bank. Some part has to be reinvested to increase the business, especially for its expansion plans. This is common—these funds also carry almost no risk. And the control of present owners is also not diluted—rather, the net worth of the company is increasing. People must be happy.

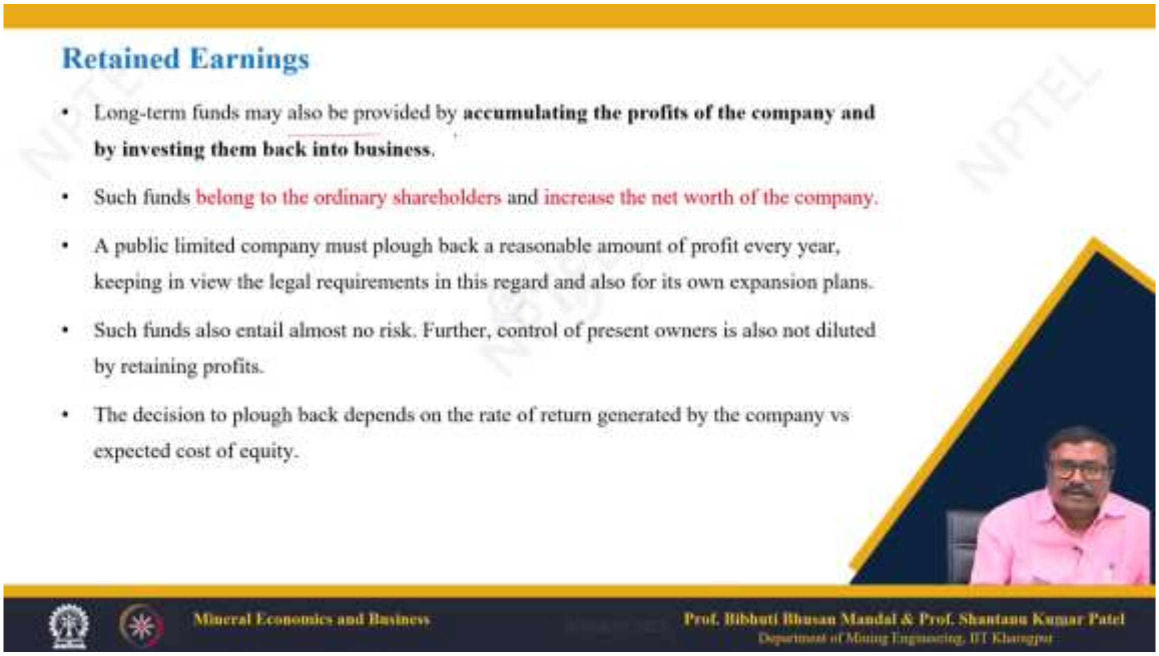


Basis of Difference	Preference Shares	Debentures
Ownership	Preference Share Capital is a special kind of share.	Debenture is a type of loan which can be raised from the public.
Payment of Dividend/Interest	The preference shareholders enjoy priority both as regards the payment of a fixed amount of dividend and also towards repayment of capital in case of winding up of a company.	It carries a fixed percentage of interest.
Nature	Preference shares are a hybrid form of financing with some characteristics of equity shares and some attributes of debt capital.	Debentures are instruments for raising long-term capital with a fixed period of maturity.

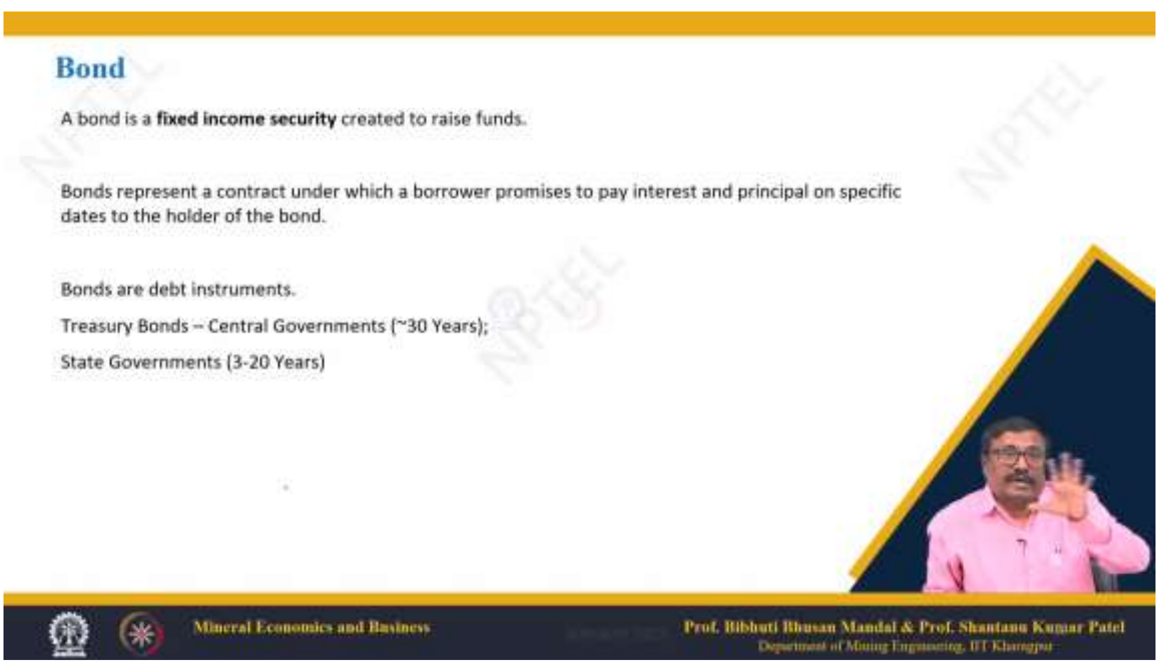
The decision to do these things depends on the rate of return generated by the company versus the expected cost of equity that we compare, and then we make this decision. The last one, which will be further discussed in other lectures, is just an introduction to the bond. This is a fixed-income security. This is also created to raise funds. These bonds represent a contract under which a borrower, meaning the company,

pays both interest and principal on specific debt to the bondholder. It is nothing but getting a loan with a contract that after a certain period, you will get the money back, and also promises to pay interest at the rate fixed during the contract signing. Bonds are nothing but debt instruments. So, the central government issues long-term treasury bonds, usually more than 30 years.

But state governments also issue bonds to raise capital from the public, typically for 3 to 20 years. There are two different types, such as callable bonds and putable bonds. What are these things? Callable bonds give the issuer, meaning the company or the government, the option to redeem or call back the bond before its maturity period. When interest rates fall, it can be called or redeemed.



So, in that case will be have less liability will pay less and get the also get back the ah the bonds. And, the the the company for example, can issue a callable bond with a high coupon rate and then if the interest rates drop, call back the bond and issue new bonds with lower interest rates, thereby gaining due to the fall of the interest rates. And what is this putable bonds? Putable bonds give the investor the bond holder the option that they can sell the bond back to the issuer before its maturity date.



Typically if the interest rate rise then it can be sent back to the issuer they get some extra money or the issuers credit quality when they it weakens then it can be again sent back to the issuer of the company. So, if a putable bond is issued with a 5 percent coupon rate and the interest rate rises to 6 percent, then the investor can easily can put the bond back to the issuer and reinvest a new bond with higher interest rate in the market that is visible already. So, that is the benefit of the putable bond to the investor. So, these are two specific special type of bonds that we discussed. So, these are the different financial instruments

through which ah like any business or say mining company can raise funds from the market. We will continue this discussions in the next ah lectures ah and ah for reference I have given ah two ah books and one one book and one website from where the ah you can get the material in much more in detail. We will continue this discussion in the next ah lecture. Thank you very much.