**Management of Fixed Income Securities**
**Prof. Jitendra Mahakud**
**Department of Humanities and Social Sciences**
**Indian Institute of Technology, Kharagpur**

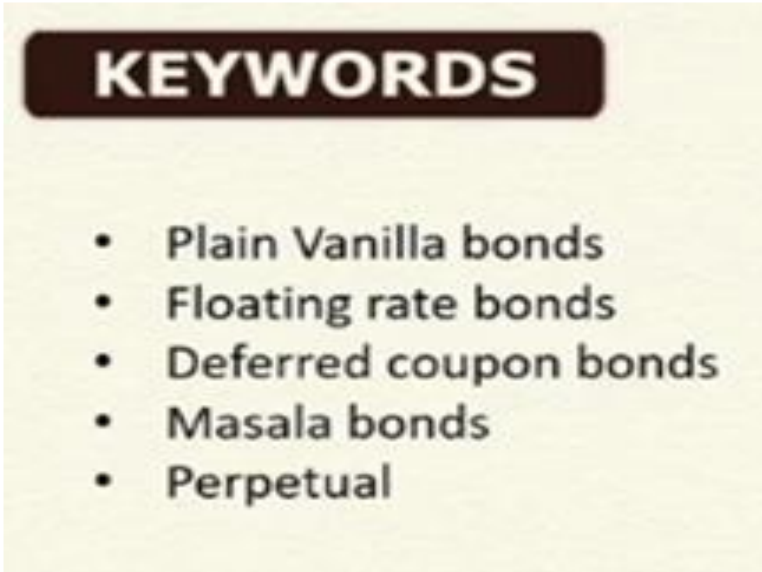
**Module No # 06**
**Lecture No # 30**
**Medium- and Long-Term Corporate Bond Markets**

Welcome back, in the previous session we discussed about the certain government securities and mostly and it is the commercial papers. So, today we are discussing about the other long term and the medium-term securities which are traded in the corporate bond market and what are those markets available for that and what kind of instruments are traded and all these things?

**(Refer Slide Time: 00:44)**


So, in today's session we will be discussing about the largely long-term corporate bond markets and more specifically the long-term corporate bond markets. If you see the one of the major instruments that are basically debentures. So, there are the broad concepts what will be discussing in the today's session.

**(Refer Slide Time: 01:08)**




So, you will come across many keywords I have just reported certain keywords like what generally we use it called the plain vanilla bonds, floating red bonds, deferred coupon bonds, masala bonds and perpetual. So those kind of what is basically what will be using in today's discussion. But there are many other types of bonds which are traded in the market that basically you will get to know or we will be discussing over these particular sessions.

**(Refer Slide Time: 01:46)**


So, let us see what are those different types of long-term instruments which are traded in the corporate bond market. You see that whenever we classify the instruments which are traded in the corporate bond market generally the classification is based upon or may be the bonds are classified on the basis of the coupon payments, on the basis on the currency, on the basis of the embedded options, which are involved with respect to that particular bond or it can be claim based like whether it is secured or unsecured or there are some other specific special types of bonds that also are headed in the market.

So, whenever we are classifying the bonds on the basis of the coupons we have the bonds like plain vanilla bonds, floating red bonds, zero coupon bonds, caps and floor, inverse floater, inflation indexed bond, step up bonds, default coupon bonds, deep discount bond and all these things and the bonds which are classified on the basis of currency they are classified as the foreign currency denominated bonds and the masala bonds and if you talk about the embedded options is the criteria to classify the bonds.

Then, we have the callable bonds, puttable bonds, convertible bonds, warrants and all these things. Then, if you have to classify on the basis of security or the claim then we have secured bond and unsecured bond, subordinate bond, credit enhanced bond and all these things. Then other bonds already I told you we have the perpetual, you have the additional tier 1 bonds, additional tier 2 bonds, this green bonds, tax free bonds, asset linked bonds and all type of bonds which are the specific bonds which are also the part of the long-term bond market in India and as well as the other countries.

So, let us see one by one how those particular instruments are defined? And how basically the characteristics are varying from one type of bond to another type of bond?

**(Refer Slide Time: 04:01)**

**Coupon Based Instruments in Corporate Bond Market**

- **Zero coupon bonds**: No coupon is paid out and it is redeemed at par value at the end of the term of issuance
- **Plain vanilla bonds**: These are issued to raise medium and long-term resources. Many bonds pay interest annually.
- U.S. corporate bonds often used a day count convention of 30/360.
- Most issuers of debt securities select a coupon rate that makes the bond sell initially at par.
- For U.S. bonds, the coupon interest is typically based on a 360-day year and 30-day month (30/360 day-count convention).
- A $1,000 par value bond with a 9% coupon would pay $90 per year and its interest would accrue at a rate of $7.50 per month ($90/12) and $0.25 per day ($90/360).

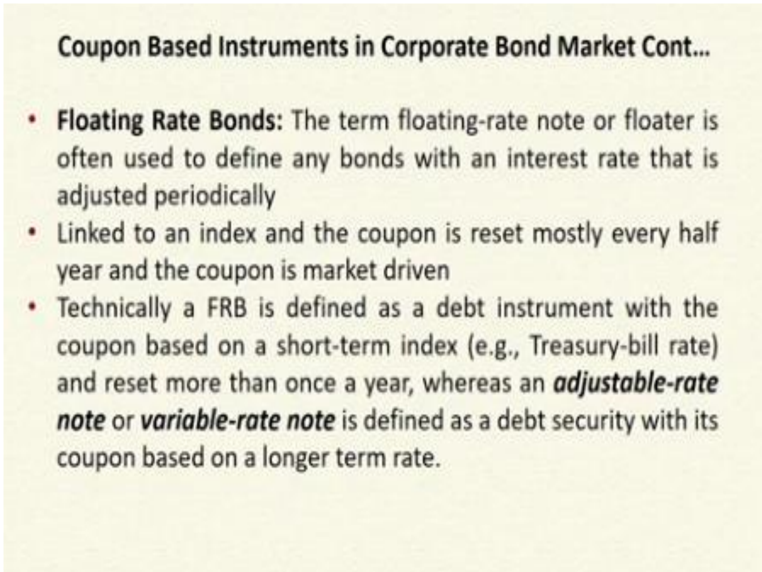
So, let us start with the discussion on the coupon-based instrument in the corporate bond market. Who are those or what are those instruments which are classified on the basis of the coupons? So, whenever you talk about zero coupon bonds as all of you know that no coupon is paid and it is always redeemed at par at the end of the term to maturity. So, it is issued at discount and redeemed at par so this is about your zero-coupon bond.

That already all of you are very much aware about and then we have the most common used word in the bond market that is called the plain vanilla bonds. So, what this plain vanilla bond is all about. So, these bonds are generally issued to raise the medium and the long-term resources and many bonds pay the interest annually the coupon payments are made annually. So, if you talk about the U.S. corporate bonds particularly the coupon bearing bonds, they generally use the day count convention of 30 by 360.

In India we have actual by actual that is actual by 365 days but in US generally they use this convention of 30 by 360. So, most issuers of the debt securities select basically coupon rate that makes the bond sell initially at par. That is the general observations that is not a thumb rule but that is the general observations that basically what you can keep in the mind and in US if you talk about generally 1000 dollar per value bond.

If you talk about and if you are using the 30 by 360-day count convention then if a bond whose par value is 1000 dollar and coupon is 9% then they would pay the 90 dollar per year and its interest would occur at a rate of 7.5 dollar per month that is 90 by 12 and 0.25 dollar per day that is 90 by 360. That is the concept what basically you have to keep in the mind whenever you talk about the plain vanilla bond which is a coupon bearing bond.

**(Refer Slide Time: 06:40)**



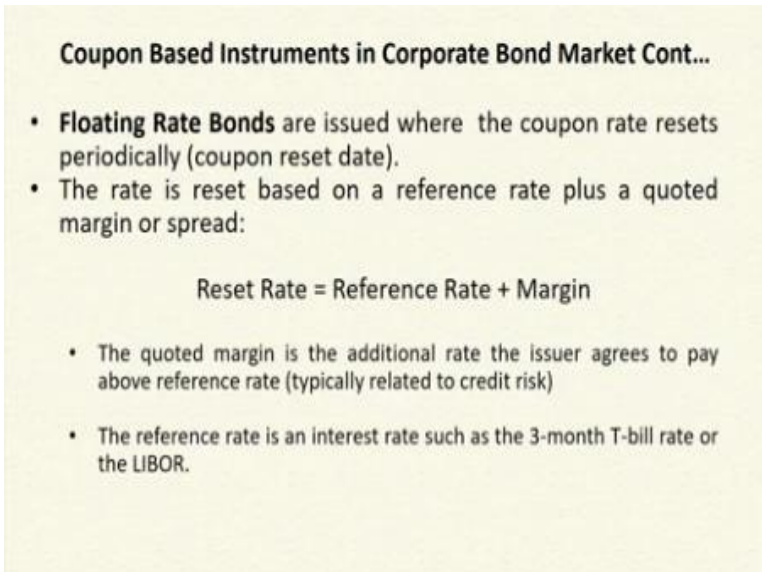

So, then we have another bond that is called the floating rate bonds you remember that the plain vanilla bond is quite popular in both US and as well as India. Mostly the investors are inclined to invest in the plain vanilla bonds. Floating rate bonds are there but they are not that much popular in both the markets. So, if you use this term floating rate here the floating rate bond or note or floater generally, we call it the floater is generally used to define any bonds with an interest rate that is adjusted periodically.

The interest payments or the coupon payments against these bonds are generally changed over a period of time. Periodically there is some adjustment takes place with respect to the coupon payments. So, this is linked to generally an index the value of that particular coupon the interest rate is linked to an index and the coupon is reset mostly every half year and it is market revenue. Technically a floating rate bond is basically defined as a debt instrument with the coupon based on a short-term index let Treasury bill rate.

The treasury rate can be used as a kind of benchmark for deciding that interest rate for that particular floating rate bonds. And it is reset more than once a year and an adjustable rate note or variable rate note generally is defined as a debt security with its coupon based on a longer-term rate. So, there are 2 ways the rates are defined one can be based on the basis of the short-term instruments or short-term index like treasury bill rate.

And other one is that the adjustment also can be made on the basis of another instrument which is long term in nature that is called the adjustable-rate bond or the variable rate bond. But in US it is called the adjustable rate note or the variable rate note. So, that is basically another floating rate bond definition what basically or the concept what basically you have to understand.

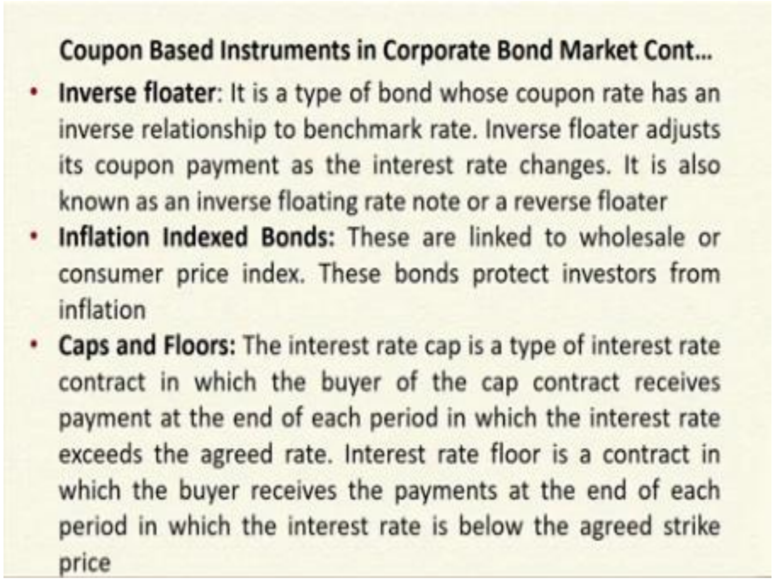
**(Refer Slide Time: 09:19)**




And if you see that the floating rate bonds are issued where the coupon rates basically reset periodically that is called the coupon reset date. And the reset is based on a reference rate plus a quoted margin or spread so the reset date rate if you are talking about that how the rates are basically changing over a period of time that is the reference rate plus a margin. And why there is a margin it is basically the additional rate the issuer basically agrees to pay above the reference rate.

And why basically they are ready to pay that because there is a credit risk involved in that so the margin is basically adjusting the credit risk. So, there is a premium which is basically paid against that so, that is basically we call it the margin or the spread. So, the reference rate already we have discussed that may be 3 months Treasury bill or it can be live or in the international market. You can use the LIBOR rate as a reference rate or you can also use the 3 months treasury bill rate as a reference rate in that particular context.

**(Refer Slide Time: 10:40)**



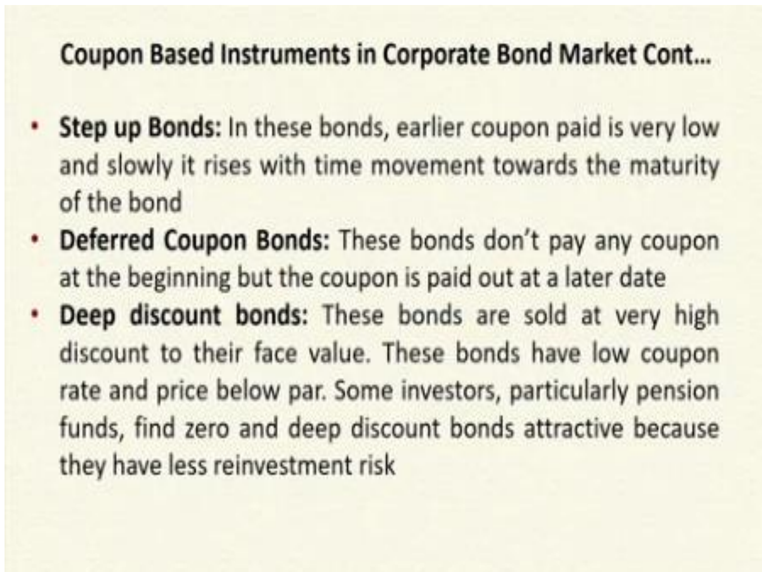

Then we have a concept a bond called inverse floater so what is the inverse floater? It is a type of bond whose coupon rate has an inverse relationship to the benchmark rate. So, the inverse floater basically adjusts its coupon payment as the interest rate changes whenever the interest rate changes the inverse floater basically adjusts its coupon payment. It is also known as the inverse floating rate note or the reverse floater the other name of the inverse floater is the inverse floating rate note or the reverse floater.

So, that is another way basically this flexible interest rate is prevailed or flexible coupon rates are prevailed for that particular type of bonds. Then another important bond if you see we have the inflation index bond. So, these bonds are linked to the wholesale or the consumer price index. That means the inflation is going to be changed over the time if the inflation is going to be changed then this particular principal or the coupon value of that particular bond is going to be changed. So, these bonds are basically protecting the investors from the inflation.

Then we have the caps and floors what are those bonds are? So here the interest rate cap is a type of interest rate contract in which the buyer of the cap contract receives the payment at the end of each period in which the interest rate exceeds the agreed rate. This is a kind of options which are linked to that and accordingly the payment will be made to the bond investors. And the interest rate floor is a contract where the buyer basically receives the payment at the end of each period in which the interest rate is below the agreed strike price or agreeable price which has been fixed before.

So, if these conditions are satisfied then the payments of the interest rate will be made unless it will not be made. So that is another type of bond which basically we observe in the market these is called the caps and floors.

**(Refer Slide Time: 13:30)**



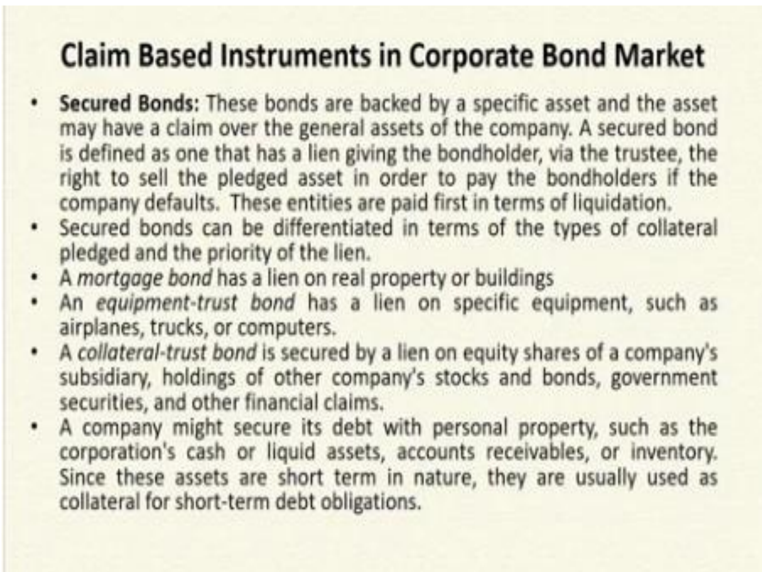

Then what are those other bonds other bonds basically is the step-up bonds what are those step-up bonds? Here in this type of bonds earlier coupon paid is very low let the maturity period is 7 years. So, in the beginning the coupons rates are low and slowly it will rise with time movement towards the maturity of the bond. So, first year coupon rate it will further increase in the second year it will further increase in the third year and so on. So, the coupon rate should be higher once the bonds is approaching towards the maturity. So that is called the step-up bonds. So, that means the coupon is slowly increasing over the time the coupon rate is changing and it is increases slowly over the time.

Then we have another bond called the deferred coupon bonds, so what is deferred coupon bonds? The deferred coupon bonds basically what these bonds do not pay any coupon at the beginning but the coupon is paid out at a later date. That means the coupons are deferred in the beginning they do not pay the coupons but in the later date they will be paying the coupon against those particular bonds. So, that particular kind of characteristics will be defined in the beginning that there is a possibility that the coupons can be deferred so that is called the deferred coupon bonds.

Then we have a bond called the deep discount bonds what are those deep discount bonds? These bonds generally sold at very high discount to the face value. These are the discounted bonds but the discounts are very high whenever the bonds are sold and these bonds generally have low coupon rate and the price is below the par.

And who are basically inclined to invest then only some investors particularly the pension funds they find this deep discount bonds are attractive because they have less reinvestment risk in the sense that is the interest-on-interest risk. Because the pension funds have the less amount of or there less exposure towards the reinvestment risk, they always prefer this deep discount bonds which are issued with a high discount in the beginning. So, that is basically called the deep discount bonds.

**(Refer Slide Time: 16:25)**




Then we have certain bonds which are classified on the basis of the claims. You know that is a broad classification of the corporate bonds we have a secured bond and we have an unsecured bond. How to define a secured bond? By definition itself you can understand these bonds are backed by a specific asset and the asset may have a claim over the general assets of the company. So, this is basically defined as one of the bonds which have a lien giving the bondholder via the trustees or the right to sell the pledged asset in order to pay the bondholders if the company defaults.

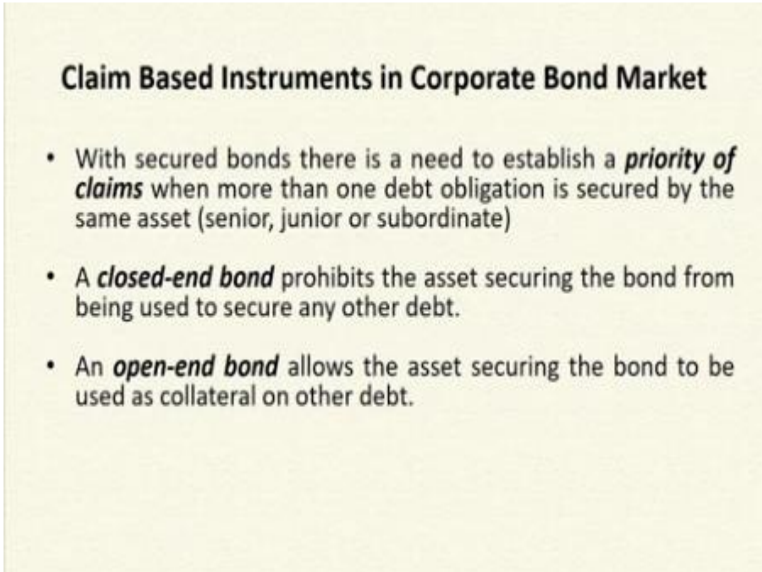
So, if the company is going to be defaulted if the company is going towards the liquidation, then those assets can be utilized to repay the proceedings like your principal and the interest payments to the bond investors. So, the secured bonds can be also classified in terms of the collaterals which are pledged against that particular type of bond. What are the different types of collaterals are used against that particular bond?

Accordingly, you can also differentiate among these secured bonds. Like if you have a mortgage bond. Generally, the mortgages concept comes whenever the collaterals or the assets basically is a fixed assets like the lands, property or buildings in that particular context, we are using the word mortgage. So, if the particular company's real property and the buildings are basically used to back up that particular kind of bond then we call it the mortgage bonds.

And we can have an also equipment trust bond, so this bond has a lien on specific equipment like airplanes, trucks, computers and whatever assets the tangible assets the company has that equipment can be used as the collateral against that. And a collateral trust bond it is a different type of bond it is basically secured by the equity shares of a company's subsidiary or holdings of other company stocks and bonds or the government securities or other financial claims what the company has it is mostly backed by certain financial assets.

So, a company might secure its debt with personal property like your cash, liquid assets, account receivables, all these things. And all these assets are generally short term in nature. That’s why they are usually used as collateral for the short-term debt publications of the companies using their cash or liquid assets as the backup asset against this particular bond. Those things are not mostly used for the long-term corporate bonds these are mostly used for the short-term debt obligations of the particular company. So, this is about your secured bond.

**(Refer Slide Time: 20:32)**

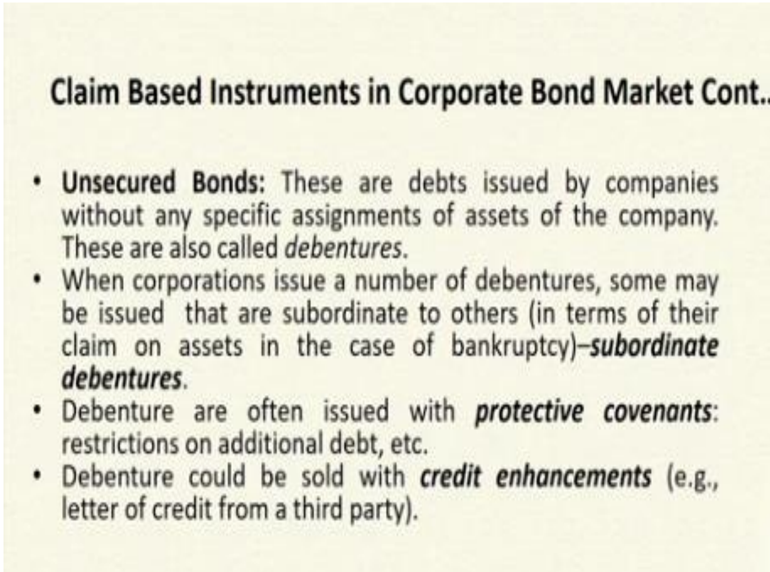



But whenever you talk about the secured bonds always, we need to establish a priority of the claims when more than 1 debt obligation is secured by the same asset. Let the company has issued 2, 3 bonds and the same type of asset has been used as the backup asset or collateral against that. Then who will get if there is any default or any kind of liquidation then what should be the priority, who will get the proceedings first?

Then who will be getting the second? So, in that case we call it the concept of senior bonds, junior bonds or the subordinate bonds. Then a closed end bond basically prohibits the asset securing the bond from being used to secure any other asset. So, in that context if you see that there are if there is a closed-end bond that means if 1 asset is already used as collateral for 1 type of bond then further this particular asset cannot be used that is called the closed-end bond.

But the open-end bond allows the asset securing the bond to be used as collateral on other debt also or rather bond also. So, that’s why whether this particular bond is a closed-end bond or it is open-end bond that will decide that the same asset can be used for the multiple debt instruments or not.

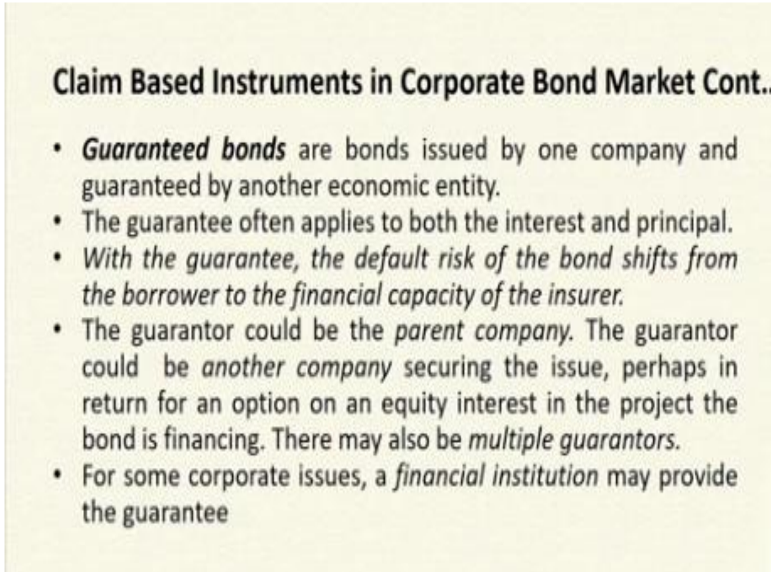
**(Refer Slide Time: 22:08)**




Then we have the unsecure bond so these are basically the bonds or debts which are issued by the companies without any specific assignments of the assets of the company or these particular bonds are not backed by any of the assets of the company so these bonds are called debentures. Mostly the debentures are the unsecured bonds, so when the companies issue a number of debentures some may be issued that are subordinate to the others that is called the subordinate debentures.

And debentures also are often issued with protective covenants; sometimes or the restrictions on additional debt. So, debentures also can be sold with credit enhancements like you can get a kind of guarantee from your credit from the third party like the banks. If you are going to be defaulted then the bank is going to pay that is called the credit enhancement. That possibility is also there whenever companies are issuing these debentures.

**(Refer Slide Time: 23:29)**



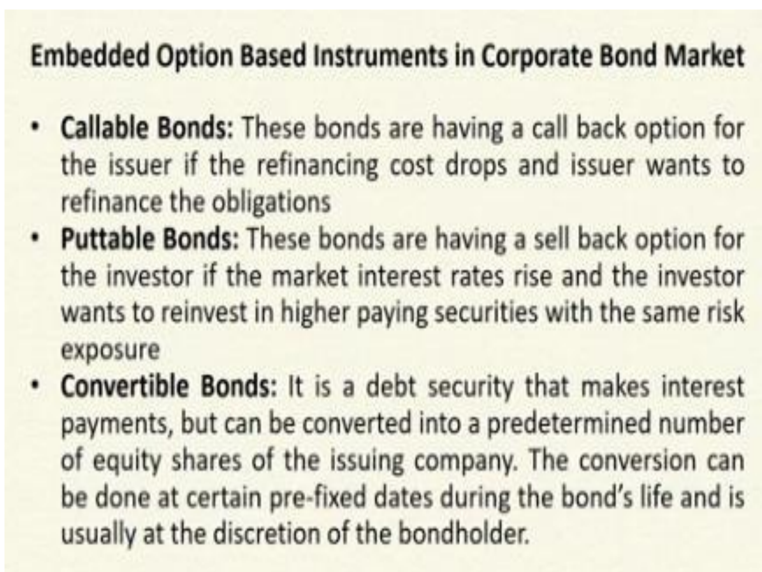

So, we have another type of bond that is called the guaranteed bond. So, what is the guaranteed bond? These bonds generally issued by one company and guaranteed by another economic entity. So, these guarantees generally applies both the interest and the principal. So, if there is a guarantee then the default risk of this particular bond shifts from the borrower to the financial capacity of the insurer basically it is the kind of insurance.

If somebody is giving the guarantee then if this particular issuer is going to be defaulted then who are the guarantors, they are basically going to fulfill the requirements so that is called the guaranteed bonds. So, the guarantor could be the parent company, if the issue is basically coming from the subsidiary company. The guarantor can be another company and there may be multiple guarantors for 1 particular type of bond the guarantors also can be multiple guarantors. Not necessary that one bond should be backed by a single guarantor it can be multiple guarantors. For some corporate issues a financial institution also may provide the guarantee or the banks also can provide the guarantee. That if there is a default then the bank is going to pay for that and bank generally charges certain kind of commissions against that and that is a non interest income what basically they can earn. So, these are called the guaranteed bonds.

**(Refer Slide Time: 25:08)**


So, we have the foreign currency denominated bonds these bonds are generally issuable and payable only in the foreign currency and sold in a foreign market to the foreign investors. And another concept we have in India that is called the masala bonds. So, these are issued and payable in Indian rupee and issued in a foreign market to the foreign investors that is the basic difference between the foreign currencies denominated bonds and the masala bonds.

**(Refer Slide Time: 25:40)**




Then, we have the embedded options accordingly also we can classify the bonds we have a callable bond. These bonds have a call back feature call back option for the issuer at any point of time the bond can be bought back by the issuer itself. And then generally if the refinancing cost drops and the issuer wants to refinance the obligations then they can go for this kind of process, they can go for calling back the bond.

We have a puttable bond here these bonds are having the sell back option for the investor, if the market interest rate rises and the investor wants to reinvest the higher paying securities with the same risk exposure that thing can be possible. Then, we have a convertible bond so it is the debt security that makes the interest payments but can be converted into predetermined number of equity shares of the issuing company these bonds can be converted into equity after a certain point of time.

And the conversion can be done at a certain fixed dates during the bonds life and generally it is the discrimination of the bond holder whether they want to convert it to the equity or not these are called the convertible bonds.

**(Refer Slide Time: 26:59)**

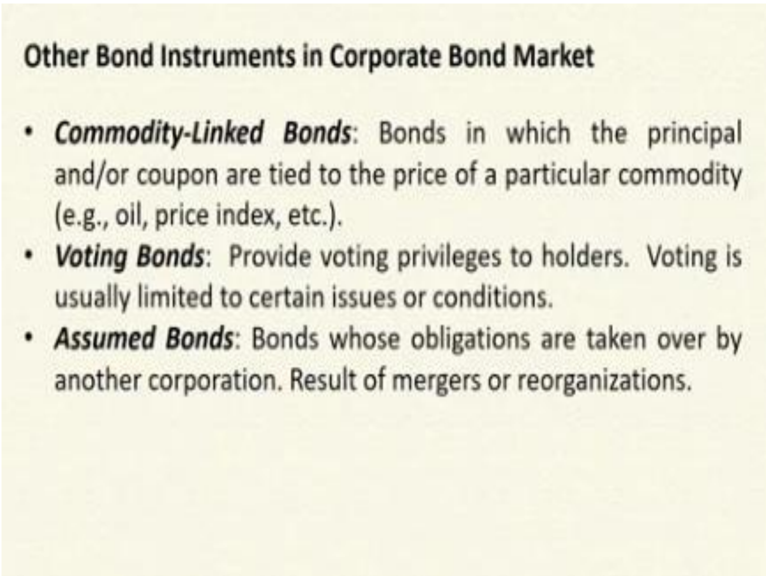
**Other Bond Instruments in Corporate Bond Market**

- A ***warrant*** is a security or a provision in a security that gives the holder the right to buy a specified number of shares of stock or another designated security at a specified price. A warrant that is attached to the bond can only be exercised by the bondholder
- ***Income Bonds:*** Bonds that pay interest only if earnings are sufficient
- ***Participating Bonds***: Bonds that pay a minimum rate plus an additional rate up to a specified maximum if earnings are sufficient.
- ***Extendable bonds*** give the issuer and/or the investor the option to extend the security's maturity.
- ***Credit Sensitive Bond***: This is a bond that has a coupon that varies inversely with the issuer's credit ratings.

Then, we have a warrant this is the kind of instrument which gives the holder the right to buy a specific number of shares of the stock or another designated security at a specified price. So, a warrant which is attached to the bond can only be exercised by the bond holder. Then we have the income bonds which pay the interest only if earnings are sufficient, then the participating bond so here the bonds so which can pay minimum rate plus an additional rate up to a specified maximum if the earnings are sufficient.

Then we have an extendable bond which gives the issuer or the investor to the option to extend the securities maturity the maturity period also can be extended that is called the extendable bonds. Then we have the credit sensitive bonds that are the bond which has a coupon that varies inversely with the issuers credit ratings. So obviously that is called the credit sensitive bond if the credit rating is going to be changed then the coupon rate also is going to be changed so that is called the credit sensitive bond.

**(Refer Slide Time: 28:13)**




Then, we have the commodity linked bonds commodity derivatives market, commodity market is quite prominent in today's context. So, there are certain bonds which are available with respect to the commodities also which are traded in the market that is called the commodity linked bonds. So, these bonds generally are defined in this way where the principal and coupons are tied to the price of a particular commodity. Let like oil or any kind of commodity index so these are basically defined as the commodity linked bond.

Then, we have voting bonds, which is basically available in US market mostly. It basically provides the voting privilege to the bondholders and it is usually limited to certain issues or the conditions. Then we have assumed bonds again it is applicable in US market. Here the bonds whose obligations are taken over by another corporations generally that happens in the context of mergers or the reorganizations of the company.

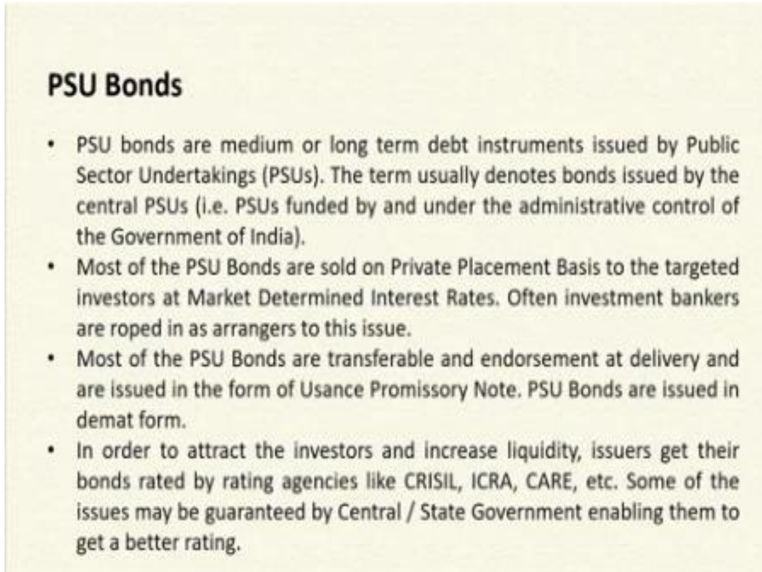
So, if that thing will happen then other company who is taking over the company, they will take care of that particular procedures or the payments of that particular security. That is called the assumed bonds these are another type of bond which are also traded in the market.

**(Refer Slide Time: 29:41)**


There are some specific bonds if you look at, let perpetual means they do not have any maturity date it will continue to pay the coupons during the life of the company. Then, we have AT1 bonds that is basically the additional tier 1 bonds these are type of unsecured perpetual bond that banks issued to increase their capital base generally to meet the Basel-III norms after the implementation of Basel-III.

Then AT2 bonds these are components of tier 2 capital of the banks. So, that is why the bank can go for this. Then REIT that is basically the investment fund on the real estate companies that is a special type of bond. Infrastructure investment trusts these bonds are issued to promote the infrastructure sector in India. Then green bonds generally they are used to raise the money for the climate and environmental projects if anybody and government or any corporate body are basically going for this kind of projects, they can raise the money through this green bonds.

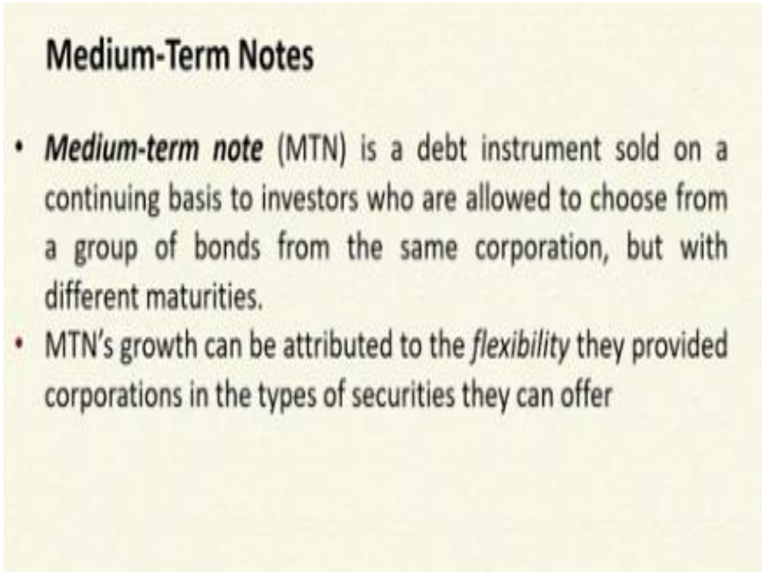
**(Refer Slide Time: 30:50)**




Then we have PSU bonds mostly the PSU bonds means these are issued by the public sector units and mostly the PSU bonds are sold in the private placement market. Sometimes the investment bankers are roped in but mostly it is issued in the private investment market and these are transferable and they are generally issued in the demat form. So, to attract more investors and to increase the liquidity the issuers get their bonds rated by the rating agencies like CRISIL, ICRA, CARE and all. And some of the issues also may be guaranteed by the central or the state governments to enable them to get better rating this public sector unit basically is bonds are issued in this fashion.

So, the PSU bonds are maturity period varies between 5 to 10 years the default rates are quite negligible, so sometimes the PSU bonds can be classified into 2 types taxable and tax free. And the major investors in the PSU bonds are banks, mutual funds, insurance companies, provident funds and the individuals generally they are the major investor in the PSU bonds.

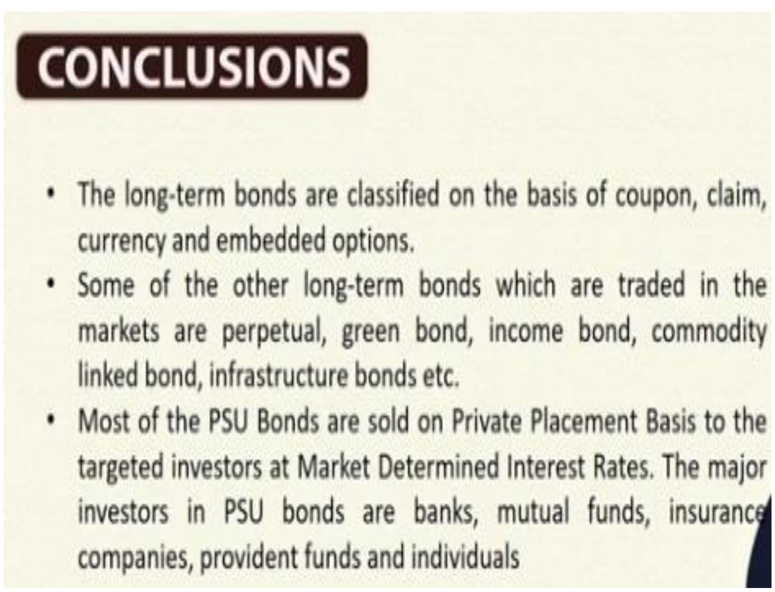
**(Refer Slide Time: 32:15)**




So, there is a medium term note which is mostly popular in the US market, so this is a debt instrument sold on a continuing basis to the investors who are allowed to choose from a group of bonds from the same corporation but with the different maturity. So, these medium-term notes growth generally can be attributed to the flexibility they provide in the type of securities they can offer in the different maturity basically this is available.

So, from the same corporation that is why people are sometimes inclined to invest in that whenever they find that their investment horizon period is matching with that particular maturity period these are called the medium-term notes.

**(Refer Slide Time: 33:01)**



So, what we discussed in today's session that the long-term bonds are classified on the basis of coupons, claim, currency, embedded options and all and some of the other long-term bonds which are traded in the market are perpetual, green bond, income bond, commodity linked bonds, infrastructure bonds etc. And the most of the PSU bonds are sold in the private placement basis and the major investors in the PSU bonds are banks, mutual funds, insurance companies, provident funds and individuals. So, this is the overview of the medium and the long-term bond market in India and as well as U.S.

**(Refer Slide Time: 33:43)**


So, these are the references you can go through for the comprehensive discussion on these.

Thank you