Management of Fixed Income Securities
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Module No # 06
Lecture No # 27
Long – Term Government Bond Markets

Welcome back, so in the previous class, we discussed about the characteristics of a short-term government securities market. So, in today's session will be discussing about the long-term government bond markets which are operated in India and as well as U.S.

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So, what basically we are going to discuss today which are those instruments, which are available, particularly the long-term instruments which are available in the government securities market in India. And which are those long-term government securities which are traded in the U.S. market. Why we have taken India and U.S. because India is we have considered as a part of the emerging economy and U.S. we have considered as a developed economy.

So, in this context we have basically, try to examine although there are many other countries there are many other types of instruments, but we have considered largely to these two economies for a comparative purpose.

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So, what are those keywords will you will or will discuss or will go through that, is the fixed rate bonds, floating net bonds, inflation index bonds, sovereign gold bonds, treasury notes, treasury bonds. So, these are the different type of instruments which are traded in this particular market, and that vary from one particular economy to another economy. And there are certain basic differences in terms of their characteristics whenever this kind of keywords, are used.

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So let us see, that what is basically the situation with reference to the Indian government securities market specifically the long-term government securities market. Already in the previous class we have discussed that it is a kind of benchmark market and the yield what basically we calculate from this market that can be used as a reference point for yield calculation in the other markets.

So that's why it is very much important to understand these characteristics of the other long-term securities which are traded in this particular segment and it is a dominant market. If you look at the figures then government dated securities is a dominant market in India, in comparison to the other long term corporate funds.

Let us see about the existing structure or the organization of the dated government securities market in India, who are those players obviously, who is issuing this Reserve Bank of India. And who are the major investors they are basically the commercial banks, primary dealers, other institutional investors like the insurance companies and other financial institutions also they are also are allowed to invest in this particular government securities market.

Foreign institutional investors also are allowed to participate in this particular market within a particular quantitative limit which prescribed from time to time by the Reserve Bank of India. FII's that means are allowed to invest in this particular segment but there is some kind of limit has been fixed for them because there is no such kind of unlimited positions they can take in this particular segment.

And the corporate sector, also sometimes buy or sell the government securities to manage their overall portfolio risk, so that is they can also invest in this particular government securities. So, these are the different players which are always or major players who are basically participating in this government securities market.

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So, whenever we characterize or classify this particular market in the different segments, on the basis of the investors who are participating in this particular segment this market is classified into different segments. What are those? Broadly this market is classified into 3 segments; one is wholesale, then middle segment, then you have the retail segment.

And whenever you talk about the wholesale market with reference to the dated government securities this basically comprises the players like banks, financial institutions, insurance companies, primary dealers, mutual funds; so, these are the big investors. Their positions in the market are quite large, so that is why we consider that market is a wholesale market segment.

Then we can see about the middle segment, in the middle segment we basically bring this companies or the corporates the provident funds, NBFC and the cooperative banks. To some extent cooperative banks are also allowed to participate in this particular segment, but their volume of transactions is not at par with the other commercial banks or the primary dealers who are basically the part of the wholesale segment. So, these are the major investors who comes under the middle segment.

Then we have the retail segment these are basically consisting of the individuals mostly it is consisting of the individuals and some non-institutional investors. Who are reasonably quite small, size is quite small, so these are basically comes under the retail segment. So, this is the way basically the markets are classified in India wholesale, middle and the retail; and these classifications are made on the basis of the investors who are participating in this particular market.

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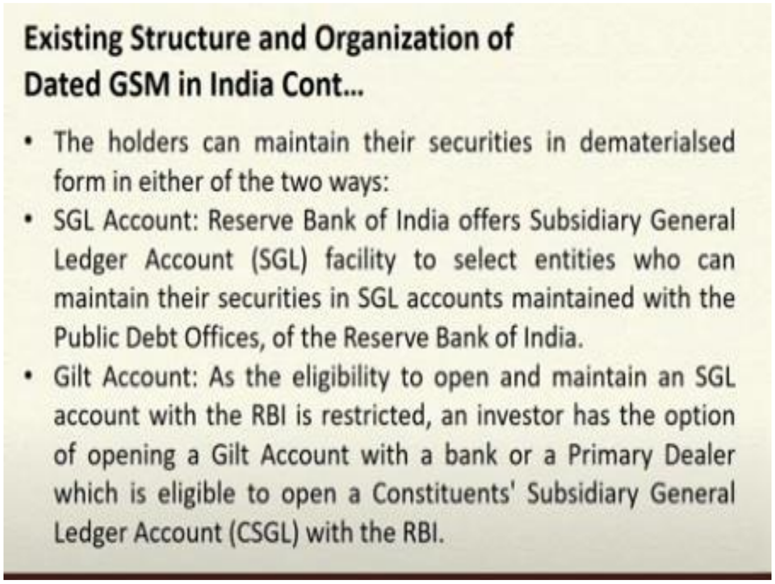

Then let us see that how basically these particular investments they make. The holders or the investors can maintain their securities in the dematerialized form either in 2 ways. So, like other investment in the stock market and other markets this would have a demat account kind of thing, or a dematerialized form only there is no physical form which is available everything is done through in the dematerialized form.

But here whenever we talk about the stock market, we open the demat account with the different stock brokerage firms, but whenever you talk about the dated government securities these are basically carried out in the different way. Here what basically the process here the process is basically the investors should have a SGL account that is called the subsidiary general ledger account.

This would have an SGL account and that account will be opened with the Reserve Bank of India. The Reserve Bank of India basically offers that account and that account only can be opened by certain specific organizations, specific entities. That's why this facility is available to some select entities who can maintain their securities in the SGL accounts, maintained with this public debt, offices of the reserve bank of India.

Mostly the banks or the primary dealers they are basically eligible to open this SGL account and the trading of the government securities or the transactions of the government securities are done through this SGL account. Then there are some other investors, also they are allowed to invest but they cannot directly invest with the Reserve Bank of India through this SGL account for them they have a Gilt account.

Because the eligibility to open and maintain this SGL account with RBI is highly restricted, in that case the investor has the option to open a Gilt account. And where they can open the Gilt account, they can open this Gilt account with a bank or a primary dealer; who is eligible to open this SGL account with RBI.

So, whenever you are investing in the government rated securities and you are not a bank or you are not a primary dealer, so in that particular case you have to rely upon the particular entity who can open this SGL account or who are eligible to the SGL account. And you will open a Gilt account with them and on behalf of you that particular entity will help you to invest in this particular dated government securities.

So that is the practical way the investment in the government securities are done in India. So here the important thing is Gilt account and the SGL account. Through SGL account the commercial banks and primary dealers do the transactions and the through the Gilt account the other individuals or other kind of investors who are interested to invest in this market they can always take the help of this. So, this is the way basically the investors can participate in this particular segment.

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Then let us come to the different types of long-term securities which are traded in India. There are different types of long-term securities are traded in India. You have a bond where the coupon is fixed that is called fixed rate, you have floating rate bonds, you have zero coupon bonds, your capital index bonds, your inflation index bonds, your bonds with embedded options.

You have a kind of special kind of instrument that is STRIPS that is separate trading of registered interest and principal of securities, you have sovereign gold bonds, which is now prevailed we have savings bond, we have state deployment loans. So, there are different type of instruments let us see one by one what exactly these instruments are how these instruments are defined.

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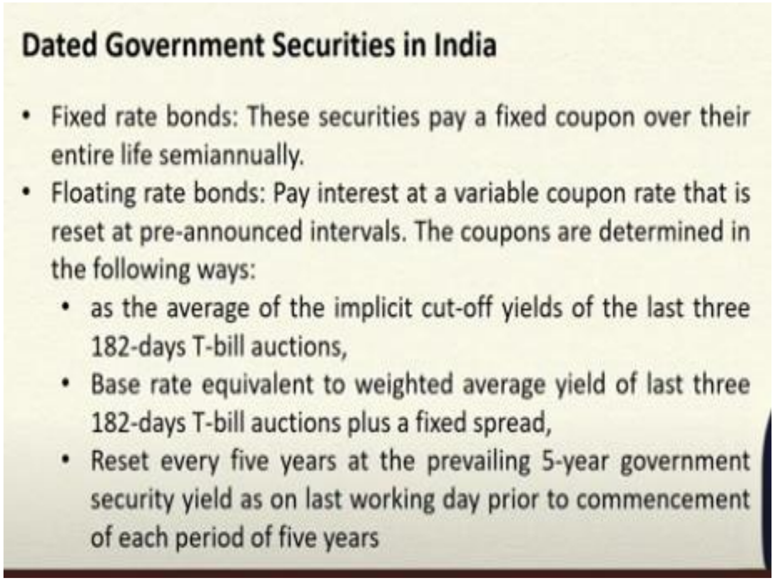

What do you mean by fixed rate bond, the fixed rate bond basically pays a fixed coupon over the entire life of this particular bond. And the period of the coupon payments is semi-annually generally, the semi-annual coupons will be paid at any point of time the coupon rate is not going to be changed and the coupon will be paid up to the maturity. So, these are called the fixed rate bonds, these are coupon barrier, all the data securities are coupon bearing bonds and the coupons are fixed over the life of the bond.

Then we have a floating rate bond here whenever by name itself you can understand what do you mean by the floating rate bond. The floating rate bonds basically pay the interest at a variable coupon rate that is reset at a pre announced intervals. When this new coupon rate will come that basically pre-announced periods are mentioned before and these particular dates are announced before and accordingly the new coupon rate can be reset.

And how the coupon rates are decided, the coupon rates basically are decided in India if you look at it can be as average of the implicit cut off rate of the last 182 days T-bill auctions. Every 6 months if the coupon is going to be changed then that thing is decided from 6-month treasury bills 180 days means it is more or less a 6-month treasury bill. So, the last 3 years average of the 182 days treasury bill yield implicit cut off rate they consider to decide the coupon of that particular period of this floating rate bond.

Or it can be also equivalent to the weighted average yield of the last 182 days treasury bills + a fixed spread because it is long term in nature, is relatively riskier than the short-term instruments like treasury bills. So, because of that they can add some premium into that some spread into that that is the addition of the weighted average yield of last 382 days T-bill auctions and accordingly the coupon rate of that particular floating rate bond can be decided.

Or it can be also reset every 5 years or the prevailing 5 years government security yield as on last working day prior to the commencement of each period of the 5 years. So, the 5 years bonds which are traded in the market that yield also can be used to decide the coupons of that particular floating rate bonds. So, any of the methods can be used to fix the coupon rate in the periodical basis by the Reserve Bank of India for this dated government securities. So, this is about your floating rate bonds.

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Then we discussed about zero coupon bond that already you know that and let me tell you also in India, the floating rate bonds are also not quite popular. People are more inclined to invest in the fixed rate bonds. And the zero-coupon bonds where there is no coupon and it is issued at a discount redeemed at par that is also not favored in the market. You will not find much zero-coupon bonds, long-term zero-coupon bonds which are issued by the government in the Indian market, because there is no such demand.

People are not that inclined to invest in that type of security, so because of that this issuer also is not very much inclined to issue that kind of security, that so that is also not favored. India also has started a bond called the capital indexed bond, so here what will happen the principal amount is linked to the inflation index**,** the principal amount is only will be linked to the inflation index if the inflation will be changed your principal amount also will be changed. So that is called the capital index point that is also not quite popular in the Indian market.

And we have the inflation index bonds; here what is happening what is the difference between the capital index bond and the inflation index bonds. In the case of inflation index bonds both principle and coupon flows are protected against the inflation, both coupon and the principal what is fixed for this particular bond they are protected against the inflation.

Reserve bank of India also issues some of the bonds which have some call and put features, all of you know that there is a callable bond there is a puttable bond. If the bond has a call feature that after a certain point of time the bond the issuer can call back that bond, that buy back that particular bond from the investor right. So, there is a risk involved in that that is called the call risk.

And like that the bond can have a put feature where, it will give the right to the bond investor to sell that bond back to the issuer so there is a put risk also involved in that particular context. So how the call risk and put risk is going to affect the total return of the bond or how they return total return what you are expecting that is going to be deviated from the actual return what you are getting that will be discussing further.

But there are certain bonds which are issued by the reserve bank of India, which can have the call feature or the put feature. Then with the STRIPS, STRIPS mean it is a separate zero-coupon bond created by breaking down the cash flows of a regular coupon paying government security. So that means one regular coupon bearing government security can be converted into many zero-coupon bonds, so that is what basically we call it the STRIPS.

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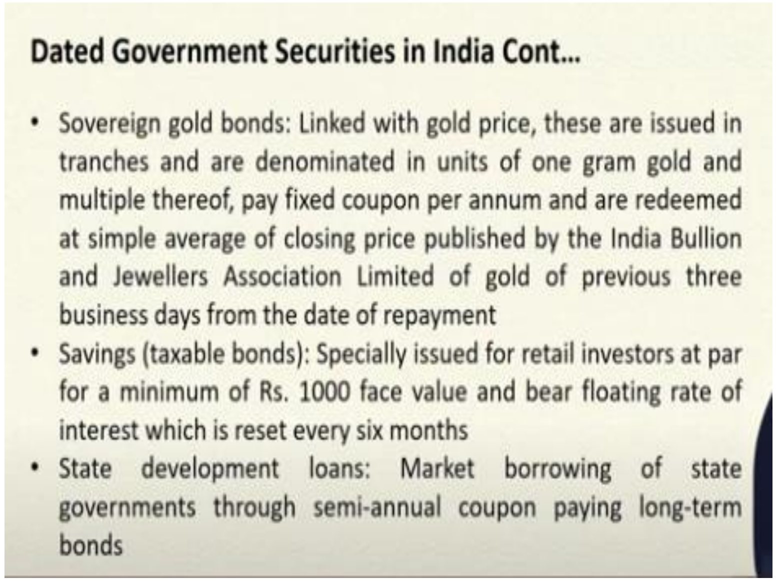

Then we have some other bonds also recent some 2-3 years back we have in India, we have started the sovereign gold bonds, here what happens here it is basically linked with the gold price. These bonds generally are issued in different tranches and denominated in units of one gram gold and multiple thereof; it pays a fixed coupon per annum and redeemed at a simple average of closing price published by the India Bullion and Jewelers Association Limited of the gold of the previous 3 business days from the date of repayment.

That means if you have invested in that particular type of bond periodically you will get a coupon. But your value of money what you will be getting in the end that will be decided on the basis of the market rate of the gold. So, there will be a capital appreciation if the gold price has increased, there will be a depreciation if the gold price has declined. So that is what basically what you can, that’s why the sovereign gold bonds are linked to the price of the gold which is prevailed in the market.

So, then we have a savings bond it is generally specifically issued for the retail investors at par for a minimum of 1000 face value and bears a floating rate of interest which is reset every 6 months basis. And generally, these are taxable whatever interest rate you get from this that is taxable or sometimes also some bonds which are traded in the market these are non-taxable that depends upon the government's policy.

That what are the whether these are the taxable bonds or the non-taxable ones like if you look at in U.S. market, we will discuss about more on that the municipal bonds are not taxable. Then we have a state development loans; so here by name itself if you can charge the market borrowings of the state government through the semi-annual coupon paying long-term bonds that is called the state government bonds.

The state government also can go to the market for raising the money, so in that case the state governments basically go for the market borrowing through the semi-annual coupon paying the long-term bonds, so these are issued by the state government. So, these are the broadly different type of bonds which are available in the long-term government securities market in India.

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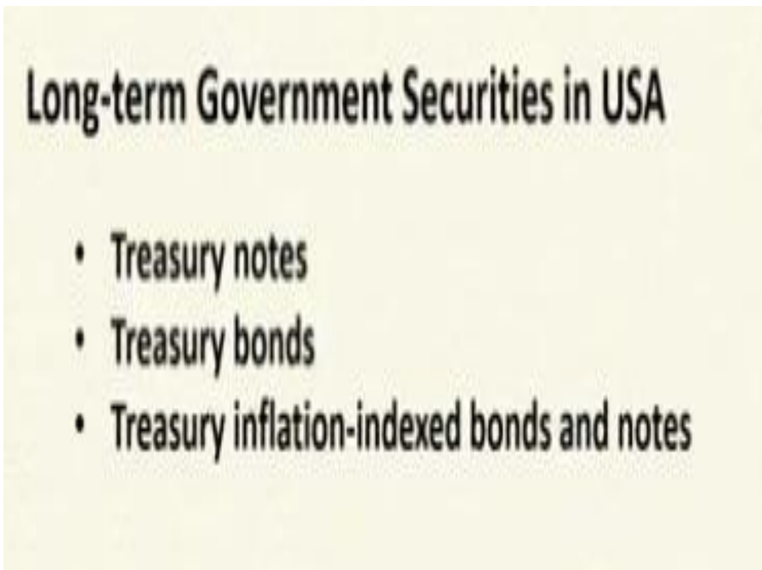

Let us see that what are those instruments which are available in U.S. U.S. also more or less the, if you see the characteristics more or less, they are same not much differences. You will find some names which are different from the bonds which are traded in the Indian market. In U.S we call the treasury notes, treasury bill's name is same in both the cases which are short term but in the long-term case we can call the treasury notes, treasury bonds, or treasury inflation-index bonds and notes like that.

So only the nomenclature wise there is some differences but the characteristic size wise you will not find much differences, in terms of the bonds which are traded in the Indian market and the U.S market.

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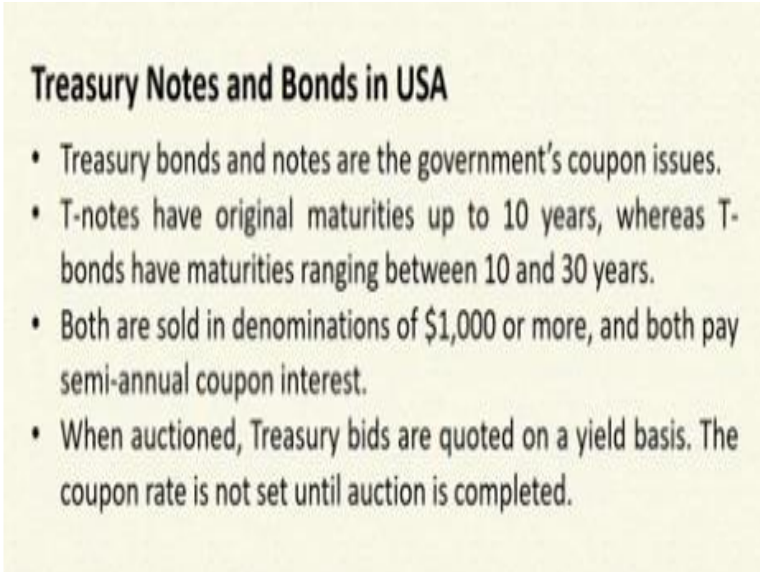

So, treasury notes and bonds these are the coupon bearing bonds, these are the coupon bearing bonds and the t-notes the treasury notes have the original maturity up to 10 years. But if you talk about the treasury bonds, they have the maturities which can range between 10 to 30 years. So, the maturity period of the treasury bonds is larger than the maturity period of the treasury notes. In India also the term to maturity of the long-term debt securities can go up to 30 years.

So, both treasury notes and bonds they are sold in denominations of the 1000 dollar or more and they both pay the semi-annual coupon interest. The coupons are paid basically semi-annually, India also you might have observed the coupons are basically paid semi-annually. And the whenever the treasury bills are issued the price or yield of that particular treasury bill is decided through the auction process right.

So, when this particular treasury notes or bonds are auctioned, they are always quoted on the yield basis, there is another one that is called the price basis we will discuss on that. But generally, in U.S when the treasury notes and bonds are issued, they are basically always quoted on the basis of the yield. The coupon rate is not set until the auction is completed, so the coupon rate of that particular bond will be decided once the auction is completed.

They will find that they will decide that what will be the yield of that particular bond accordingly the pricing and the other type of activities will take place that basically you have to keep in the mind.

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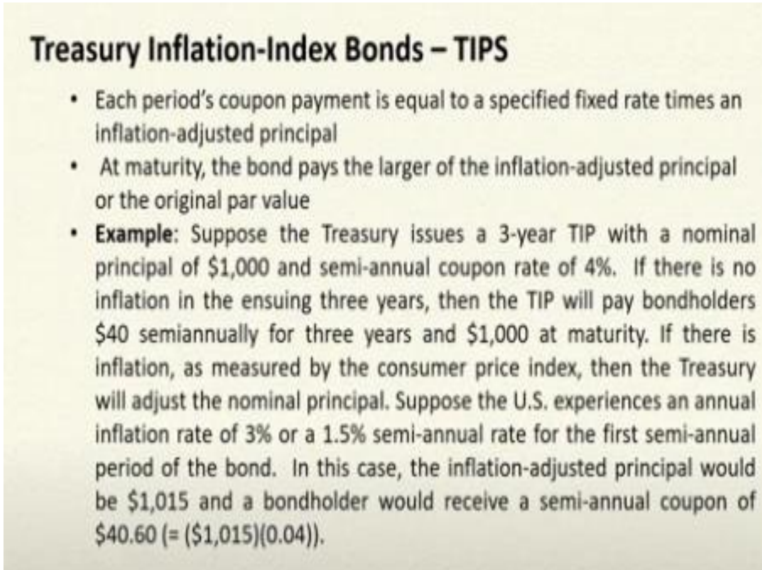

Then we have treasury inflation index bonds what we call the TIPS, what do you mean by this treasury inflation index bonds. So, each period coupon payment is equal to a specifics fixed rate times on inflation adjusted principle, so at the maturity the bond basically pays the larger of the inflation adjusted principle or the original par value.

Let us take this example suppose the central bank or the treasury issues a 3-year tips the treasury inflation index bonds with a nominal principal of 1000 dollar and a semi-annual coupon rate of 4%. If there is no inflation in the ensuring 3 years then the tip will pay the bond holders 40 rupees semi-annually for 3 years right and 1000 rupees or 1000 dollar at the maturity.

If there is inflation which can be measured through the consumer price index what the U.S is using, in India also we are our inflation is measured through the consumer price index or all the calculations basically are based on the consumer price index. So, if there is an inflation which is measured through the consumer price index, then the treasury will adjust this nominal principle of the 1000 whatever you have paid.

Suppose the U.S experience an annual inflation rate of 3% or 1.5% semi-annual rate. For the first semi-annual period of the particular bond, the inflation adjusted principle would be 1015, 1.5% is the inflation. So, then the inflation adjusted principle will be 1000 you have to adjust it with respect to the 1.5% inflation then 15 dollars will be added into that, then that is 1015 dollar.

And how much coupon the bond holder will receive, the bond holder will receive basically your 1015 into 0.04 instead of 1000 into 0.04, they will be getting the coupon on the basis of the inflation adjusted principle that is 1015 into 0.04 that is 40.60 is it clear. So now what is happening if there is any inflation which is going on; on the basis of the CPI then your coupon payments also get affected by that, so that is called the treasury inflation index bonds, which is also issued by the government in the U.S market.

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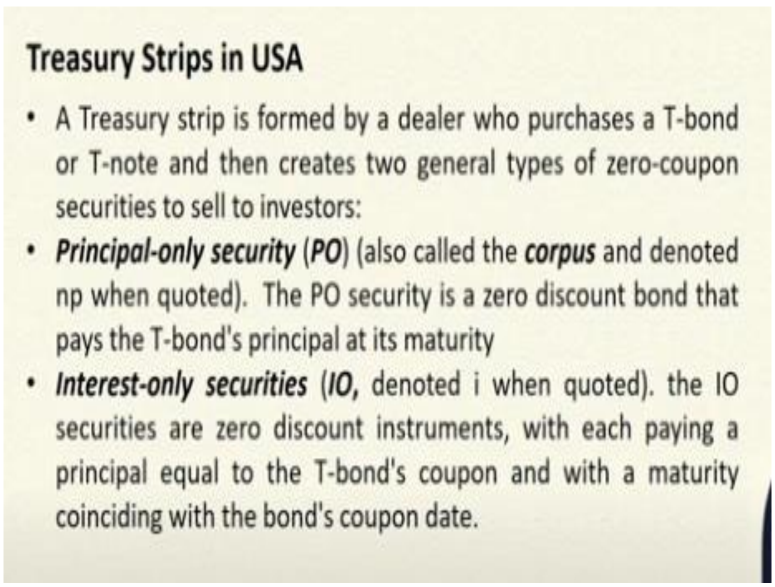

So, we have a treasury strip in U.S also like in India we have; the treasury strip is formed by a dealer who purchases a treasury bond or a treasury note, and then creates a 2 general type of zero-coupon securities to sell the investors. There are 2 types of securities can be created one is principle only security what we call it the PO (is also called the corpus, and denoted np when it is quoted) in the market. And the PO security is a zero-discount bond that pays the treasury bonds principle at its maturity.

And also, you can have an interest only securities IO (which is denoted, as I when quoted) in the market these securities are again the zero-discount instrument with each paying a principal equal to the treasury bonds coupon and with a maturity coinciding with the bond's coupon date, so that is called the interest only securities. So that is why they have stripped that particular data security like treasury bonds and treasury notes into different type of zero-coupon bonds and accordingly these particular bonds are traded in the market.

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So, what we have seen here the major players in the government securities market in India include Reserve Bank of India, commercial banks, primary dealers and all. The investors in the market can be classified into different segments like wholesale segment, middle segment, retail segment. And the segments are decided on the basis of the investor's characteristics. And the different type of long-term government securities which are traded in the market these are classified on the basis of coupon payments, maturity and as well as the other external conditions like inflation and all.

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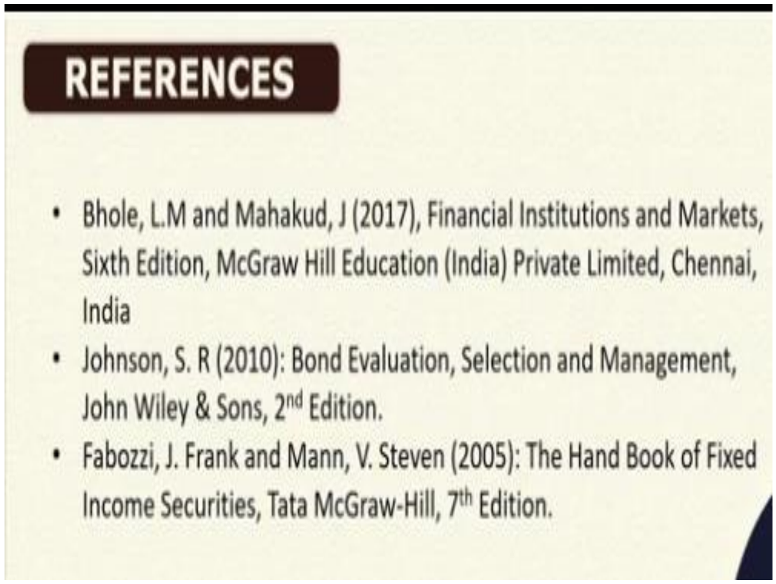

So, these are the references what you can go through for the more detailed discussion on this. Thank you.