**Treasury management**

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**1. Explain the concept of duration in bonds. Select at-least two bonds each from the below bonds with long term and short-term maturities (eg 10 years as long term bond and 1-3 years as short term bond) and calculate their duration etc. Suggest which of these will outperform/ underperform in declining and rising interest rate scenarios. (Assume interest are being paid annually). You can use excel function (DURATION) to calculate duration**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Symbol** | **Coupon rate** | **YTM** | **Face value** | **Last traded price** | **Maturity date** |
| **NHAI** | **8.3** | **5.6384** | **1000** | **1235** | **25-Jan-27** |
| **NHAI** | **8.2** | **5.6276** | **1000** | **1133** | **25-Jan-22** |
| **SBIN** | **9.95** | **7.886** | **10000** | **11445** | **16-Mar-26** |
| **IFRC** | **8** | **5.1262** | **1000** | **1137** | **23-Feb-22** |
| **IIFCL** | **8.66** | **6.034** | **1000** | **1152.11** | **22-Jan-24** |
| **HUDCO** | **7.64** | **5.9595** | **1000** | **1180** | **08-Feb-31** |
| **IIFCL** | **8.91** | **5.8239** | **1000** | **1350** | **22-Jan-34** |
| **M&MFIN** | **9** | **9.0053** | **1000** | **1022.01** | **06-Jun-26** |

**Answer**: Bonds are long-term debt instruments/fixed income (debt) instruments issued by government agencies or big corporate houses to raise large sums of money. They can also be referred as negotiable promissory notes that can be used by individuals, business firms, governments, or government agencies. Bonds issued by government agencies or public sector

companies are generally secured and those issued by private sector companies may be secured or unsecured. The rate of interest on bonds is fixed, and they are redeemable after a specific period. The expected

**2. Below excerpts are from the balance sheet of a bank.**

**Balance Sheet for Hypothetical Bank**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Particulars** | **Assets** | **Duration** **(macaulay)** | **Particulars** | **Liabilities** | **Duration** **(macaulay)** |
| **Current Assets** | **800** | **12 Years** | **Current liabilities** | **500** | **5 Years** |
| **Fixed Assets** | **200** |  | **Other Liabilities** | **200** |  |
|  |  |  | **Equity** | **300** |  |
|  | **1000** |  |  | **1000** |  |

**1. What kind of risk you can able to demonstrate out of this balance sheet (The current market interest rates are 6%).**

**2. The bank wants to reduce this risk. Explain what tools are available for the bank to mitigating these risks?**

**Answer**: Interest Rate Risk (IRR) is the risk involved in an interest bearing asset of a bank due to the probability of changes in the asset's value that result from the variability of interest rates. It is a risk to the earnings or market value of a portfolio due to uncertain future interest rates. The economic value of a bank’s assets changes with the variation in interest rates. IRR can be

categorised in different

**3. Case Study:**

**The treasury team of XYZ bank is expecting the interest rates to increase in near future and hence decrease in the investment portfolio. The average YTM of the bonds in its portfolio is 8% and it is expecting it to go up to 9%. The three months Libor is currently quoted at**

**a. Explain how interest rate futures help the bank to hedge this risk in short term. Explain this with various interest rates scenarios.**

**b. In another transaction this bank has entered into a 3x9 month forward. The three months MIBOR is 4% and 1 year MIBOR is at 5%. At what price the bank should quote this forward to the client? The markup spread of the bank is 1%.**

**Answer**: a) Interest rate risk is always associated with interest-bearing assets. As the interest rate fluctuates it changes the price of the asset which can go either way and create profit or loss according to one's position of trade.

Let say when an entity is holding a bond with a coupon of 3%. When the market return would go up to 3.5% then the price of a 3% coupon bond reduces as the return is less than the market return. This brings an opportunity loss Its sample only

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