equaliFi ACADEMY

FII

CERTIFICATE IN
FIXED-INCOME INVESTING

Session 3 - Fixed Income Investing

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Types of Risk

When we discuss the term ‘risk’, many a times, we lack a perspective on what exactly we mean to convey by the term.

There are four major types of risk:

- Interest Rate
- Credit
- Concentration
- Liquidity

Risks Associated with Bonds / Bond Funds

Interest Rate Risk

Credit Risk

Liquidity Risk

Concentration Risk

Types of Risk

If we look at it granularly, there are multiple types of risk:

- Interest Rate Risk
- Reinvestment Risk
- Inflation Risk
- Concentration
- Credit/Default Risk
- Rating Downgrades
- Liquidity Risk
- Event risks
- Legal risk
- Foreign exchange risk
- Counterparty Risk

Interest Rate Risk

It is the degree of variability of returns in a bond or bond fund due to changes in interest rates in the market.

If the returns plotted on a graph look like a straight line, it is a 'straight line' return with zero or low volatility, with returns coming from interest accruals only, not market price movements.

If the returns plotted on a graph look like an ECG report, it is volatile returns, which is due to price movement in the market resulting from interest rate variations.

Conceptually, upside movement i.e. returns higher than average is also volatility. However, perception-wise, investors don't consider this 'volatility' when the term is discussed.

Deviations from long term average

Investors refer to downside volatility i.e. returns lower than average when the term is discussed.

In a trended upward or trended downward market, when the returns are plotted against the average line, the deviations from the average look optically lower.

This is because the long-term average line itself is steadily moving up or down and the deviations look optically smaller.

When the market itself is volatile, the long term average line adjusts slowly to the new level, and deviations are higher.

Risk Factor

Volatility resulting from interest rate movements is a risk because If volatility is high and unfortunately it is adverse, returns would be impacted accordingly.

If the investor has to exit earlier than intended, due to cash flow requirements, interim volatility becomes relevant.

If an asset class, historically, has low volatility, it is expected that delivered returns would be somewhere around the historical trend.

This is not to say that past performance is an indication of the future. But, before taking the investment decision, the investor should look at some basic parameters. Historical volatility is one of them.

Credit Risk

Credit risk is the risk of non-payment of dues.

This risk factor is typical of debt. Equities are perpetual instruments, hence there is no question of payment on maturity. Dividends on equity are non-contractual.

Credit risk is an integral part of debt investments. Apart from perpetual bonds, all bonds fall due for maturity. Apart from zero coupon, all bonds have to service interest payments.

The return from a bond, in the form of coupon or yield, includes compensation for the credit risk taken. Higher the credit risk i.e. probability of non-payment of dues, higher the return.

Credit Risk

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Default Risk

Issuer could fail to meet debt obligations in a timely manner

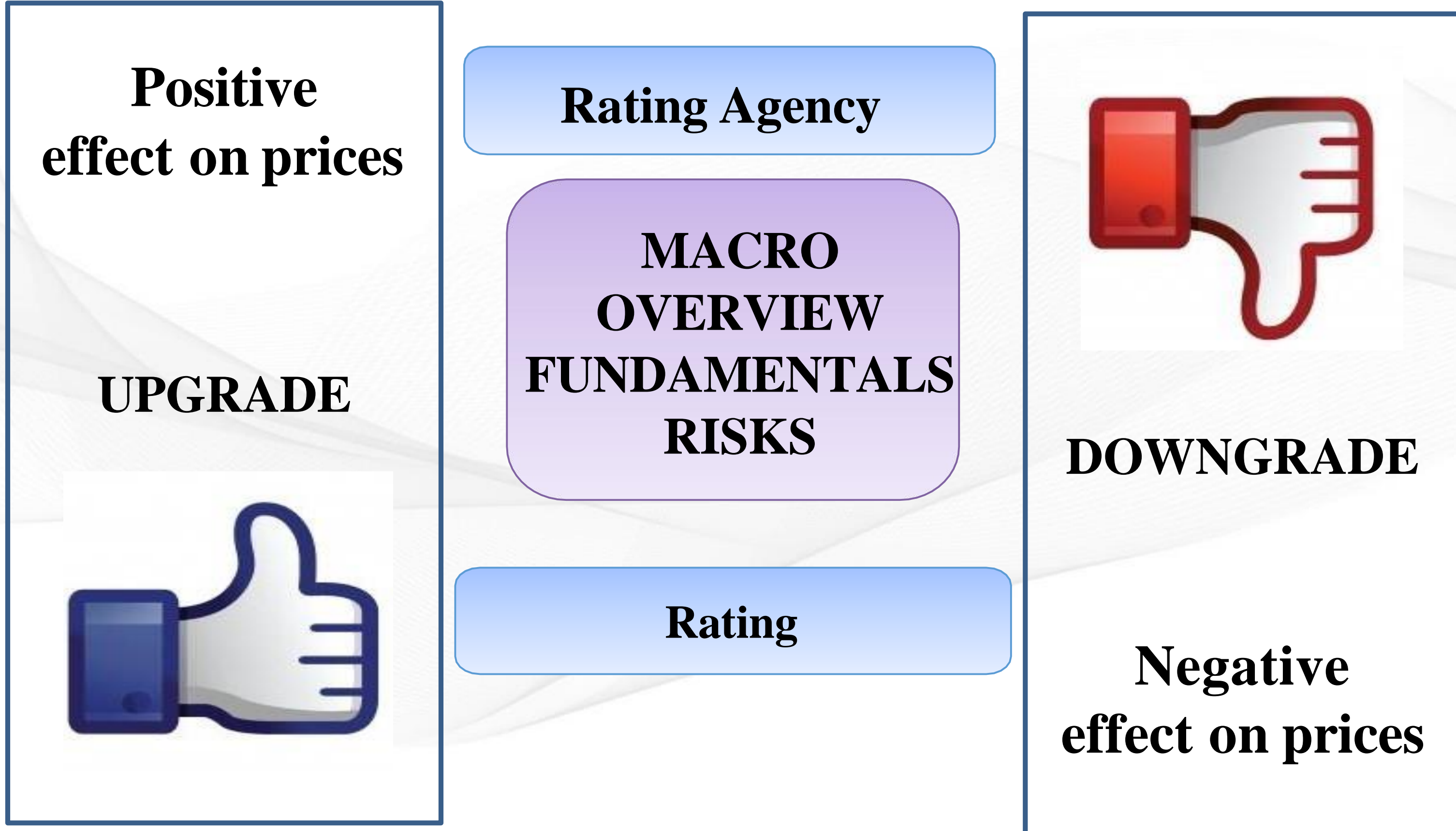
Credit Spread Risk

Risk premium required for particular corporate bond (or bond class, sector, industry, or economy) increases, leading to increase in interest rates offered for those bonds

Downgrade Risk

Rating agency could lower rating on a bond after conducting analysis, increasing the credit spread, causing yields to go up and prices to go down

Monitoring Credit Risk



Extent of Credit Risk

Credit risk can be ‘graded’ and investor / fund manager can undertake credit risk as per risk appetite of investor / mandate of the fund.

Credit risk cannot be done away altogether. Theoretically, even sovereign debt i.e. bonds issued by the Government of the country, carries a miniscule credit risk.

However, sovereign debt is the closest to, or proxy for, zero credit risk.

For non-sovereign debt e.g. corporate bonds, the credit rating is the indicator for credit risk, which is referred to as ‘graded’ risk, as per the credit rating .

Risk Factor

Credit risk is a risk because if the issuer does not pay up on maturity, returns are impacted adversely to the extent of exposure to that bond.

There is a legal recourse for recovery, but that is time consuming.

If there are collaterals to the bond that are liquid and saleable without legal recourse, risk is lower to that extent as recovery is faster.

Example: charge against assets is subject to legal recourse. Loan against shares is a relatively liquid collateral.

In the secondary market, deals are undertaken with counterparties.

While credit risk is the risk of non-payment of dues by the Issuer of the bond, counterparty risk is the risk of non-payment of dues by the counterpart in a secondary market deal.

It could be either non-payment of dues on sale of a security or non-delivery on purchase of a security.

Extent of Risk

This risk is more relevant for investors undertaking secondary market bond deals on their own.

For investments through Mutual Funds, the deals are undertaken by professionals.

If the Mutual Fund itself is considered as a counterpart, then the instruments are held on behalf of the unit-holders by the Trustees. The AMC is the manager, it does not own the securities.

The best mitigant for this risk is routing it through an Exchange (e.g. NSE/BSE) where there is a process and structure for managing such incidents.

Concentration Risk

This is the risk of lack of adequate diversification in the portfolio.

To the extent there is a lumpy exposure in the portfolio, any kind of risk in that security e.g. interest rate or credit, gets concentrated to that extent.

Prior to taking concentrated exposure in an instrument, the historical volatility or credit data gives a perspective.

However, markets being uncertain, diversification is a basic tenet of portfolio construction.

There is a basic difference in equity and debt portfolio construction and impact of diversification.

In equity, the objective is to earn from the price appreciation. Hence if the portfolio is too diversified, say across 100 stocks, the benefit of price appreciation of one stock in the portfolio would be limited.

In debt the objective is to earn from accruals. Price appreciation is there, but limited. Hence there is nothing as over-diversification in a debt portfolio.

If there are say 100 bonds in a debt portfolio, the volatility and credit risk is being diversified to that extent.

Measurement of Risk – Volatility due to interest rate movements

The most popular and simplest measurement of volatility is standard deviation (SD).

SD measures the deviation of returns from the mean.

Analysts look at performance of a fund not just in terms of returns but risk- adjusted returns e.g. returns adjusted for SD.

Higher the risk-adjusted return, the better is the fund.

Reason is, higher the volatility, the returns expected are higher, to compensate for the volatility.

The credit rating is taken as the proxy for the credit risk of the portfolio.

Higher the top-rated instruments in the portfolio, better the quality of the portfolio and vice versa.

In this context, sovereign and quasi-sovereign exposures and top-credit- rated exposures (AAA/A1+) may be clubbed together.

This represents top-rated exposures, though sovereign risk is perceived to be better than AAA rated corporate risk.

Measurement of Risk - Concentration

A bond portfolio invested in only a handful of instruments has a higher concentration risk and vice versa.

There is no definition of concentration; as a ballpark, a portfolio of 3 to 5 bonds is concentrated, a portfolio of 10 to 15 bonds is adequately diversified.

As discussed earlier, there is no ‘over-diversification’ in a bond portfolio.

A highly concentrated portfolio is not possible in Mutual Funds as there are SEBI rules on diversification. It is possible in a PMS portfolio.

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Mitigation of Risk - Volatility

Investors can mitigate volatility risk by selecting less volatile sub-asset- classes.

Long bond funds e.g. Income Funds or Dynamic Bond Funds are expected to be relatively more volatile because they have a higher interest rate risk.

Shorter end funds e.g. Liquid Funds or Ultra Short Term Funds are relatively less volatile as these are at the shorter end of the yield curve representing lesser sensitivity to interest rate movements.

For direct exposure to bonds, hold-till-maturity is a good strategy because in that case volatility is only in the interim period.

Mitigation of Risk - Credit

Investors can look at the portfolio credit quality and decide accordingly.

In Mutual Funds, the fund mandate delineates the credit quality of the portfolio.

Investors with risk appetite, seeking a higher accrual from elevated interest rates, can take exposure to credit risk funds i.e. funds with exposure to less than top rated instruments.

Investors with lesser appetite for credit risk can go for Government Security Funds or top-credit-rated Corporate Bond Funds.

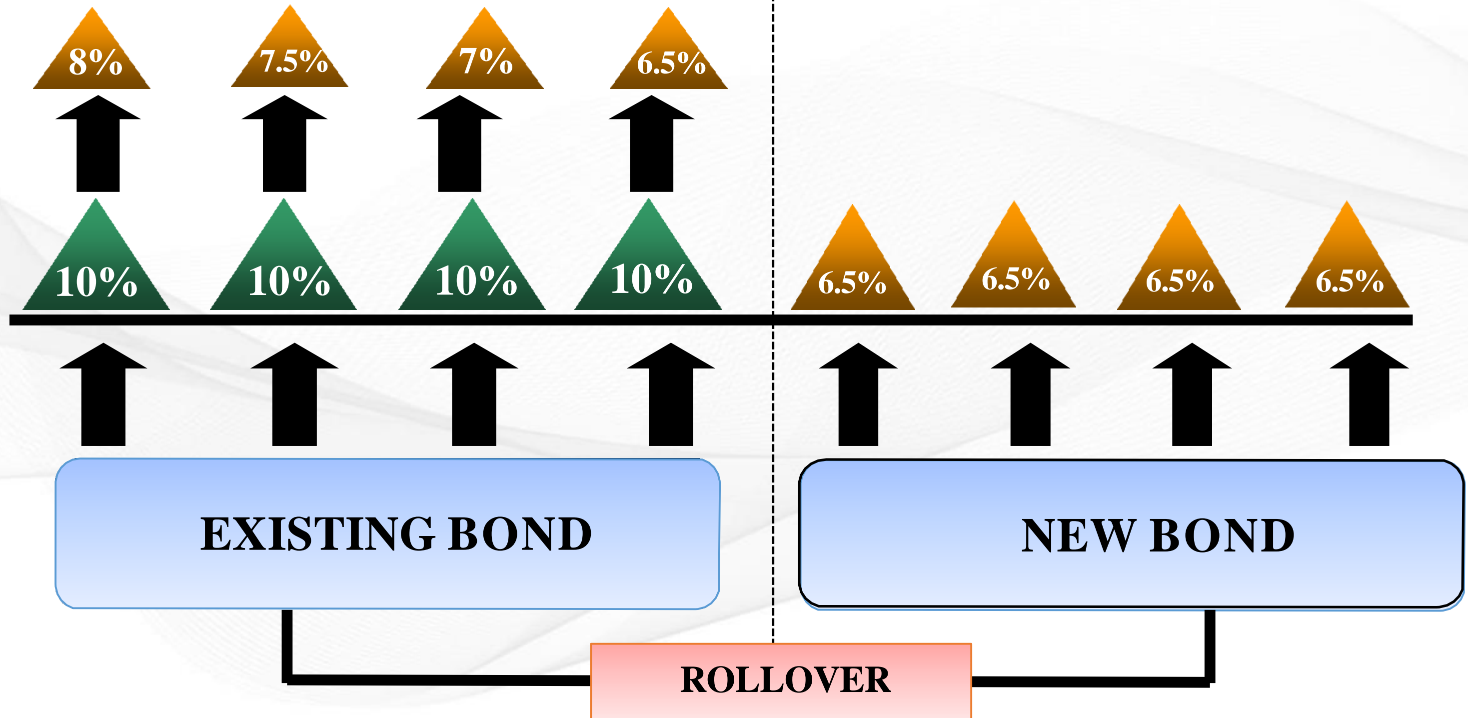
The best way to mitigate counterparty risk in secondary bond trades is to deal through an Exchange e.g. NSE/BSE.

The deal may either be done through the Exchange system, which is anonymous order-driven.

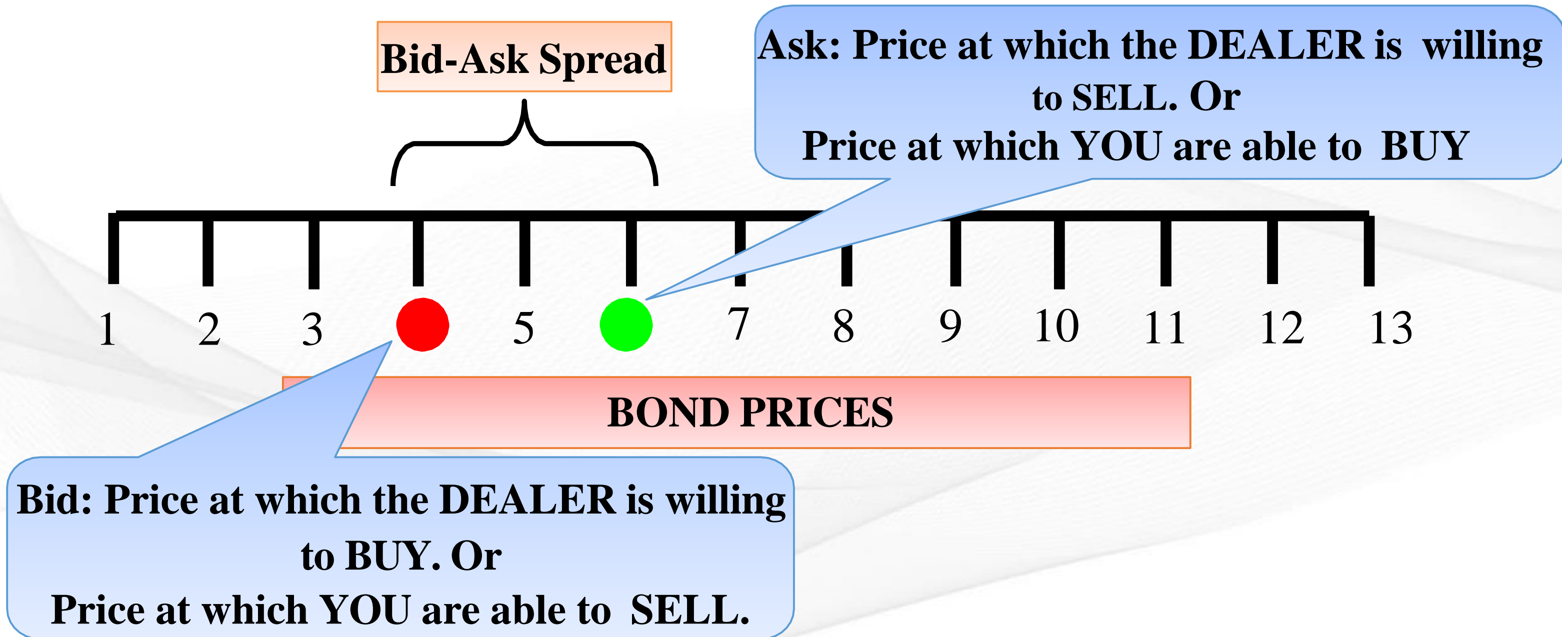
If it is a one-on-one deal negotiated over phone i.e. not through the Exchange system, the execution may be done through the Exchange settlement mechanism to do away with counterparty issues.

In Mutual Funds, professionals are taking care of it.

Reinvestment Risk

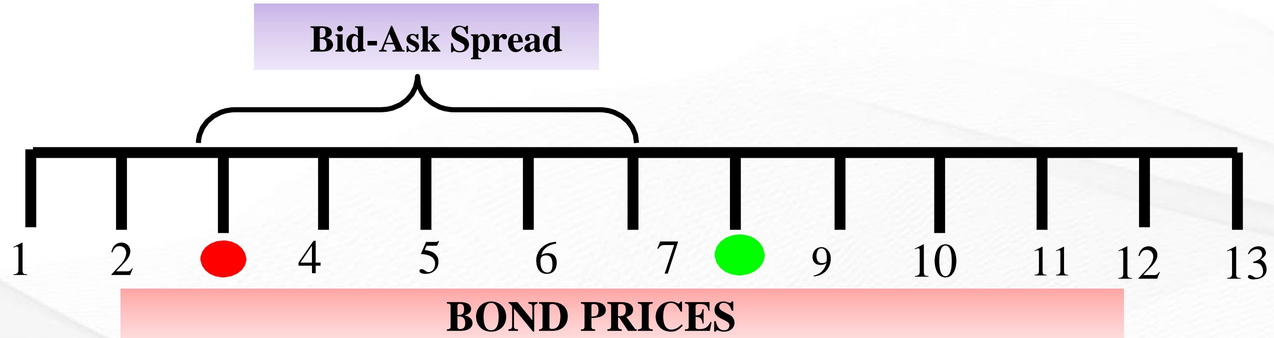


Liquidity Risk



The greater the bid – ask spread, the less certain the fair value of the price

Liquidity Risk continued



Liquidity Risk isn't important for hold-to-maturity investors

Liquidity Risk is a function of the following factors

- Expectation of interest rate changes
- Number of market makers
- Comfort level with security

Call Risk

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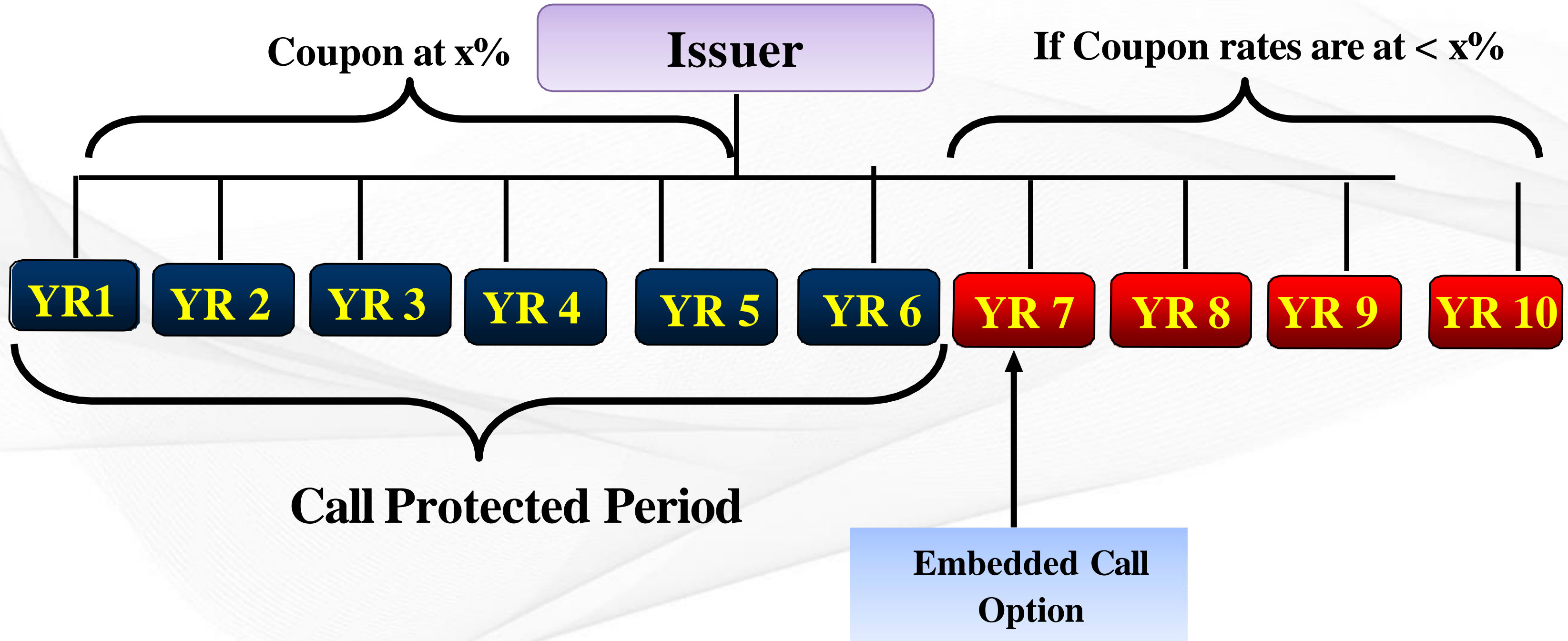

Bonds with call options embedded often pay higher coupons to compensate for call risk Issuers exercise call options to take advantage of falling interest rates by re-financing

Fund Managers' Practice on Risk Mitigation

Fund managers actively manage interest rate risk by varying the maturity (hence duration) of the portfolio as per view on market movements.

Having said that, long bond funds will be relatively more volatile than short bond funds, as markets are dynamic and the impact of interest rate movements is higher.

Credit risk is managed by a process of due diligence before taking exposures and monitoring after taking exposure.

The due diligence is independent of the credit rating of the bond.

Portfolio Concentration - SEBI Rules for MFs

Single Issuer	10% of NAV (12% with Trustee approval) of the Scheme
Single Sector	Existing: 25% of NAV Exclusion: G-Secs, T-Bills, Bank CDs, CBLO, AAA PFI, AAA PSU, Bank Deposits Circular dated 1 October 2019: 20% (applicable by 1 May '20)
Additional to HFCs	Existing: 15% of NAV of the Scheme Circular dated 1 Oct '19: 10% Additional 5% for securitized retail / affordable **Overall exposure in HFCs shall not exceed the sector exposure limit of 20%**
Group level	20% of NAV (25% with Trustee approval) of the Scheme Exclusion: PSUs, PFIs, PSU Banks
Sponsor Group	10% (15% with Trustee approval) of the Scheme (this is as per Circular dated 1 October 2019)

Quiz

If there is a default in a bond in the portfolio, what type of risk is it?

A. Interest Rate
B. Credit
C. Concentration
D. Liquidity

Two debt funds have given similar returns over the same period. One fund has been more volatile than the other. How would you measure the performance?

A. Returns adjusted for standard deviation
B. Returns adjusted for expected future movement in interest rates

Quiz

In debt funds (MFs), as per SEBI sector exposure rules, there is no limit on exposure to certain category of instruments like G-Secs, Bank CDs, etc. Is it advisable to take that risk?

A. No, as there is a high degree of concentration

B. Yes, as these are sovereign / top rated instruments issued by well regulated institutions

Under SEBI rules, what is the maximum permissible exposure in instruments issued by one company?

A. 10%

B. 15%

C. 12% (with Trustee approval)

Quiz

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The risk that cash flows from existing investments may have to be reinvested at lower interest rates is called?

A. Price risk
B. Prepayment risk
C. Yield curve risk
D. Reinvestment risk

Credit risk is measured in several ways. The yield differential above the return on a benchmark security measures the:

A. Default Risk
B. Credit spread risk
C. Downgrade risk
D. Recovery rate

Thank You