

Mutual Fund Analyst

Topic 5

Portfolio management using comparative analysis

Topics to discuss:

- Due diligence at Fund, Fund Manager and AMC levels
- Performance and portfolio assessment
- Analysis of debt funds – credit and duration risk
- Analysis of existing portfolio
- Periodic reviews and rebalancing

Before we get to the topic, I think it is essential to get a grip on how wide and deep the Indian Mutual fund industry is. The discussion will help you understand the length and breadth of the mutual fund industry –

So here are necessary details for you (as on July 2021) –

The number of fund houses – 45. These are the number of mutual fund companies who have obtained the AMC license from SEBI. Example: Kotak AMC, HDFC AMC, ICICI Pru AMC, Axis AMC, DSP etc.

The number of scheme – 1510. Each fund house (AMC), can run multiple schemes for people to invest. For example, Nippon AMC runs 145 different schemes, probably the highest in the industry. SBI AMC runs about 144, ICICI Pru AMC manages around 143 schemes. A scheme is a fund with a specific investment objective, more about this when we dig into the factsheet.

Money managed by AMCs – 35L Crore. This is the aggregate amount of money managed by the entire mutual fund industry (across all AMCs). For example, SBI AMC, which is one of the largest AMC, manages about 5.23L Crs. Axis AMC, on the other hand, manages about 2.08L Crs. This money is coming in from retail individuals and corporates. Out of this 35.15L Crs, roughly 18.85L Cr is from retail investors like you and me, and about 16.30L Crs is from the corporates.

The number of unique Investors – 2.39 Crs Indians. This is the number of individual investors investing in Mutual funds schemes across all the AMCs.



Due Diligence of a Mutual Fund Scheme

Management Team

Key considerations

Experience: An experienced team may be better suited for navigating volatile markets.

Firm: The backing of a large investment organization could provide the team additional supporting resources.

Investment: Large investment in the fund shows a team's conviction in the strategy and their abilities.

Organization: A team with clear organization and responsibilities allows investment professionals to dedicate their time to the fund.

Questions to ask

- How long has the team been running the fund and what are their prior experiences? How does the team divide and assign the responsibilities of managing the fund?
- How much AUM does the team's firm have?
- How much does the team have invested in the fund?
- Has the team seen turnover recently?
- How does the team communicate with the fund's investors?

Performance: How has the fund performed

Key considerations

Active share: A higher share indicates that the fund's holdings differ significantly from its benchmark.

Capture ratios: A higher upside/downside capture ratio results from the fund participating more in its benchmark's upward/downward movements.

Rolling returns: Analyzing rolling returns rather than standard performance periods gives a sense for a fund's consistency.

Sharpe ratio: A higher ratio means the fund has efficiently taken on risk to achieve returns.

Questions to ask

- Has the fund been able to consistently meet its objectives?
- Has performance met expectations across a variety of markets?
- What is the fund's active share, capture ratios and Sharpe ratio?
- What is the fund's expense ratio?
- What has historically driven the performance of the fund?

Philosophy: What is the objective of the fund

Key considerations

Capacity: A fund with limited capacity could complicate the ability to make future investments.

Investment approach: Understand the goals of the fund and how they align with your portfolio's objectives.

Risk/return expectations: It should be clear which markets are more or less favorable for the fund and the level of risk it should realize over a full market cycle.

Unconstrained funds: Funds that are not bound to a benchmark may have very different behaviors and holdings at times.

Questions to ask

- What is the goal of the fund and how does it intend to achieve its goal?
- Has the fund's investment approach changed over time?
-
- What is the fund's benchmark?
- What market environments should lead to the fund outperforming or underperforming its benchmark?
- What makes the fund different than its peers?
- Does the fund have capacity constraints?

Process: How does the fund build portfolio?

Key considerations

Construction: A top-down portfolio takes positions that reflect views on macroeconomic factors while a bottom-up portfolio focuses on selecting individual securities.

Idea generation: An understanding of where ideas come from and how they are evaluated will give insight into how the team functions.

Risk management: A fund should have clear, quantitative policies for how its risks are monitored and levels that are permissible.

Questions to ask

- What is the process for surfacing investment ideas and making investment decisions?
- What is the fund's universe?
- Is the fund a top-down or bottom-up portfolio?
- What is the fund's sell discipline?
- How does the fund manage risk?
- How are security weights within the fund determined?



Few points to look at while picking a stock

- Analyze the capitalization of the company
- Revenue profit and margin trends
- Competitors and industries
- Valuation multiples
- Management and share ownership
- Balance sheet
- Stock price history
- Stock dilution possibilities
- Expectations
- Examine long-term and short-term risks



Performance parameters for mutual fund

- Fund performance against benchmark
- Long term returns
- Risk adjusted return
- Alpha and beta
- Average maturity yield
- Total expense ratio
- Performance ranking
- Fund managers tenure and experience
- Scheme asset size



Performance parameters for debt fund

- Average maturity
- Modified duration
- Yield to maturity
- Macaulay duration
- Instrument breakup
- Credit quality
- Performance vs. benchmark



Performance parameters for equity

- Arithmetic mean of monthly return
- Standard deviation
- Sharpe ratio
- Sortino ratio

Bonds and Risks



- ❑ Bonds have two main risks:

Risk of default
(credit risk)

Rate fluctuation risk
(interest rate risk)

Government issued bonds have
very low credit risk.

However, some finite risk of default exists for
all bonds.

Interest rate risk affects **all bonds.**

What determines the risks associated with bonds?

- ❑ In general bonds with **longer maturity** are **more likely** to show price disturbances because of interest rate fluctuations.
- ❑ Also, the bond **prices** have an **inverse relation** to the interest rate or **coupon**. The higher the coupon, the lower the interest rate risk.

How sensitive is the bond price?

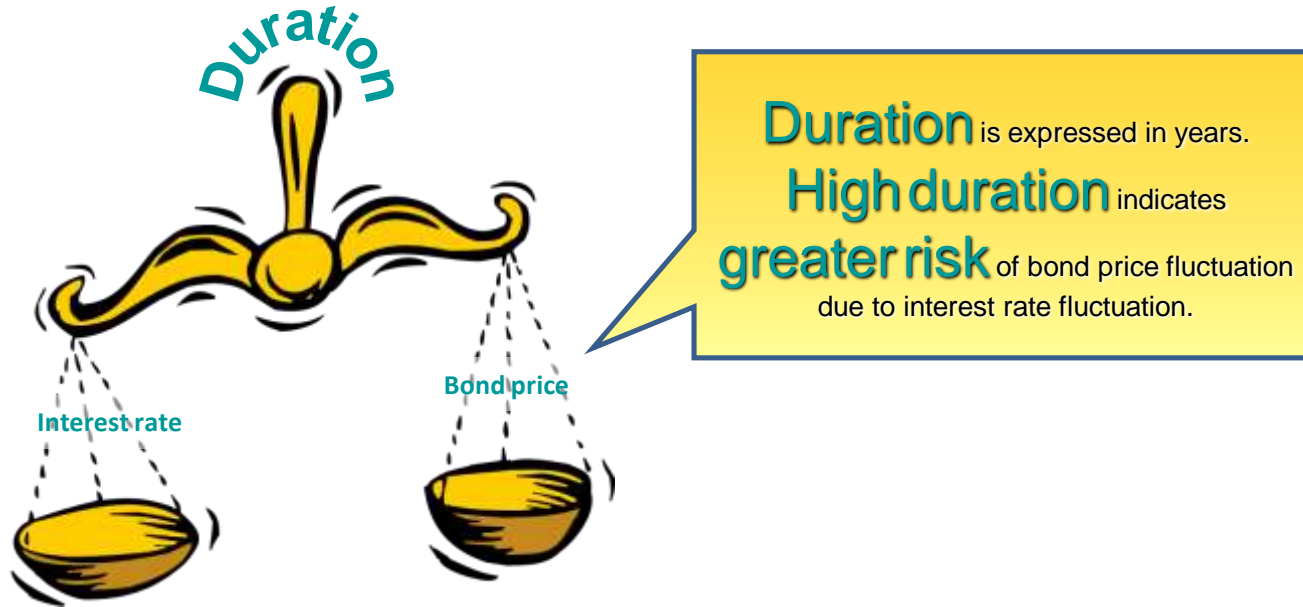
In other words: How does the change in interest rate affect the bond price?

A measure called **duration** indicates this.



Duration

- ❑ Duration is a measure of how changes in interest rate affect the market price of a debt instrument (such as a bond.)



Duration

- ❑ Duration is calculated using fairly complicated mathematical operations on a number of financial parameters.
- ❑ Luckily an investor does not have to do this calculation.

Duration is **calculated and provided** for bonds available in the market.

The final result expresses
duration in
years.



Example:

A bond has a duration of 3 years. This means that for every 1% **decrease in interest rate**, the price of the bond is likely to **rise** by 3%.

Also, for every 1% **increase in interest rate**, the price of the bond is likely to **fall** by 3%.

Example:

- Let us consider two bonds with five-years maturity.
The 8.5% Bond of Rs. 1000 face value has a current market price of Rs. 943.14 and a YTM of 10 per cent;
- And the 11.5 % Bond of Rs. 1000 face value has a current market price of Rs. 1033.60 and a YTM of 10.6 per cent;

8.5 PERCENT BOND				
YEAR	CASH FLOW S	PRESENT VALUE AT 10%	Proportion OF bond price	Proportion of bond price x time
1	85	77.27	0.082	0.082
2	85	70.25	0.074	0.149
3	85	63.86	0.068	0.203
4	85	58.06	0.062	0.246
5	1085	673.70	0.714	3.372
		943.14	1.000	4.252

- And the 11.5 % Bond of Rs. 1000 face value has a current market price of Rs. 1033.60 and a YTM of 10.6 per cent;

11.5 PERCENT BOND				
YEAR	CASH FLOW S	PRESENT VALUE AT 10.6%	Proportion OF bond price	Proportion of bond price x time
1	115	103.98	0.101	0.101
2	115	94.01	0.091	0.182
3	115	85.00	0.082	0.247
4	115	76.86	0.074	0.297
5	1115	673.75	0.652	3.259
		1033.60	1.000	4.086

$$\textit{Modified Duration} = \frac{\textit{Duration in Years}}{1 + \textit{Yield to Maturity}}$$

Based on the aforesaid examples, the Volatility of 8.5% Bond would be

$$= 4.252/1.110 = 3.87$$

$$\text{Volatility of 11.5\% Bond} = 4.086/1.106 = 3.69$$

Percentage change in bond price = $-1 \times \text{MD} \times \text{change in interest rate}$

GENERAL RULE:

- LARGER THE COUPON RATE, LOWER THE DURATION AND LESS VOLATILE THE PRICE OF THE BOND WOULD BE ;
- LONGER THE TERM TO MATURITY, THE LONGER THE DURATION AND THE MORE VOLATILE THE BOND WOULD BE;
- HIGHER THE YIELD TO MATURITY, LOWER THE BOND DURATION AND BOND VOLATILITY AND VICE VERSA;
- IN A ZERO COUPON BOND, THE BOND'S TERM TO MATURITY AND DURATION ARE SAME

USES OF BOND DURATION MEASURES:

1. It is very useful for structuring of bond portfolios;
2. Planning the investment decisions.

Discussion

Participate in the discussion.



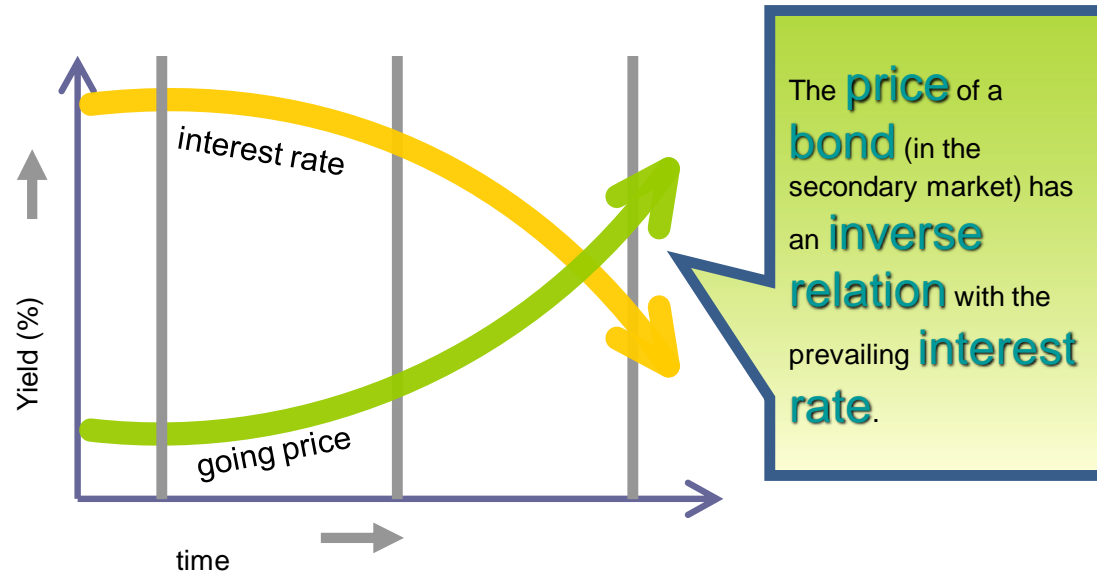
We are all expecting the **interest rates** to **go up**.

What do you expect will happen to the **price of your portfolio**?

If you were the fund manager, what would you do to the **duration of your portfolio**?

Interest Rate Risk

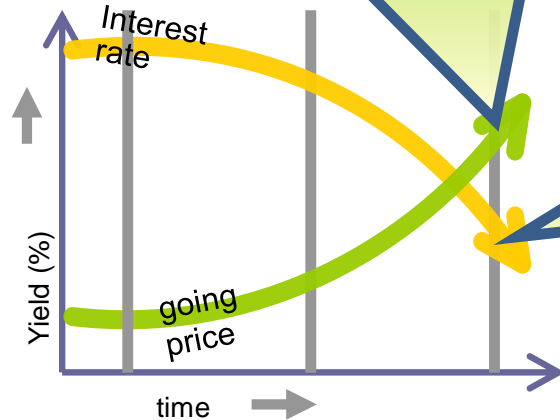
- ❑ All bonds have an interest rate risk.
- ❑ This is predicted by the bond rule, which is summarized below:



Interest Rate Risk

- Consider a bond that was issued sometime in the past. The inverse relation exists because of the following:

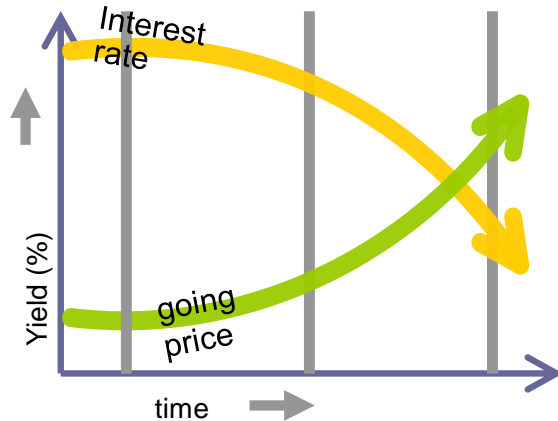
When the interest rate **falls**, then the **older bond** is a better investment (because it **offers better yield**) than new bonds currently being issued.



When the interest rate **rises**, then investors have **“better” investments available** (new bonds that give higher yield for the same investment) compared to the older bond that was issued when the interest rates were low.

Interest Rate Risk Vs Bond Tenure

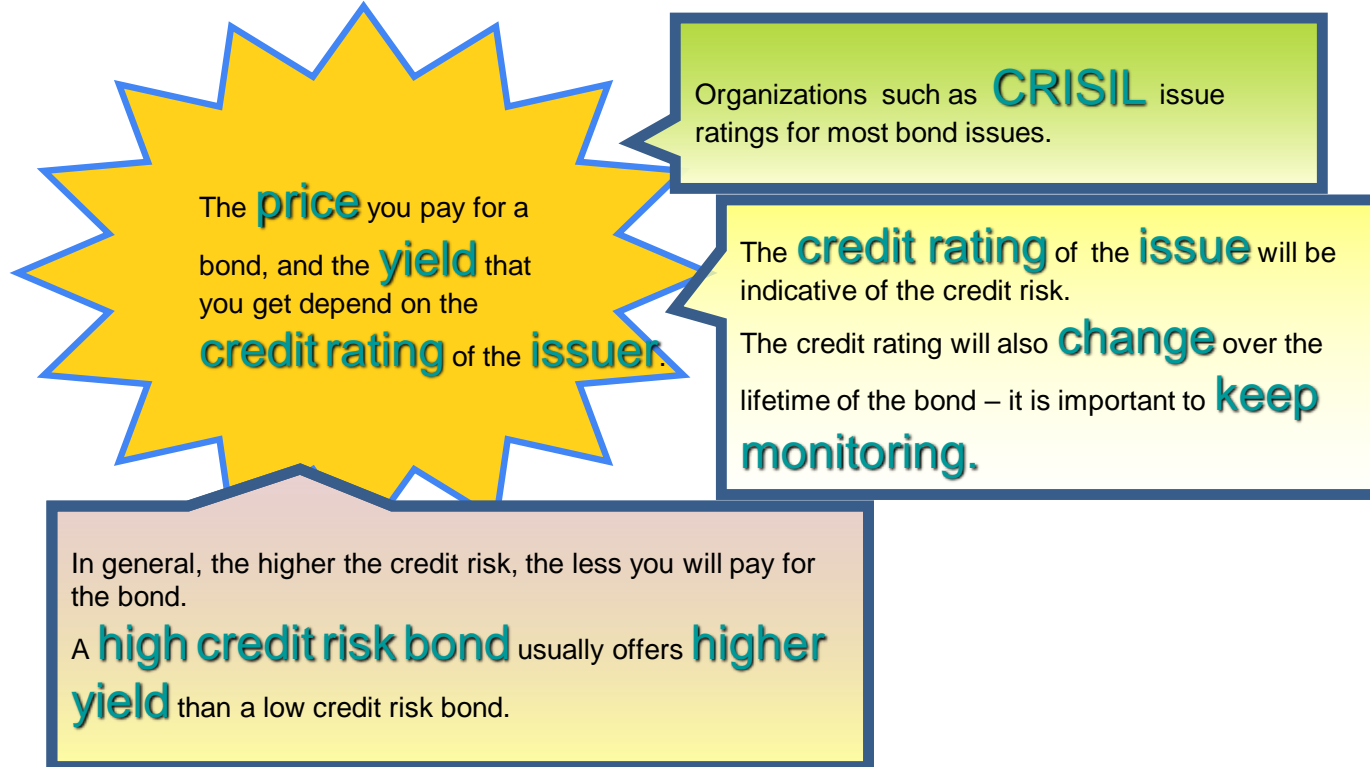
- ❑ A longer maturity bond is more sensitive to interest rate fluctuations compared to a shorter maturity bond.
- ❑ A **longer maturity** bond faces a **greater interest rate risk**, compared to a shorter maturity bond.



The **interest rate risk** is the risk that **rising interest rates** will reduce the (secondary market) price of a bond.

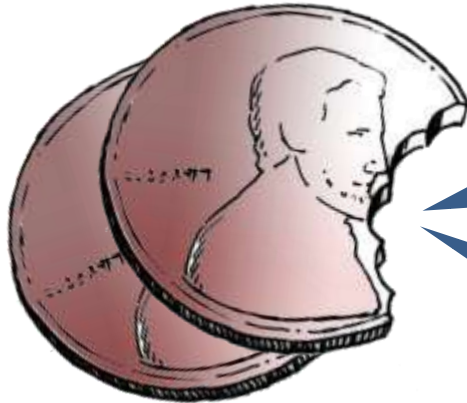
Credit Risk

- ❑ This is the **risk** that the **bond issuer** will **default** (i.e. not meet) its interest and debt obligations.



Inflation Risk

- ❑ Inflation makes currency lose its value.
- ❑ Inflation automatically erodes the value of any investment (including bonds) because, although you will receive the par value at maturity, the money is **reduced in worth**.
- ❑ All interest payments along the way are also similarly eroded.

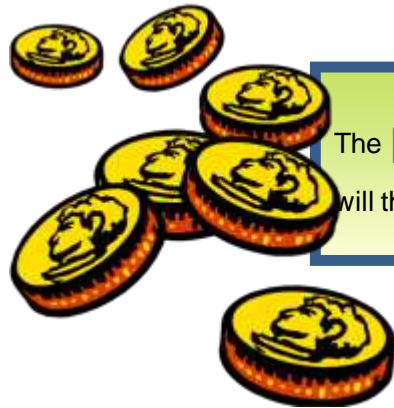


Inflation risk is the possibility of reduction in value of an investment due to inflation.

Most investments have a negative risk exposure i.e. the value goes down with inflation.

Impact of Liquidity on Price

- ❑ If you want to sell your bonds in the market, and **liquidity is low**, then you may find it **difficult to get buyers**.



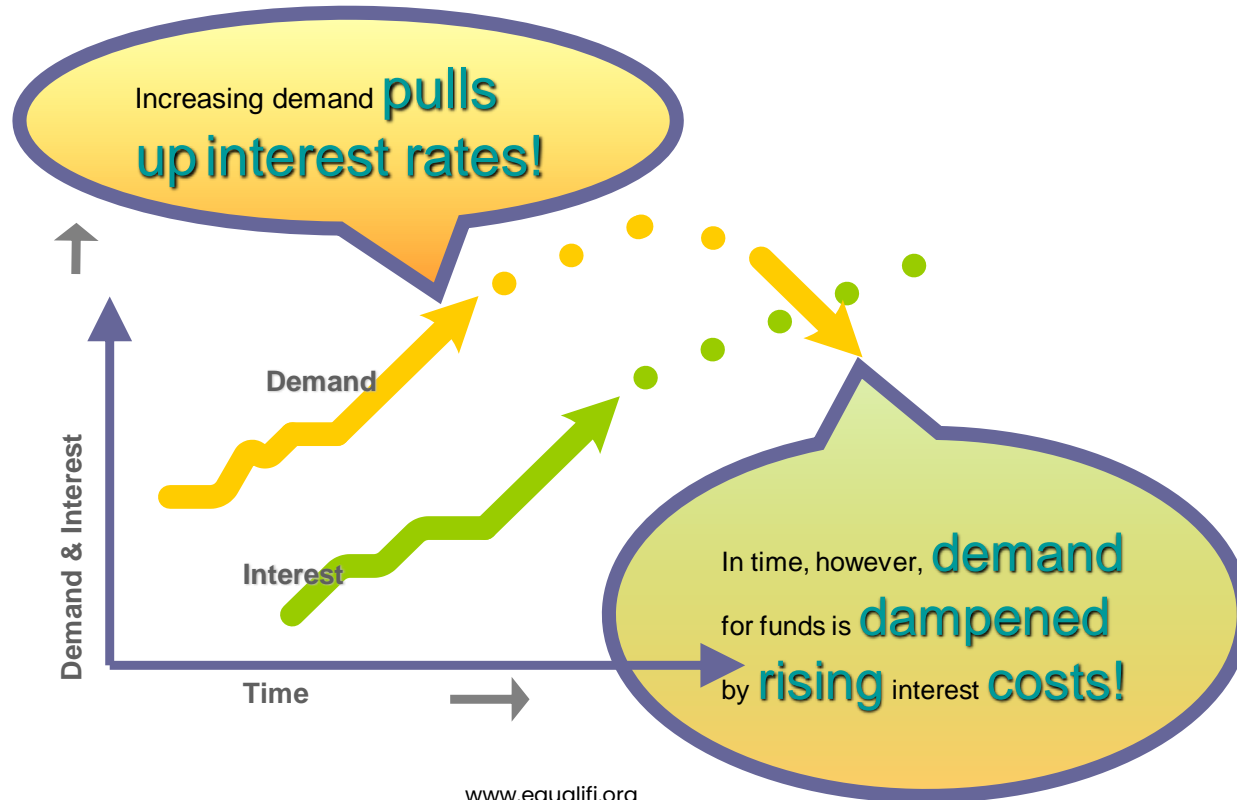
The **price** of bonds
will thus tend to **fall**.

This does not apply to Govt. bonds.
Regardless of liquidity, there are **always**
buyers for govt. bonds.

- ❑ When **liquidity is high**, the position is reversed. The **price** of bonds **tends to rise**.

Interest Rates Vs Demand

- As the **demand** for funds increases, **interest rates rise**.



Scenario

- ☐ Consider this scenario:

You buy a bond with a coupon of 8%, par value Rs. 1000 and maturity duration of three years.

Interest rates
have **risen** to 10%
now!

What price will your bond fetch?
Higher or **lower** than
par value?

Two years later, you wish to sell the bond
in the **secondary** market.

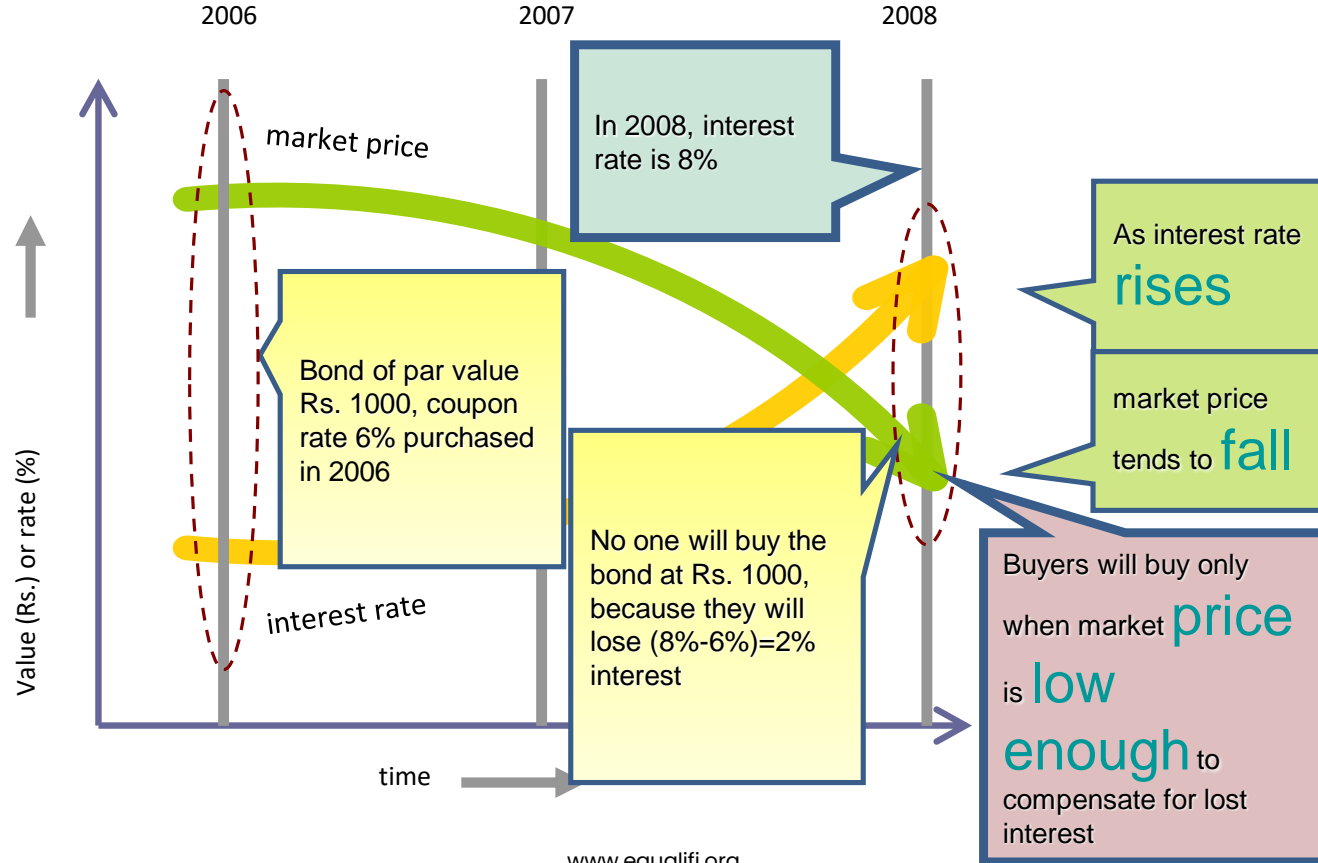
- ☐ Buyers can buy bonds with 10% coupon rate because the current interest rate is 10%.
- ☐ Your bond offers only 8%.
- ☐ Therefore, you will probably **sell** at a price **lower than par value**.

- ❑ Bond rates tend to fluctuate as interest rates change.
- ❑ If you sell a bond before its maturity, then you receive the **market price** for the bond. This maybe **above** or **below** the par value.

The **market price** is different for each bond.
It depends principally on the **maturity date**, and on the difference between current **interest rate** and the **coupon rate** of the bond.



Illustration 1



Interest Rates Vs Demand

- The **opposite** is **also true**.

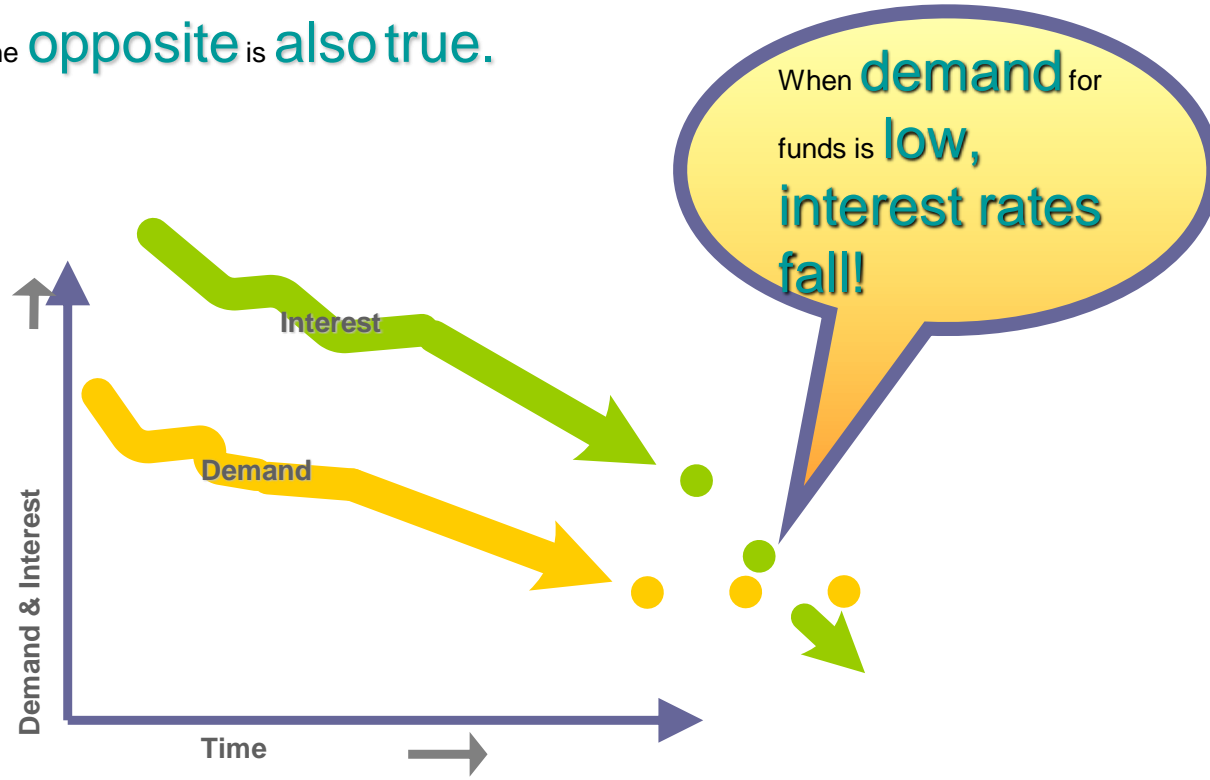
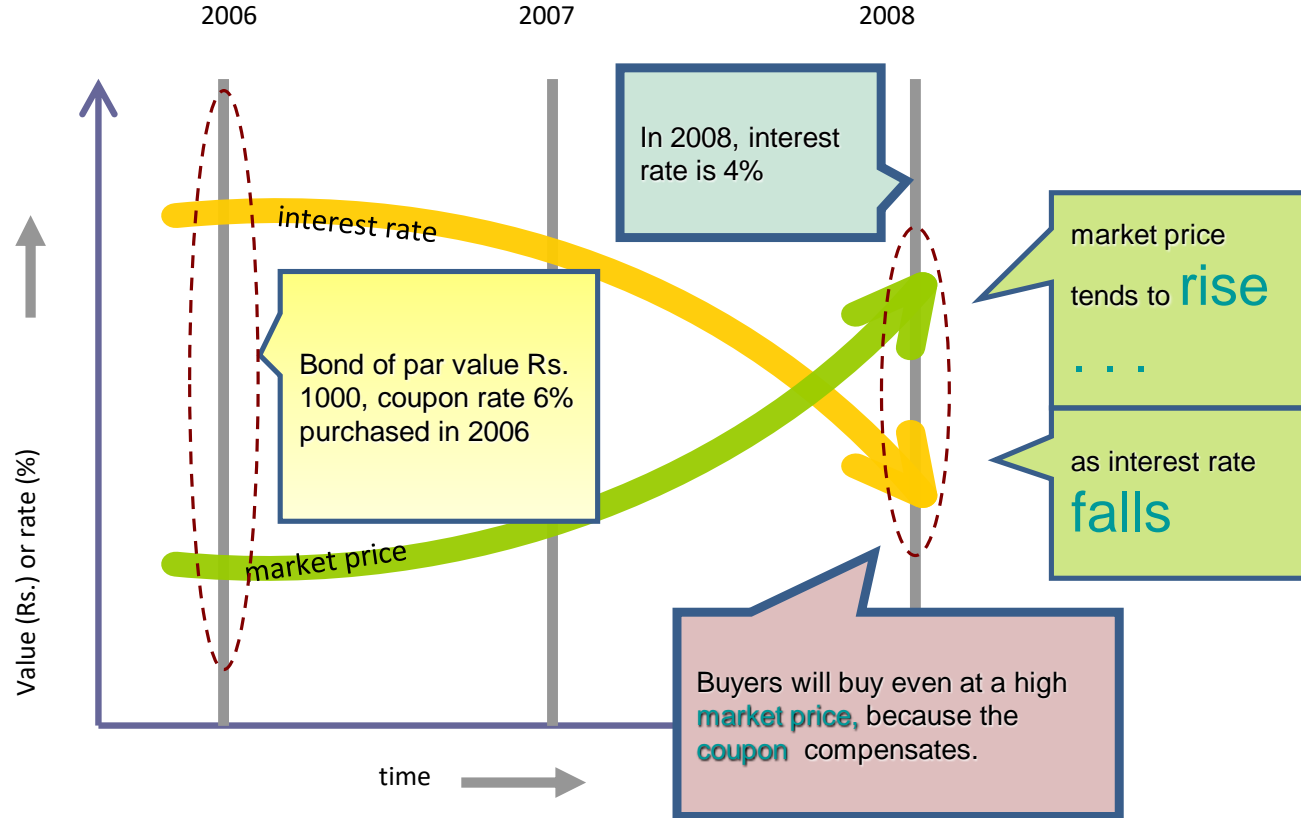
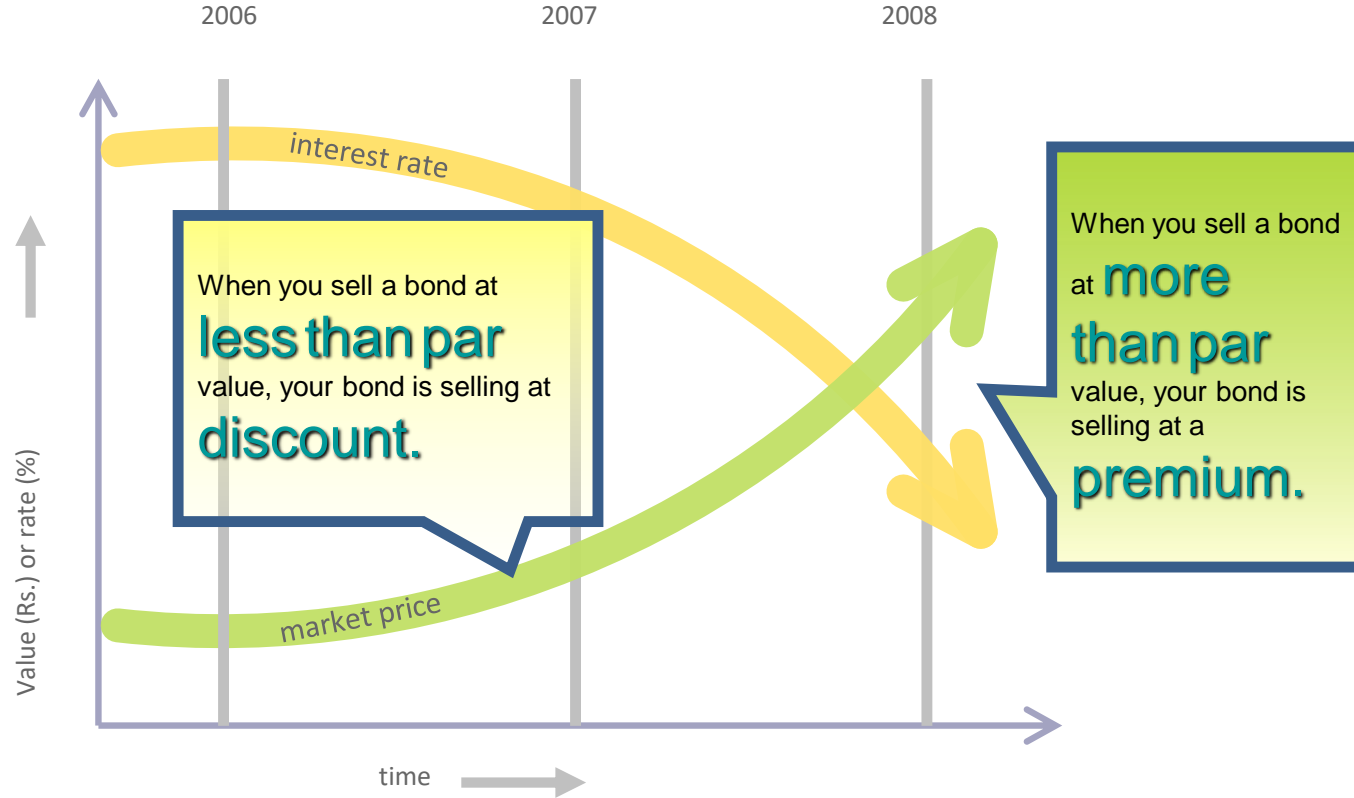


Illustration 2



Bond Dynamics



Analysis of debt funds

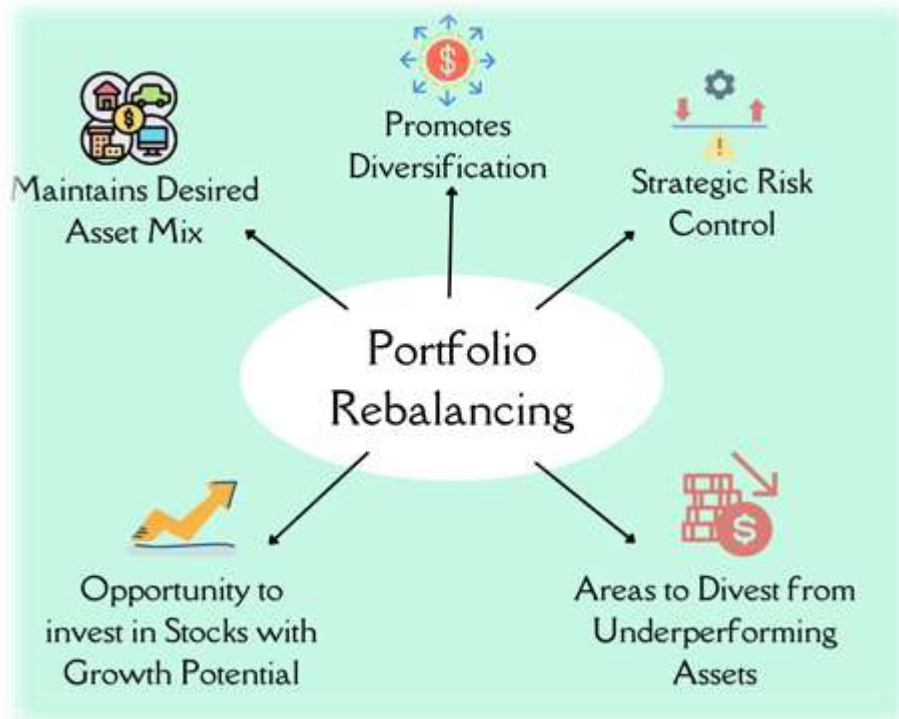
- Confused portfolio
 - Risk recap
 - Credit risk
- Interest rate risk
- Portfolio check
- Other checks

Portfolio Aggregates				
	Fund	1Y High	1Y Low	Category
Number of Securities	56	56	24	64
Modified Duration (yrs)	1.97	2.67	1.35	2.34
Average Maturity (yrs)	2.28	3.38	1.62	2.89
Yield to Maturity (%)	4.59	6.38	4.59	5.18
Avg Credit Rating	AAA	--	--	--

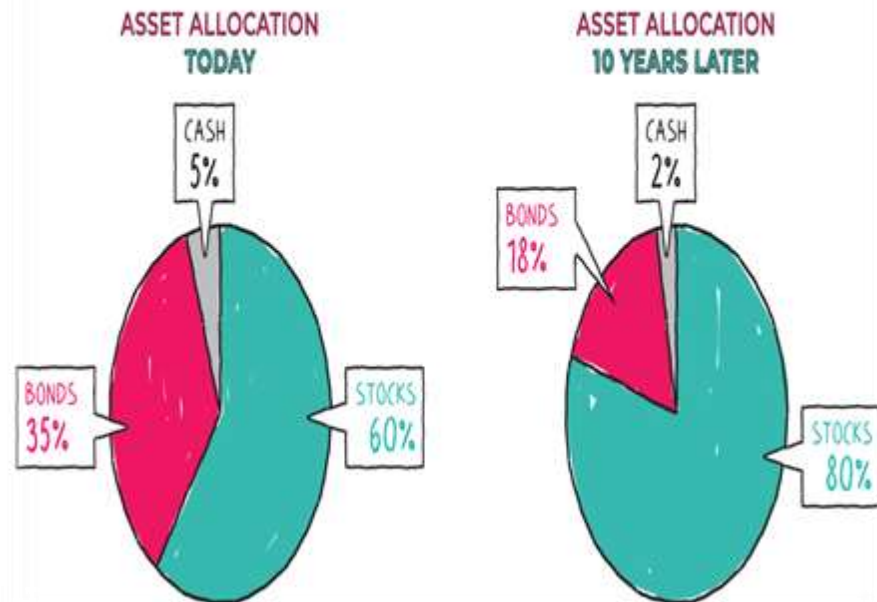
Portfolio Rebalancing



Why Rebalancing



RISKS OF NOT REBALANCING



THANKYOU