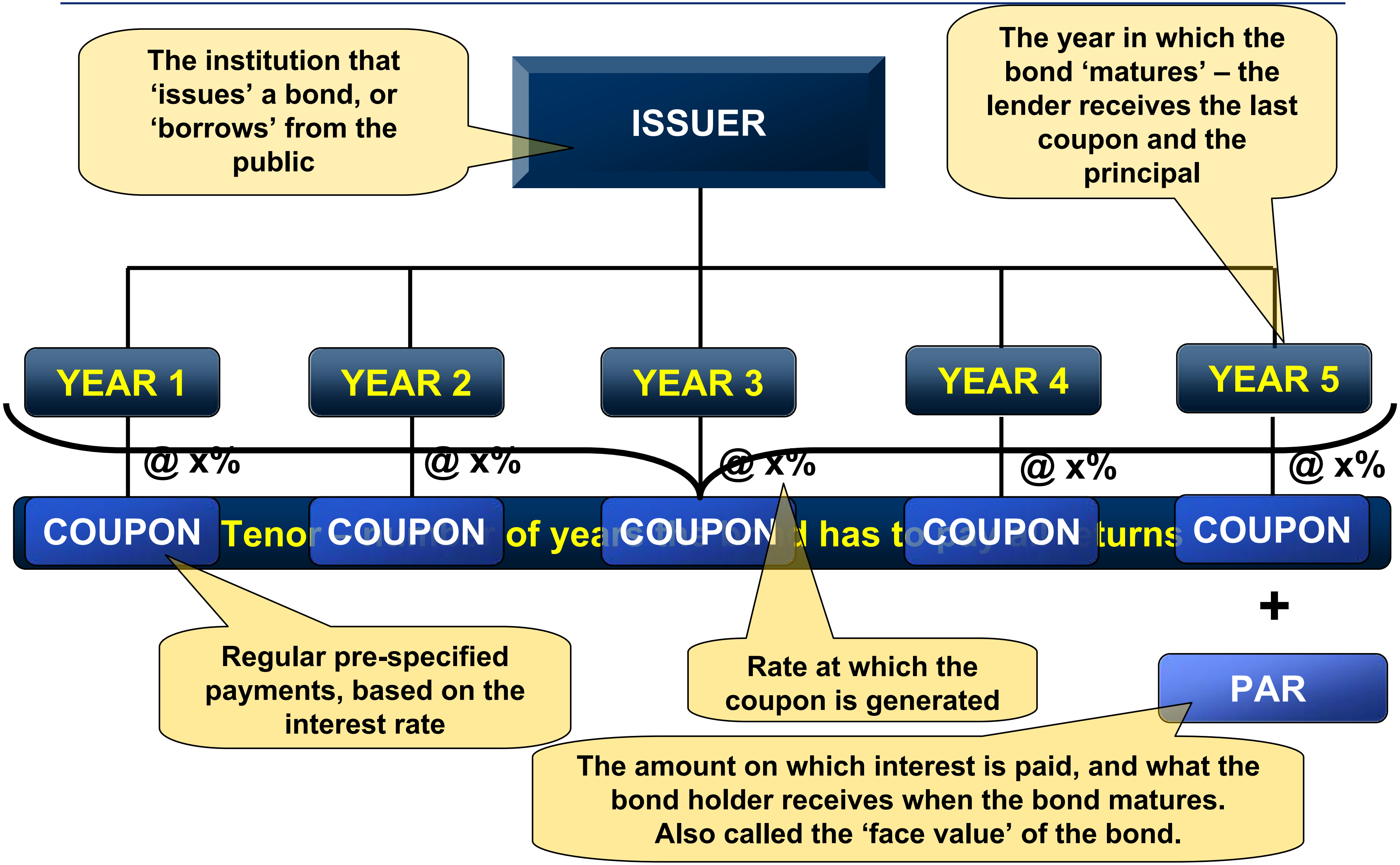
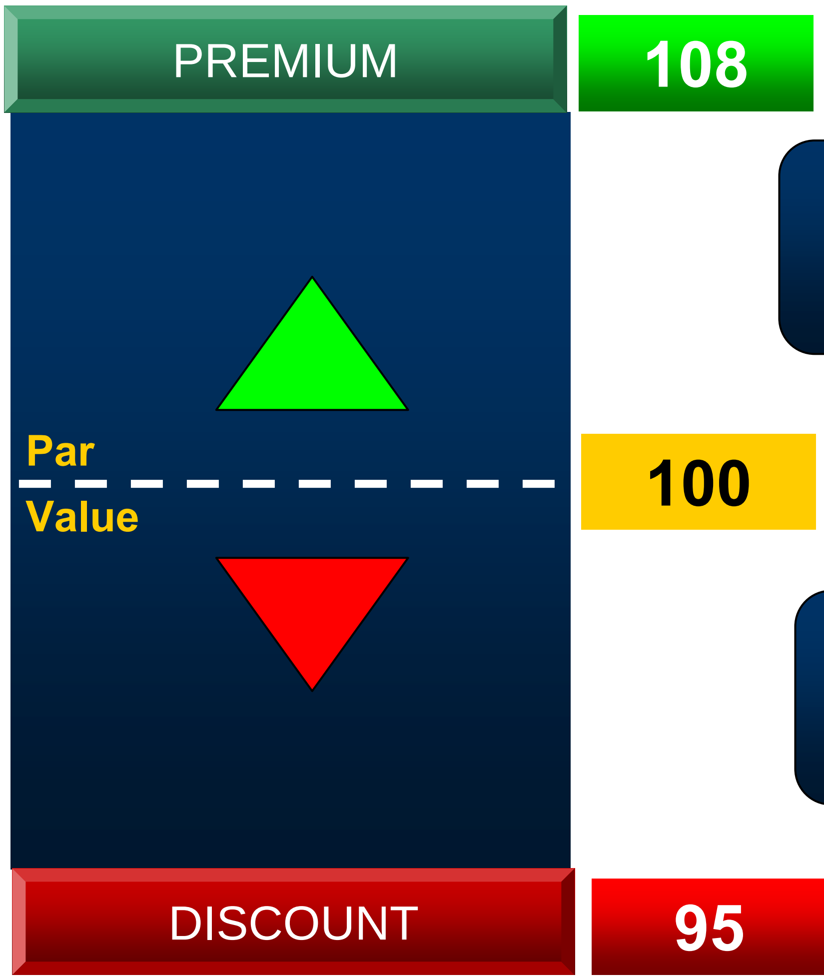
Understanding Fixed Income Concepts

Basic structure of a bond



Par value, premium and discount



If the bond trades at a premium, the investor pays more than the face value of the bond

If the bond trades at a discount, the investor pays less than the face value of the bond

What is a bond rating?

Bonds are rated on the basis of their risk of default

Default: the risk that the lender may not get his money back

The ratings do not convey other risks: change in liquidity, or interest rates

Bond ratings are carried out by agencies

What goes into a bond rating?

The Four C's of Corporate Credit

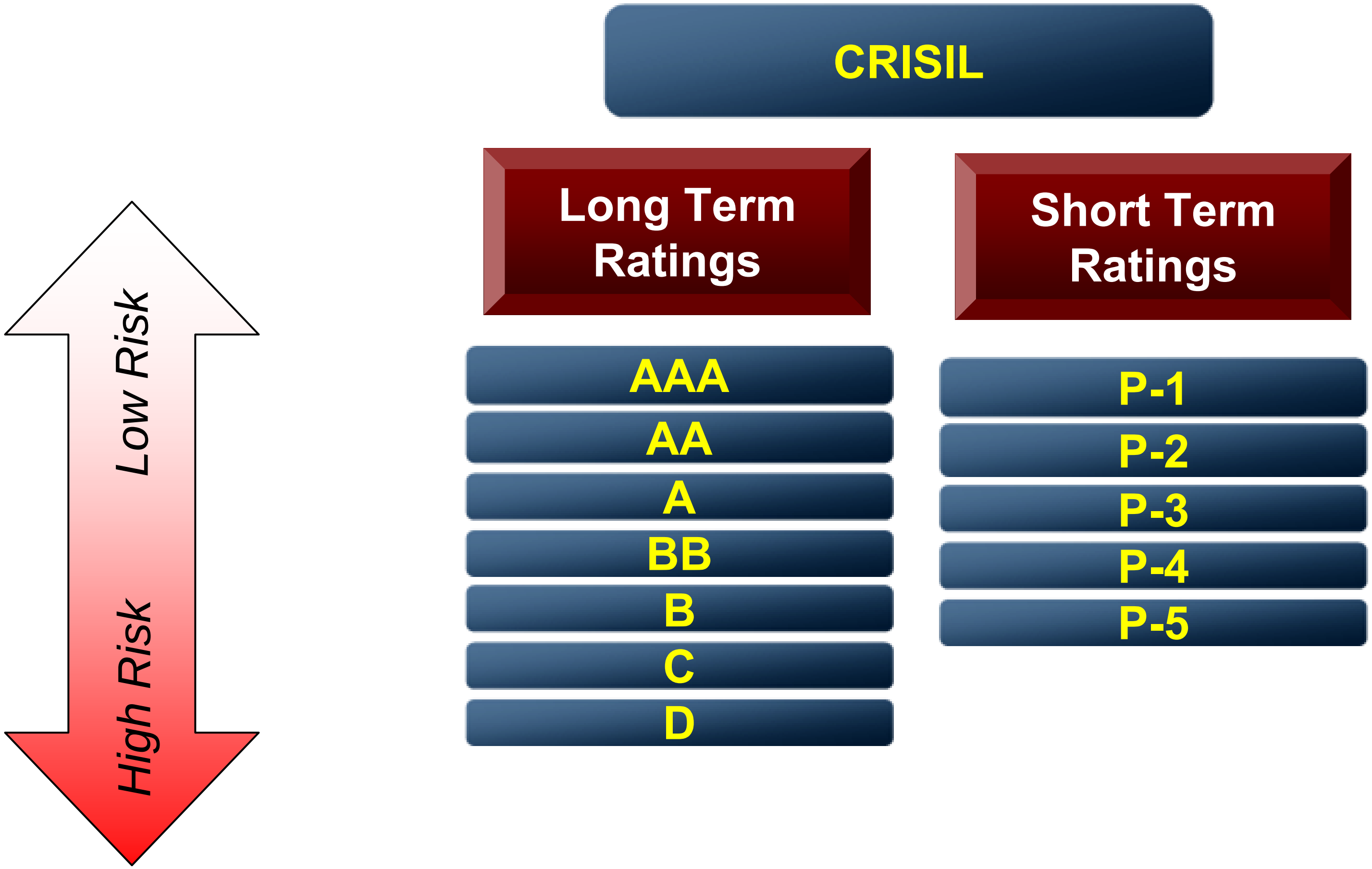
Character

Capacity

Capital

Conditions

What are bond ratings?



Source: Crisil

What are bond ratings?

ICRA

Low Risk

Long Term Ratings	Medium Term Ratings	Short Term Ratings
LAAA	MAAA	A1
LAA	MAA	A2
LA	MA	A3
LBBB	MBBB	A4
LBB	MBB	A5
LB	MB	
LC	MC	
LD	MD	

High Risk

Source: ICRA

Understanding yield to maturity

Yield to Maturity

- What the investor gets if bond is held to maturity
- Assumes all cash flows reinvested at the YTM
- Bond price is the sum of all cash flows discounted at YTM

Math Check

Individual cash flows

Terminal cash flow: coupon + par value of bond

$$\text{Bond Price} = \frac{\text{CPN}}{(1+r)^{1}} + \frac{\text{CPN}}{(1+r)^{2}} + \cdots + \frac{\text{CPN} + \text{PAR}}{(1+r)^{n}}$$

Present value of the bond

Discount rate: Yield to Maturity

Number of times discount occurs: based on time period

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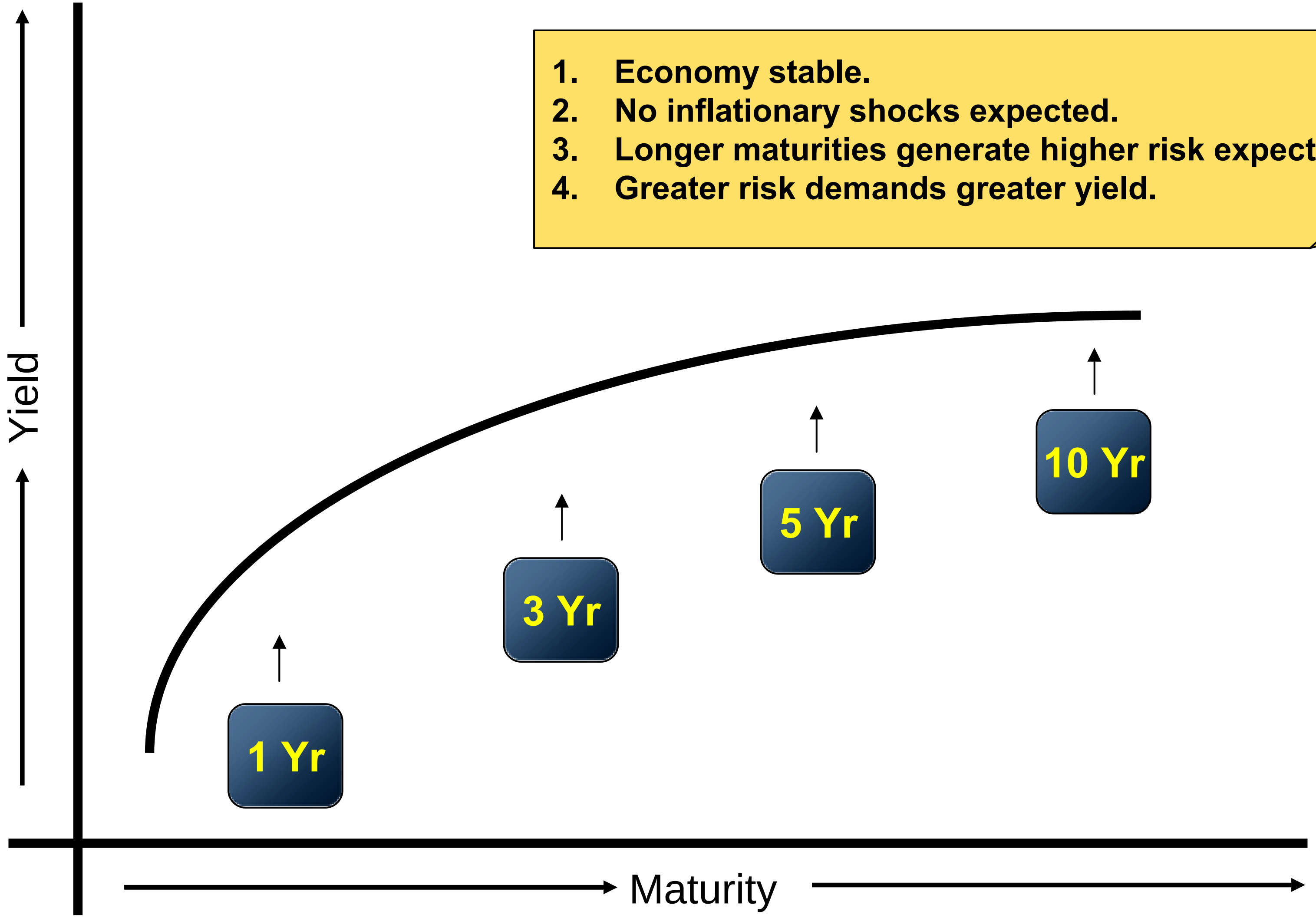
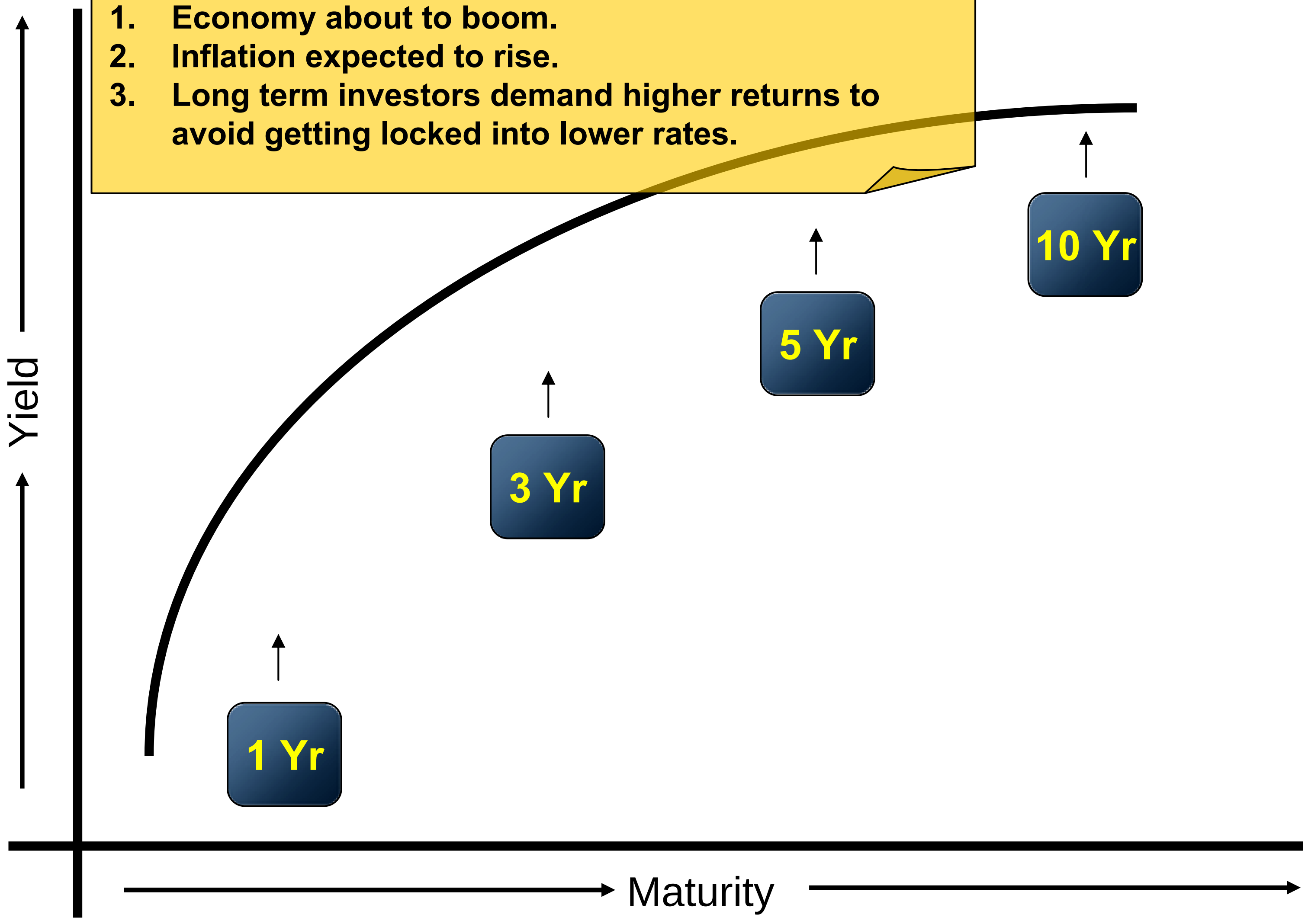
The term structure – normal yield curve

1. Economy stable.
2. No inflationary shocks expected.
3. Longer maturities generate higher risk expectation.
4. Greater risk demands greater yield.



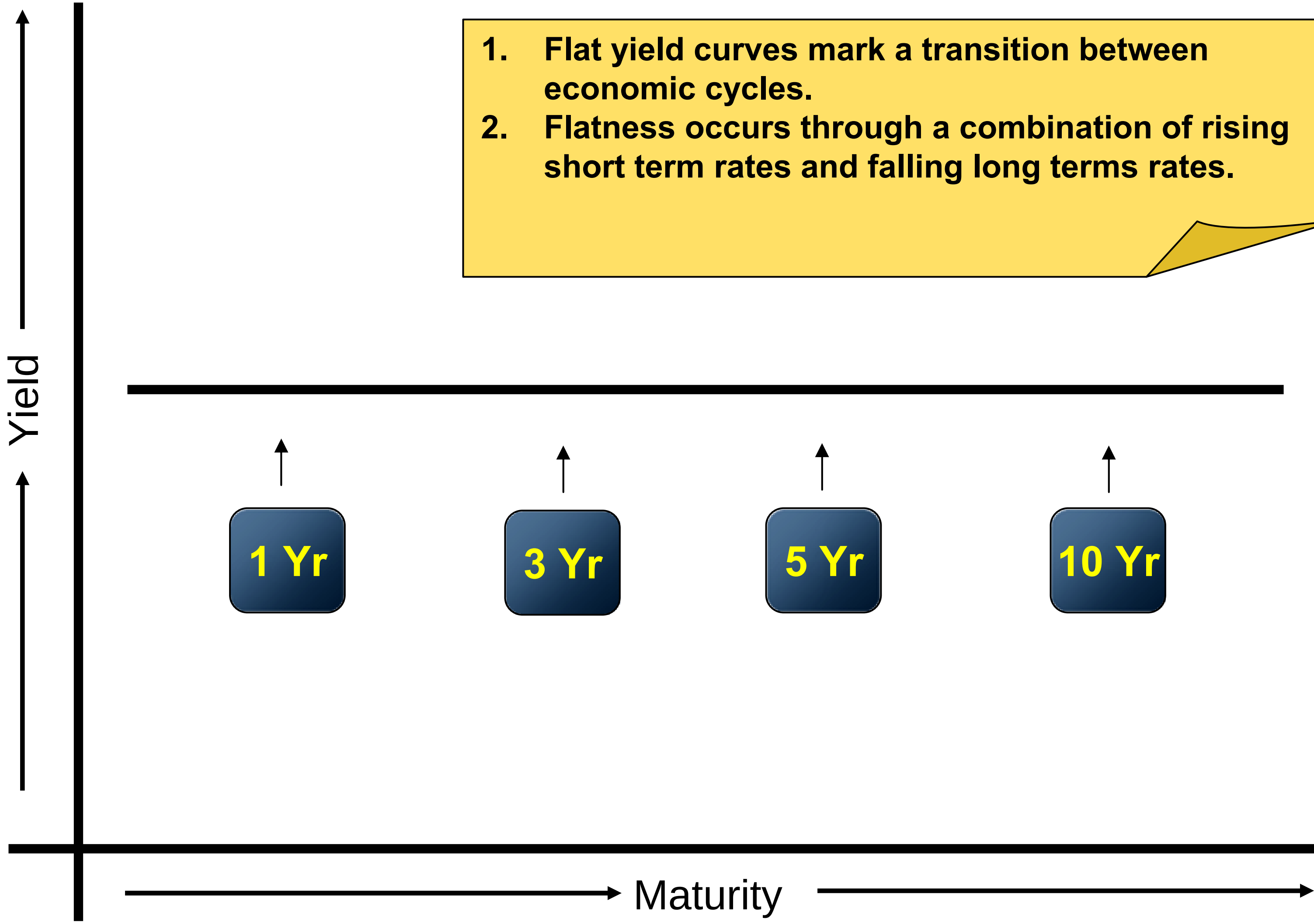
The term structure – steep yield curve

1. Economy about to boom.
2. Inflation expected to rise.
3. Long term investors demand higher returns to avoid getting locked into lower rates.

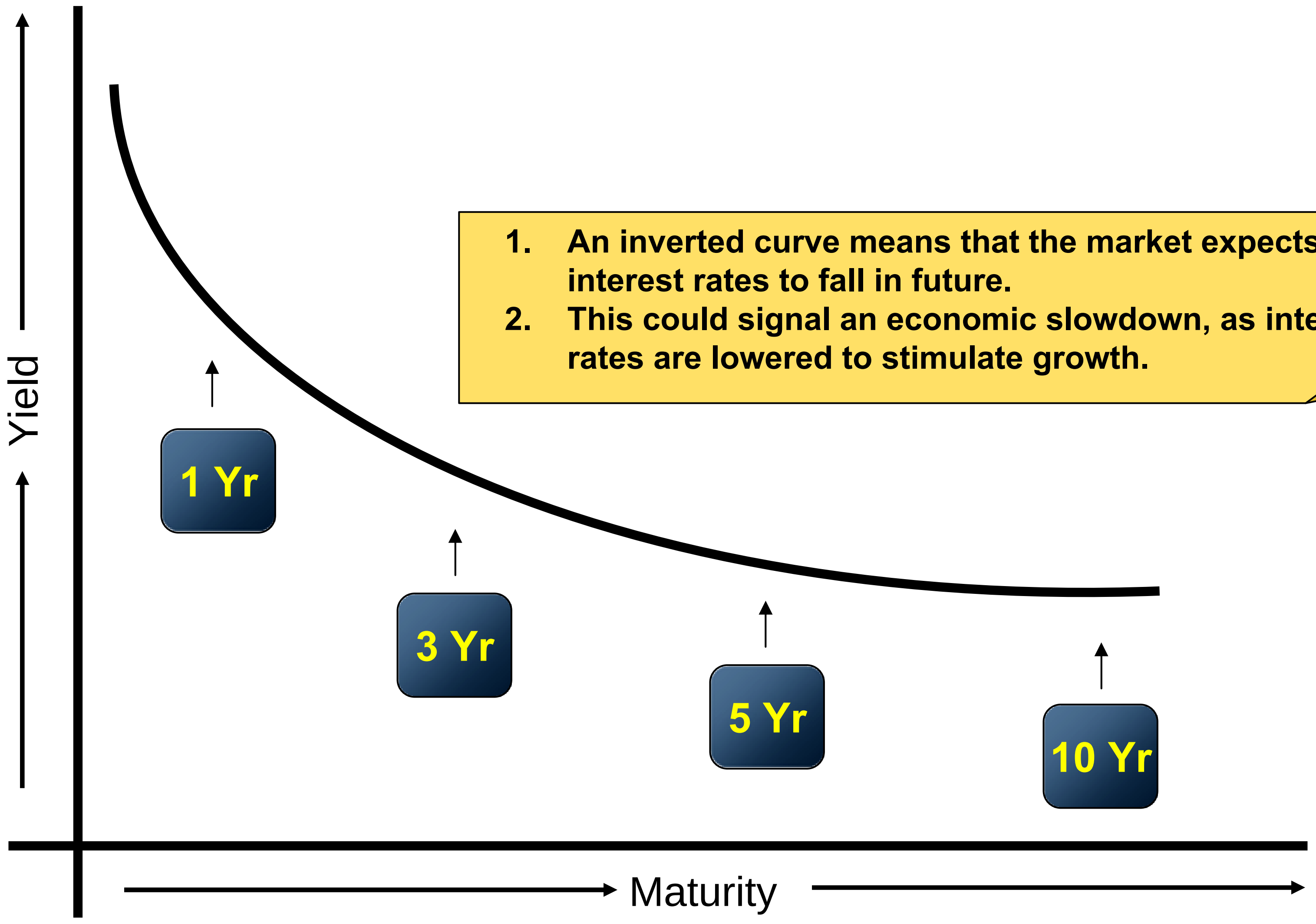


The term structure – flat yield curve

1. **Flat yield curves mark a transition between economic cycles.**
2. **Flatness occurs through a combination of rising short term rates and falling long terms rates.**

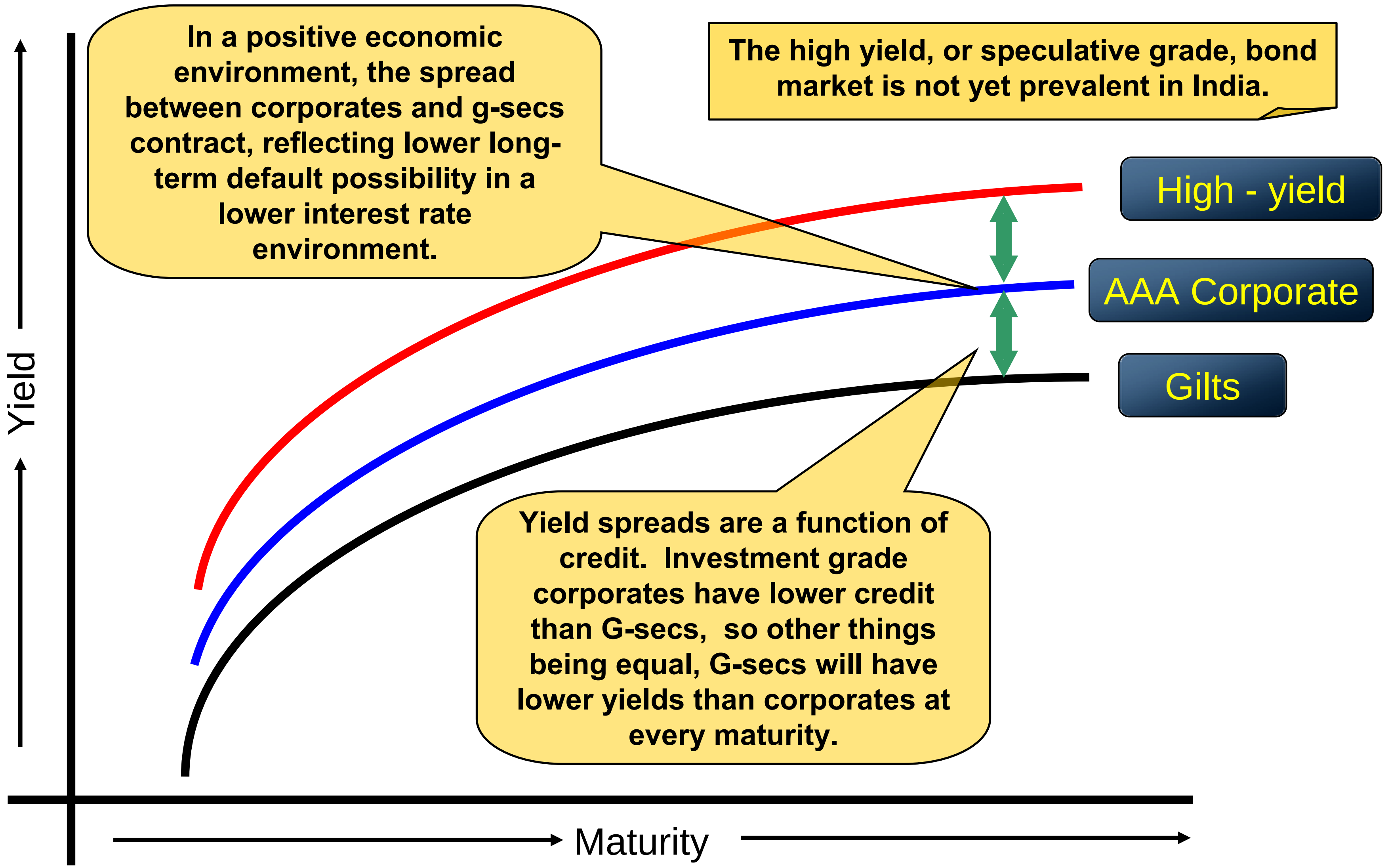


The term structure – inverted yield curve



1. An inverted curve means that the market expects interest rates to fall in future.
2. This could signal an economic slowdown, as interest rates are lowered to stimulate growth.

The concept of yield spread



Risks associated with fixed income investment

Credit Risk

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 price reduction in existing 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

Interest Rate Risk

Prices and yields have inverse relationships

Yields are influenced by interest rates

YIELD ABOVE COUPON → PRICE AT DISCOUNT

YIELD = COUPON — PRICE = PAR

PAR VALUE

YIELD BELOW COUPON → PRICE AT PREMIUM

When rates change, yields move to track the new rate

Prices move in the opposite direction to reflect the new yield

If yield = coupon rate, the bond will sell at par

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Duration

Duration measures interest rate sensitivity

In other words, how much does the price of a bond change with a change in interest rates?

Duration

+VE RELATIONSHIP	-VE RELATIONSHIP
Term to maturity	Yield to maturity
	Coupon

Math Check: Approximate price change using duration

The delta sign denotes 'change'. This means change in yield.

$$- \text{Duration} \times \Delta y \times 100 = \text{Approx. percentage price change}$$

The negative sign is because of the inverse relationship between price change and yield change

Math Check: Approximate price change using duration

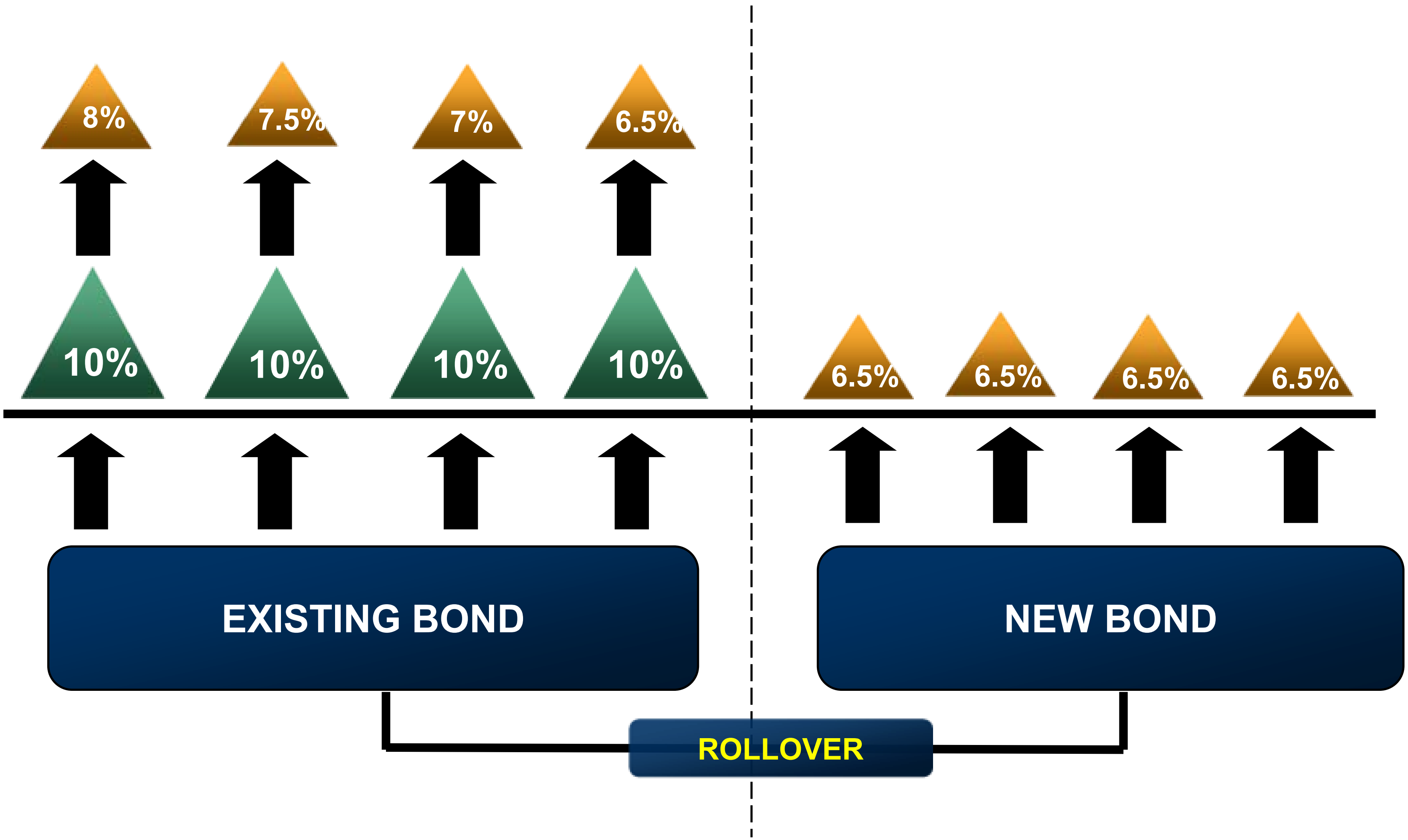
$$- \boxed{3.33} \times \boxed{0.015} \times 100 = - \boxed{5\%}$$

Practical application: Portfolio duration

Interest rate scenario	Portfolio manager action
↑	Lower Duration
↓	Higher Duration

Portfolio managers often change the duration of their securities to manage changing interest rates

Reinvestment Risk



Liquidity Risk

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

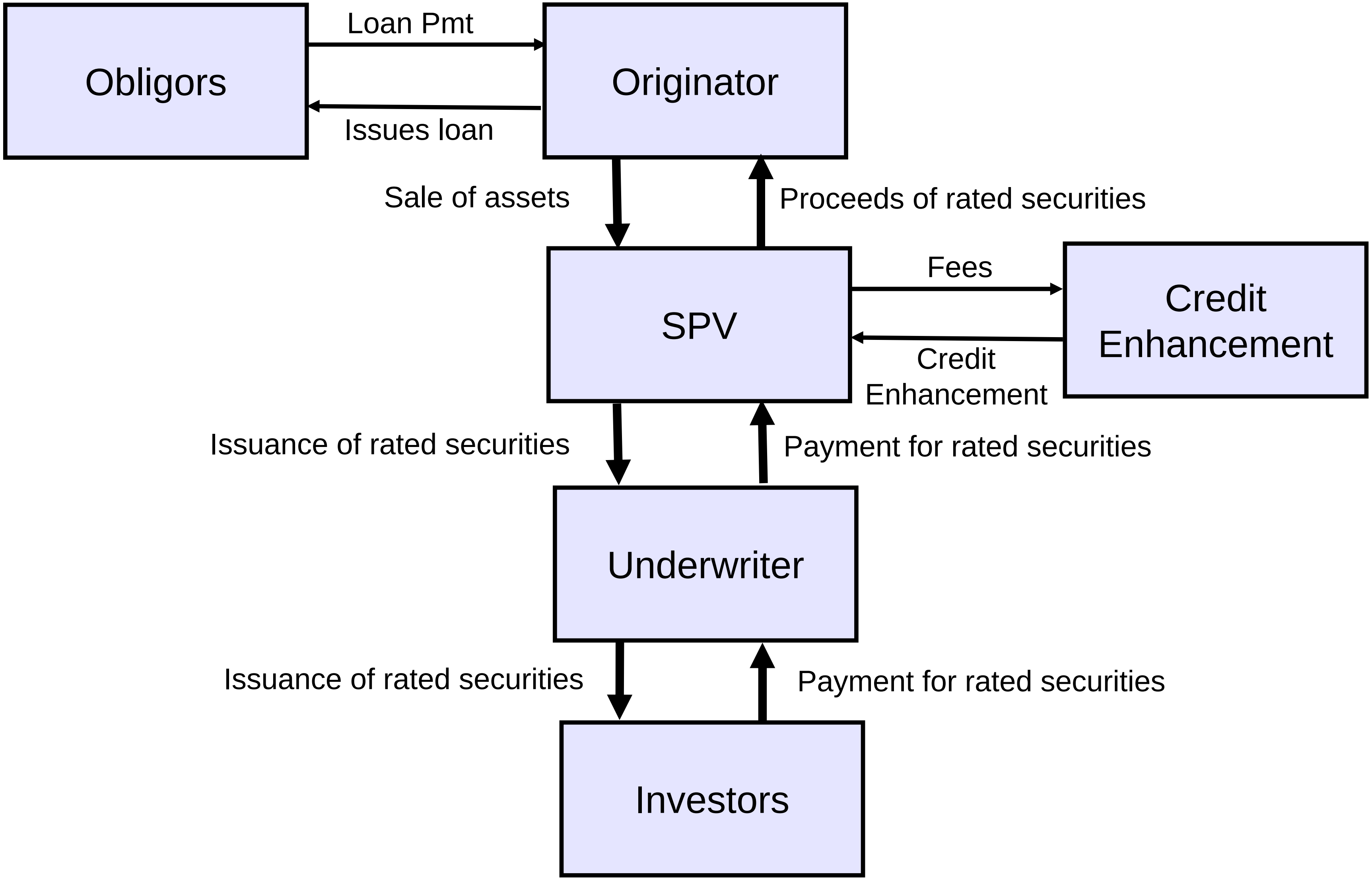
Liquidity risk is not important for hold-to-maturity investors

It is an issue for those seeking to profit from bond price movements

Liquidity risk is a function of the following factors

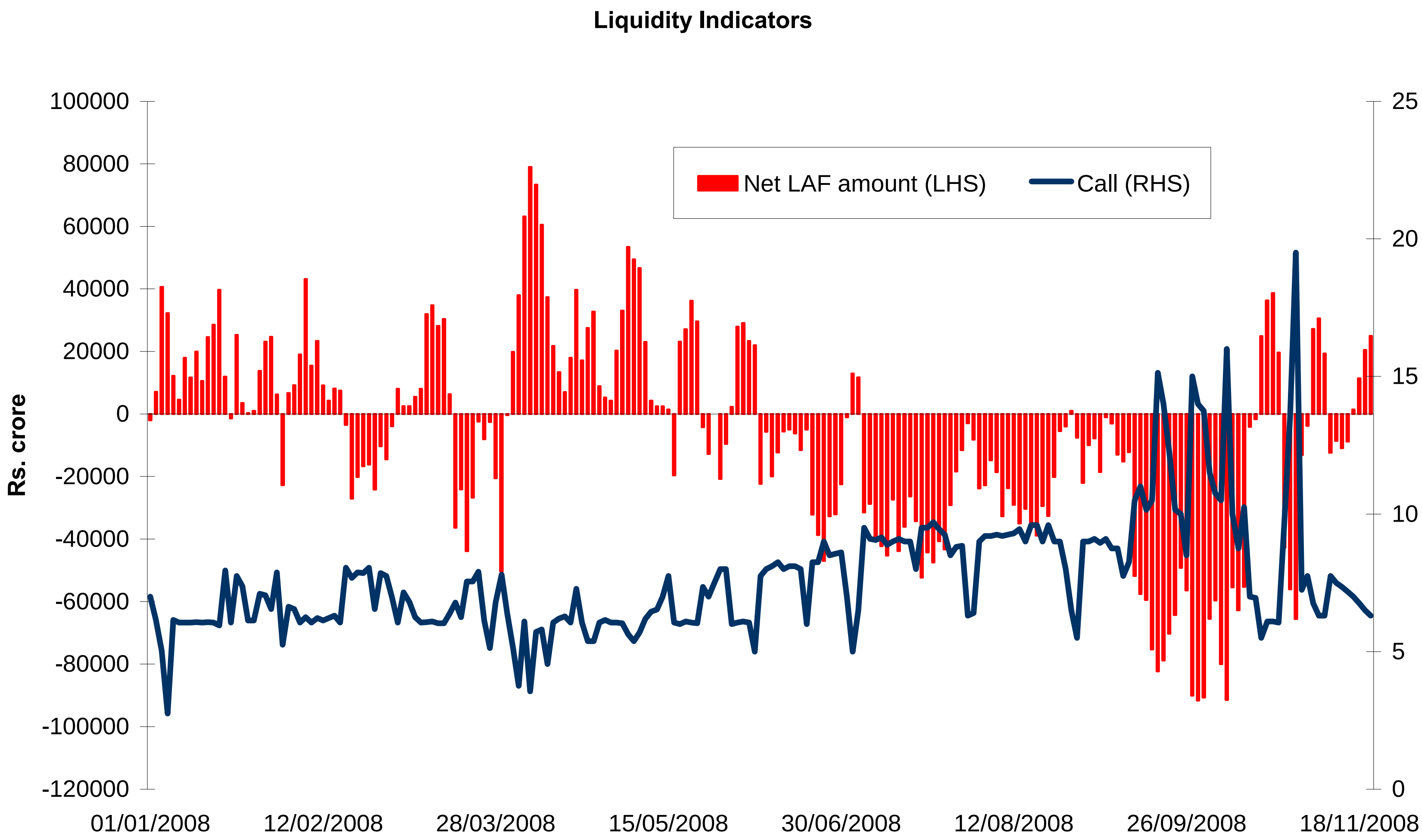
- Expectation of interest rate changes
- Number of market makers
- Comfort level with security

Securitisation – What is it all about ?



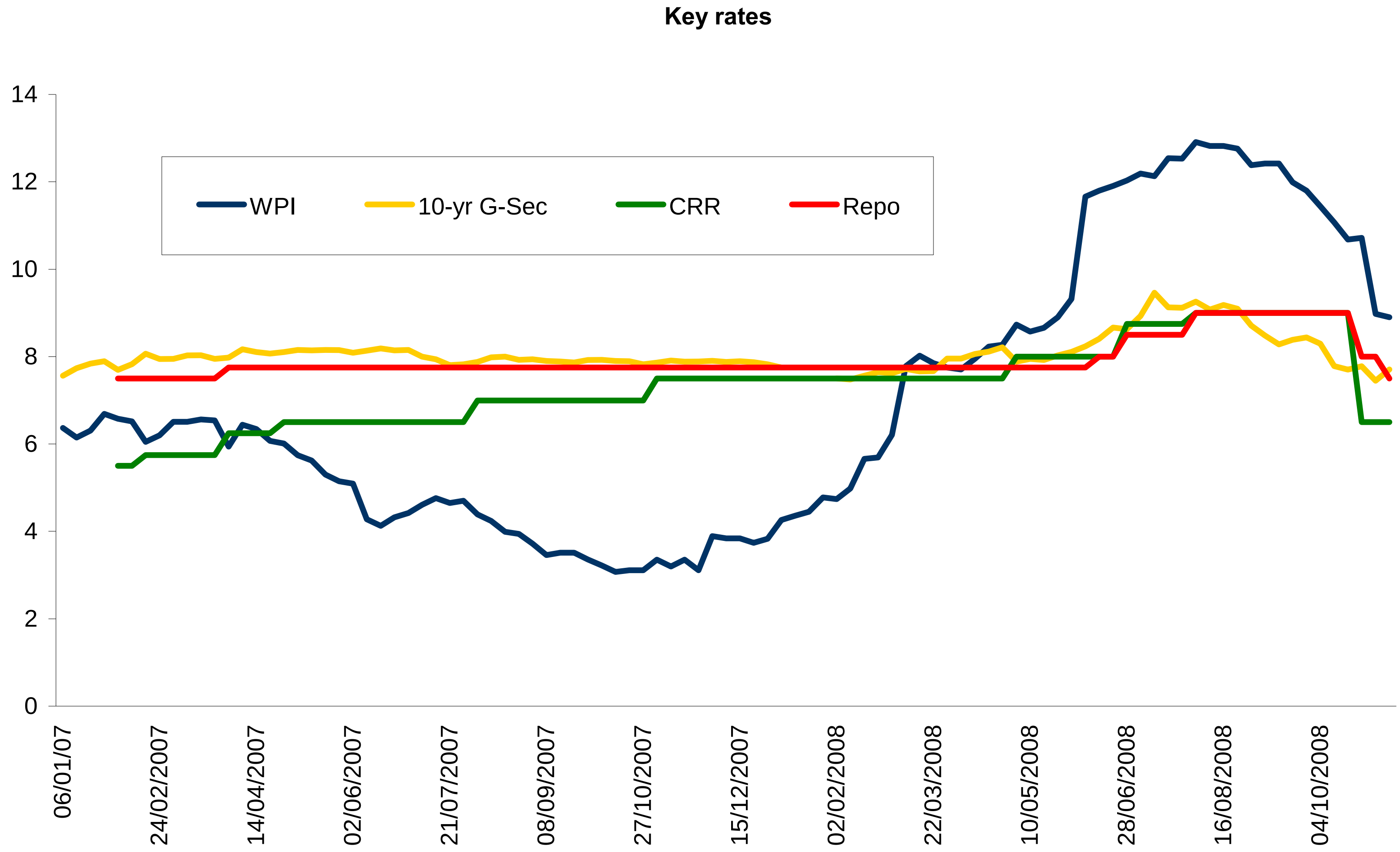
Key Macro-economic indicators for fixed income

Liquidity indicators



Source: Bloomberg, Fidelity. 20th November 2008

Key rates



Source: Bloomberg, Fidelity. 20th November 2008

Other key macro indicators

- Fiscal deficit
- Government borrowings
- Credit growth
- Deposit growth
- GDP
- Rupee

QUESTIONS ??

Thank You.