Brainteaser

- There are 25 horses, each of which runs at a constant speed that is different from the other horses'. Since the track only has 5 lanes, each race can have at most 5 horses. If you need to find the 3 fastest horses, what is the minimum number of races needed to identify them?

- Please give us feedback!   tinyurl.com/QFSFeedback

Brainteaser

Answer:

- We need 7 races to identify the 3 fastest horses

- First, we will have 5 races with 5 different horses each to find the order of the horses within each group (horses 1, 6, 11, 16, 21 won their respective races)

- We race horses 1, 6, 11, 16, and 21 in the sixth race. WOLOG, let's assume this is also the order of the results of the race. Overall, this results in the elimination of horses 4-5, 8-10, 12-15, 16-20, and 21-25.

- Next, we race horses 2, 3, 6, 7, and 11 to figure out the second and third fastest horses

Market Update

9/19/17 to 9/25/17

- German election – Merkel won, but its not that simple…
- FOMC DAY – no hike, balance sheet reduction, but markets
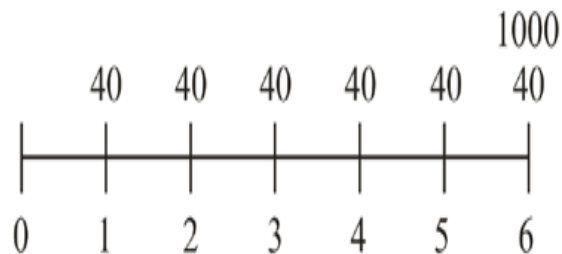- North Korea – another day, another "war"

What's Up with Rates? (and FX)

So many products, such little time

What is a Bond?

A Few Basics

- Basic bond is essentially an asset that pays cash flows (coupon) on specific dates and the principal back on ending date

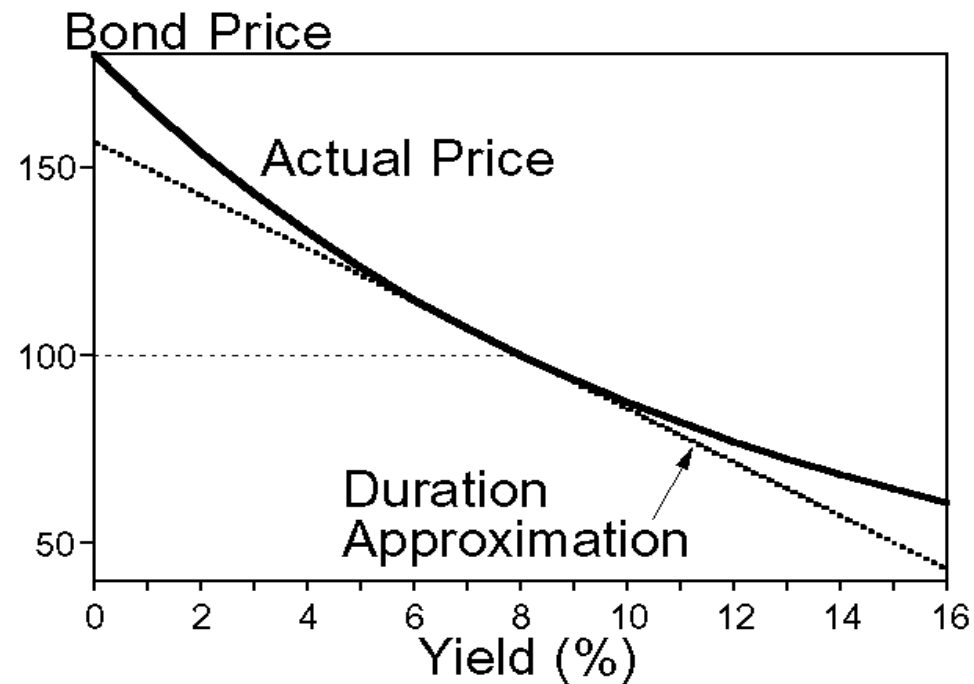- Inverse relationship between bond price and bond yield

$$\text{Bond Price} = \frac{C}{(1+i)} + \frac{C}{(1+i)^2} + \ldots + \frac{C}{(1+i)^n} + \frac{M}{(1+i)^n}$$

C = coupon payment
n = number of payments
i = interest rate, or required yield
M = value at maturity, or par value

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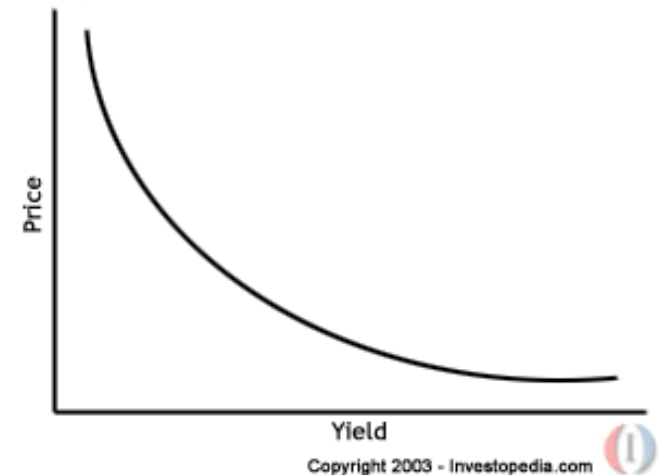
Duration & Convexity
Capital Structure and Seniority

Duration is price sensitivity of the bond to changes in yield

Convexity is the derivative of duration

Duration

More Intuitively – A Lever

Example #1   10 Year Zero-Coupon Bond   10.0 Years

Example #2   10 Year 5.0% Coupon Bond   7.99 Years

What Affects Interest Rates?

- Fischer equation: Nominal = Real + inflation expectations
- Central Bank
- Credit/Default risk
- Term Premium – bunch of different risk premiums
- Demand for the asset

The Yield Curve

Intuition & Drivers

- What influences the yield curve?
- When can it be upwards sloping? What about downwards? Flat?
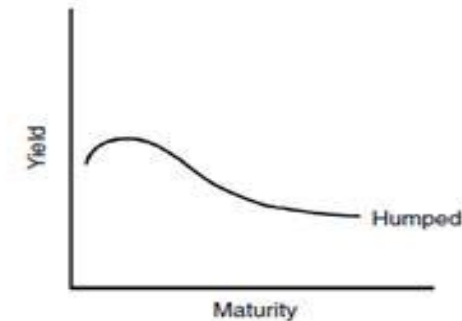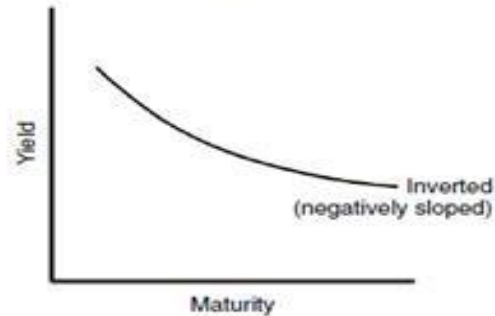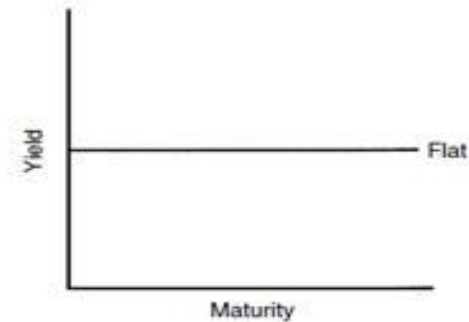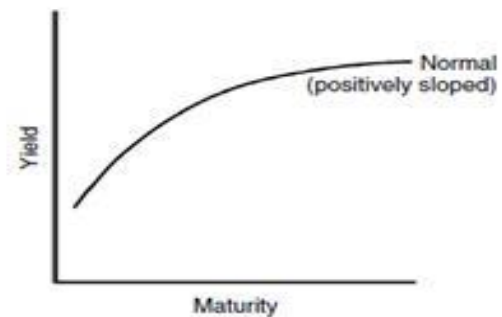
Expression

Tons of Different Ways to Trade!

- Bonds
- Bond Spreads (Different Maturity, Same Maturity Diff Bonds)
- Interest Rate Swaps
- Bond Futures
- Swaptions
- Other nonconventional stuff

Foreign Exchange

World's Biggest Market

- Foreign exchange market is biggest market in the whole world
  - Operates 24 hours a day from Sunday 5pm to Friday 5pm EST

- Trading Currencies – You always trade one currency against another
  - Effectively always taking a view that one currency will strengthen versus another currency

- Fx pricing: EURUSD 1.10 means that 1 EUR = 1.10 USD; USDJPY 120 means that 1 USD = 120 JPY
  - Therefore, if USD was to strengthen, EURUSD would go down

What Affects Currency Values

- Central Bank Policy

- Interest Rates

- Politics

- Economy / Risk / Growth

- Commodity Prices

Expression

FX Products You Can Trade

- Spot FX trading – FX view

- FX forwards – FX + rates view

- FX options – FX + vol view

- Local currency bonds – way to express view on both foreign rates + currency

- Carry trades – FX view, primary view to make money on interest rate diff.
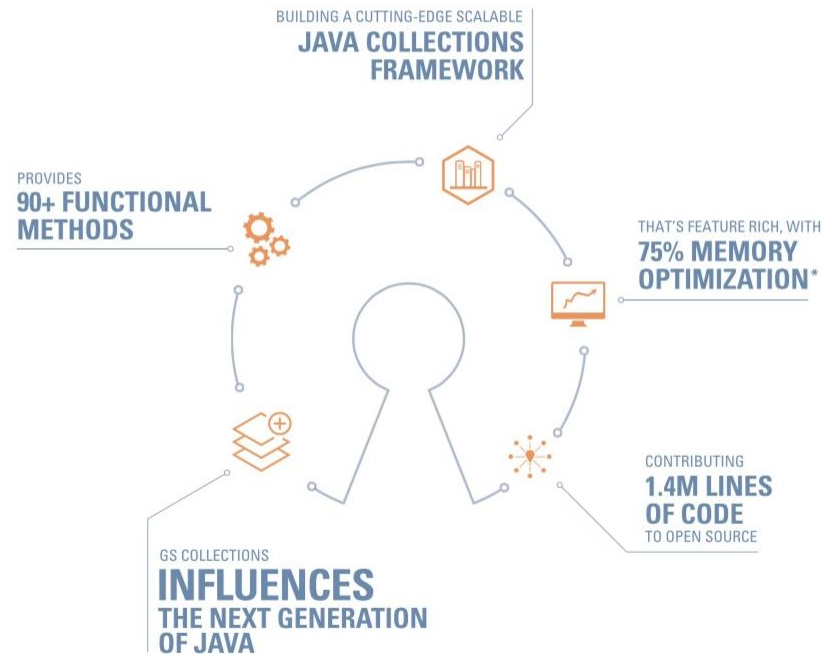
Examples

Suppose you…

- Believe Russian economy is going to do well and that oil – which Russia exports a lot of – will also go higher. What ways can you trade this?

- Believe people not accounting for North Korea risk enough – what ways can you trade this?

- Believe that people not pricing in inflation expectations for future well enough. What ways can you trade this?

Goldman Sachs Tech Talks
Tomorrow, 6:30pm in UC-25

Announcements

- Goldman Sachs Tech Talks – tomorrow, 6:30pm UC-25

- tinyurl.com/QFSFeedback
  - Let us know what topics you want us to cover for next week!

- Be on the lookout for our Mentorship Apps

- Please swipe in

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