IMPORTANT ANNOUNCEMENTS

Midterm test dry-run

- To facilitate test logistics (**Attendance is OPTIONAL**)
- Tuesday, 23 February (during recess week) starting at 10:00 am
- Purely technical dry-run

  NO module materials will be discussed during dry-run

Midterm instructions document will be posted starting Wednesday, 17 February at 8 am

Please read carefully!

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Midterm information

Midterm test: **Tuesday, 2 March 2021** (Week 7)

- During the scheduled lecture session
- Students must enter the Zoom waiting room by
  - 10:00 am (LA1), or
  - 14:00 (LA2)
- 60 minutes long; 25 MCQs

- Open book/notes
- NO internet
- NO backward navigation, randomized order

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Midterm information (cont.)

- You will need 2 devices:
  - 1 laptop (for Examplify & soft-copy notes)
    - NO IPAD
    - NO INTERNET DURING EXAM SESSION
  - Another device (e.g., phone/iPad)
    - Connected to internet for Zoom proctoring
- 2 calculators (1 financial & 1 scientific/graphing)
  - NO Excel
- NO other electronic devices
- NO second monitor

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FIN2704/X
Week 6

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Bond valuation

$$\text{Bond Value} = \text{Coupon}\left[\frac{1-\frac{1}{(1+r_d)^N}}{r_d}\right] + \frac{\text{Face Value}}{(1+r_d)^N}$$

PV of the coupon payments → annuity

PV of par value

The appropriate discount rate (r_d) is the <u>prevailing market interest rate</u>; not when you buy the bond

- At any given point in time, the appropriate r_d should be the same across all bonds with the same maturity and credit risk

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Bond valuation (cont.)

$$\text{Bond Value} = \text{Coupon}\left[\frac{1 - \frac{1}{(1+r_d)^N}}{r_d}\right] + \frac{\text{Face Value}}{(1+r_d)^N}$$

At issuance

- If coupon rate is set to be equal to r_d, then the bond would be issued at par (YTM = r_d)

After issuance

- r_d may change; coupon rate does not change
- Therefore, bond price would change
  - The bond YTM should be equal to the prevailing r_d
  - YTM does not depend on the market interest rate when the bond was issued

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Yield to maturity (YTM)

$$\text{Current bond price} = \text{Coupon}\left[\frac{1-\frac{1}{(1+\text{YTM})^{N}}}{\text{YTM}}\right]+\frac{\text{Face Value}}{(1+\text{YTM})^{N}}$$

- The discount rate that will equate the calculated bond PV and the currently observed bond price
- In this module, we typically assume that YTM is the same as the prevailing market interest rate for bonds with the same risk
- YTM is typically quoted as APR, rather than EAR.

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Discount, par, premium bonds

- The price investors pay for a particular bond (discount/par/premium) would be related to:
  - The bond's coupon rate, as well as
  - The prevailing market's interest rate
- Most bonds are issued at par
  - Coupon rate is set equal to the prevailing market interest rate appropriate for the bond's maturity and risk
- Bonds are fairly priced
  - When a bond's coupon rate is lower than the appropriate prevailing market interest rate, the bond will be selling at discount
  - When a bond's coupon rate is higher than the appropriate prevailing market interest rate, the bond will be selling at premium

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Zero-coupon bond

No coupon payments

- PV of bond should be lower than the face value

$$\text{Bond Value} = \frac{\text{Face Value}}{(1 + r_d)^N}$$

Additional notes

- Sinking fund
  - Used to reduce credit risk
  - Issuer will accumulate sinking fund when it has excess cash flow
- Current yield
  - Not very useful
- Example on slides 41-42:
  - Coupon rate is set at bond issuance and does NOT change

Week 2 – turnover ratios

What should be in the denominator of the turnover ratios?

In the exam, unless otherwise stated, to calculate the turnover ratios, please use ~~average figures i~~n the denominators.

→ Notes on Tutorial 1 solution slides (slide 15)

Revised to:

In the FIN2704/X midterm and final exam, unless otherwise stated, to calculate the turnover ratios, please use **the year-end figures** in the denominator

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Week 6
List of topics

Note:

You are responsible for all materials covered in the pre-recorded videos posted on LumiNUS, unless they are marked "not examinable". This list only serves to help you in your revisions.

Week 6 topics

- Bond
  - Debt instrument
  - Finite lifetime
  - Fixed-income investment
- Bond terminologies
  - Par value
  - Coupon & Coupon rate
  - Maturity/maturity date
  - Term
- Sinking fund
- Bond indenture
- Callability & Putability
- Seniority
- Debenture
- Basis points
- Convertibility
- Protective covenants

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Week 6 topics (cont.)

Bond valuation

- Bond value = PV of coupons + PV of par

- Yield to Maturity (YTM)

- Par bond
  - Bond that sells at exactly its par value
- Discount bond
- Premium bond

- Zero-coupon bond

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Week 6 topics (Cont.)

- Bond Pricing Theorems
- The effect of time on bond prices
  - Bond prices are pulled to par
- Bond ratings

- Government bonds
- Taxable bonds
- Floating rate bonds (floaters)
- Other types of bonds

- Bond markets
- Term structure of interest rates (yield curve)
- Factors that affect bond yields