

# FIN2704/X

## Week 7

2

## Dividend Growth Model

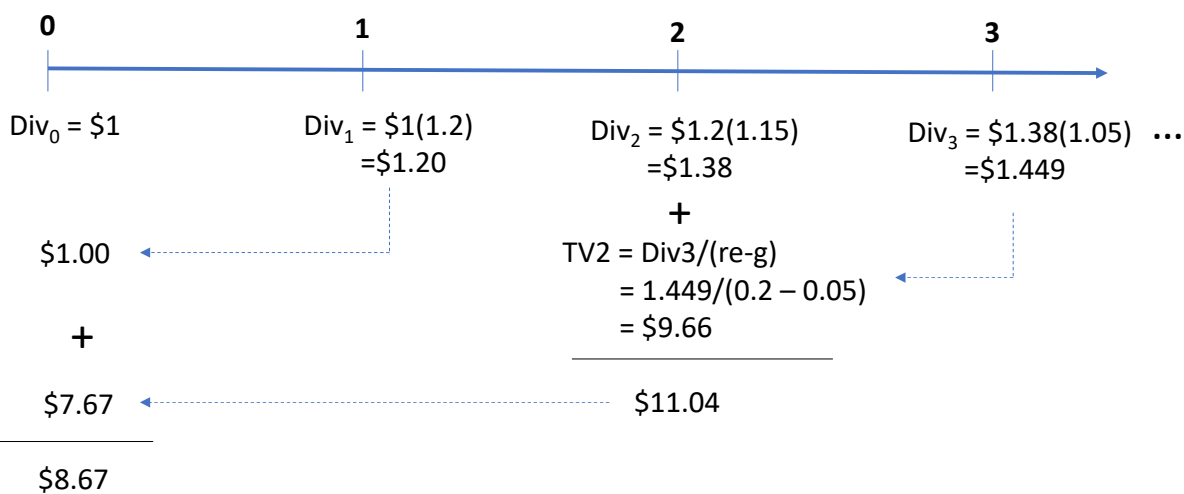
- Constant dividend
- Constant dividend growth
- Supernormal growth
- **Non-constant growth example (Week 7 slide 32)**

Suppose a firm is expected to increase dividends by 20% in one year and by 15% two years from now. After that, dividends will increase at a rate of 5% per year indefinitely. If the last dividend was \$1 and the required return is 20%, what is the price of the stock?

3

## Non-constant Growth Example (Wk 7 slide 34)

$R_e = 20\%$



## Another example

From Quick Review– Part I (Wk 7 slide 36)

1. What is the value of a stock that is expected to pay a constant dividend of \$2 per year if the required return is 15%?
  - Perpetuity
  - $2/0.15 = \$13.13$
2. What if the company starts increasing dividends by 3% per year, beginning with the next dividend? The required return stays at 15%.
  - Growing perpetuity
  - $(2*1.03)/(0.15 - 0.03) = \$17.17$

5

## Expected future dividend

- Some firms do not pay dividend
- Firm valuation using the dividend growth model is based on the valuation of EXPECTED FUTURE dividends
  - A firm may not be paying dividends now (or in the past), but if it is expected to pay high dividends in the future, then it may be valued highly
  - We will have further discussion on this later when we discuss firm growth.

6

## Preferred stocks

- Preferred dividend payments typically stay constant
  - Typically can be treated as ordinary perpetuity
- Some preferred shares have maturity, some may grow with the stock price, etc
  - You should be able to calculate the value of perpetuity (or annuity) once you are given the growth rate
- Preferred dividends can be deferred indefinitely & most are cumulative (Wk 7 slide 49)
  - Whoever holds the preferred stocks (at the time of the dividend payment) will receive the accumulated preferred dividend

7

## Corporate value model

- Value of the entire firm equals the present value of the firm's **free cash flows**
  - Projected CFFAs
  - Use WACC to discount
- WACC
  - A firm's after-tax **equity** and **debt financing** costs
  - Averaged using the market value weightage of their relative fraction in the total firm financing

8

## Intrinsic & market values

- Market value of a firm: how much the market value the firm
  - Includes market value of equity + market value of debt (slide 59)
- Intrinsic value of a firm: the PV of expected future cash flows
  - Expected future cash flows
  - Discount rate
- In equilibrium, market value of the firm should be equal to its intrinsic value

9



## Multiples Method (not examinable)

- Basically, relies on the ratio between the market price of an asset and some relevant characteristics of an asset
- To apply the multiples method, you need:
  - Similar firms, and
  - A mean to scale prices
- The multiples method can serve as a rough check on values obtained using other valuation methods such as Corporate Value

10

# FIN2704/X

## Week 6

11

## Week 6 slide 52

30-year semi-annual coupon bonds with 10% coupon rate, and 5% interest rate.

Suppose the face value of the bond is \$100

What is the price of this bond at issuance?

$I/Y = 2.5$ ,  $PMT=5$ ,  $N=60$ ,  $FV=100$ , [CPT]  $PV = -177.2716$

The price of the bond at issuance is 177% of its face value ( $=177.21/100$ )

12

## Bond price pulled to par

- As bonds get closer and closer to its maturity, there are fewer and fewer coupon payments, and the investors are also closer to receiving the face value of the bonds
  - Therefore, the price of the bond will be pulled to par as the bond gets closer to its maturity
- While the price of premium bond will decline over time, the buyer will benefit from the high coupon rate associated with premium bonds, which is higher than the prevailing market interest rate

13

# Week 7

## 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.

14

## Week 7 topics

- Cash flows from a stock:
  - Dividends
    - Firms are not required to pay dividends
    - Not a liability until the dividend has been declared by the Board
  - When you sell your shares
- Value
  - Book value
  - Market value
  - Intrinsic value
    - Size, timing, and required rate of return
- Value of a stock: PV of expected future cash flows

15

## Week 7 topics (cont.)

### Dividend Growth Model

- Constant dividend
  - Perpetuity
- Constant dividend growth
  - Growing perpetuity
- Supernormal growth
  
- Market equilibrium
  - Expected return
    - Dividend yield & Capital gains yield
  - Required return
  
- Preferred stock

16

## Week 7 topics (cont.)

### Corporate Value Model

- PV of a firm's free cash flows
- Projected CFFAs

17