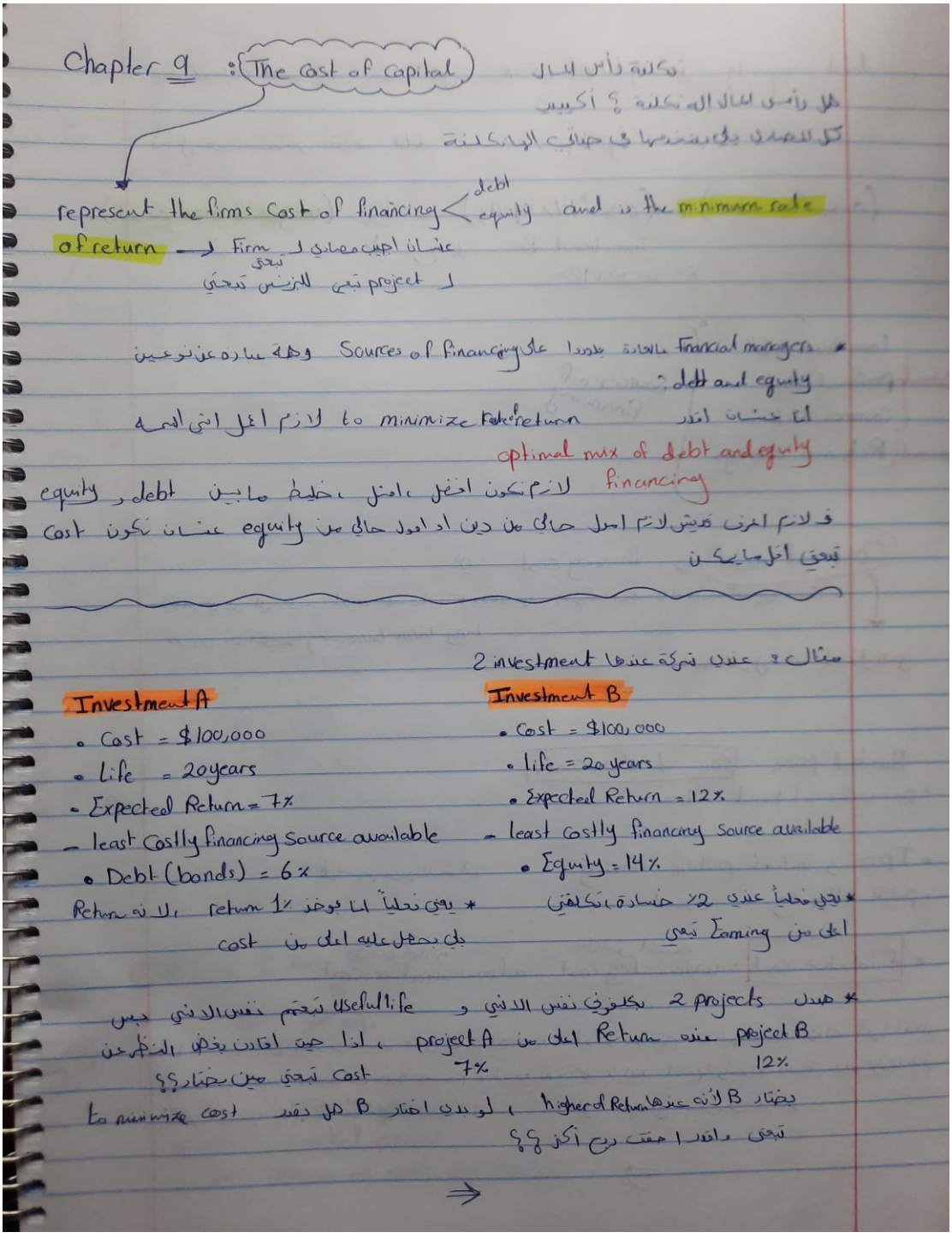
ASIL SHAAR→((تلخيص فاينانس 2(تشابتر 9)



debt or equity ← optimal max

equity ٪50 , debt ٪50

(0.50 * 6٪ debt) + (0.50 * 14٪ equity) = 10٪ (weighted average cost)

Investment B

10٪ أكبر من 12٪

external { long term debt, preferred stock, common stock
internal { Retained earnings

} Sources of financing

Cost of debt → financing cost

↓

تكلفة الدين / التمويل طويل الأجل

long term borrowing

- Market price = 1100 total proceeds
- par value of bond = 1,000

- IPO → initial public offering
- public offering

- Flotation Cost : underwriting cost (تكاليف اكتتاب) , administrative cost (تكاليف إدارية)

⇒

Net proceeds = total proceeds - flotation cost

Ex : Flotation Cost = $4

Market price = 1100

= 1100 - 4 = 1,096

Net proceeds

عبارة عن Fund يلي بتوصل للشركة نتيجة بيع security ← تمثل كل financial paper

are the funds actually received by the firm from the sale of a security.

Flotation Costs

هي تكلفة اصدار وبيع security

are the total costs of issuing and selling a security. They include 2 components:

1 - underwriting Costs - compensation earned by investment bankers for selling the security.

هي عملية selling ، هي ايش بتكلف عشان ابيع بالاسهم

2 - Administrative costs - issuer expenses such as legal, accounting, and printing

NP → flotation rate = 2% اعطانا بعطيني اياها

$NP = P(1 - F.R)$

$1100(1 - 0.02) = 1,100 * 0.98 = 1,078$

Yield to maturity = YTM = Cost of debt

$$K_d = YTM = \frac{I + \frac{Par - \cancel{MP}\,NP}{n}}{\frac{Par + \cancel{MP}\,NP}{2}}$$

(2) الاعتبار

K_d → cost of debt

- I = Coupon payment = C * par
- MP = Market price
- N = remaining years to maturity

Questions

End of years	Cash Flow
0	$960
1-20	-$90
20	-$1000

market price

$960

discount

$$\frac{90 + \frac{1000 - 960}{20}}{\frac{960 + 1000}{2}} = \frac{90 + 2}{980} = 9.388\%$$

before tax

After tax

$$K_{d\ \text{after tax}} = K_d(1 - T)$$

$$0.09388(1 - 0.4)$$

$$= 0.09388\ (0.6) = 0.0563 = 5.63\%$$

Cost of preferred stock

Pricing of preferred stock

- $P = \frac{D_0}{r}$
- Zero growth model

- Cost of preferred stock
- Return = Cost

- $P = \frac{D_0}{r}$
- $P = \frac{D}{K_p}$
- $K_p = \frac{D}{P}$

$$K_p = \frac{D}{P} \Rightarrow$$

Ex: [Duchess Corporation is contemplating the issuance of a 10% preferred stock that they expect to sell for $87 per share. The cost of issuing and selling the stock is expected to be $5 per share.] The dividend is $8.70 (10% * $87). The net proceeds (Np) equal $82 ($87 - $5), the share price less the flotation costs. The cost of Duchess preferred stock is:

Dividends = 0.1 * 87 = 8.70

Mp = 87

flotation Cost = 5 Np = Mp - F.C → 87 - 5 = 82

$K_p = \frac{D}{N_p} = \frac{8.7}{82} = 0.106 = 10.6\%$

Cost of preferred stock ↓

after tax مصنوع اجزم

Cost of Common Stock يعني بدي اصدر اسهم جديدة

لا تخلو حالات من common equity بشكل عام في مصدرين للتمويل:

① تصدر اسهم جديدة New issues of C.S

② او تحول حالات من Retained earnings = (Current "existing" C.S)

Price of common stock

- Constant growth model

- $P = \frac{D_1}{r-g}$ $r - g = \frac{D_1}{P} + g$ $r = K_c = \frac{D_1}{P} + g$

ليش استخدمنا P ما استخدمنا Np

(لانه ما عندي flotation cost مش new issues بس عملتم reselling ما تكلفت اشي)

Flotation cost = 0

NP = Tp - F.C

NP = Tp - 0

NP = TP

NP = Market price

ex: Duchess Corporation wishes to determine is **cost of common stock** equity, r_s. The market price, P_0 of its common stock is $50 per share. The firm expects to pay a dividend, D_1 of $4 at the end of the coming year, 2016. The dividends paid on ~~6 year~~ the outstanding stock over the past 6 years (2010 - 2015) were as follows

year	dividend
2015	$3.80
2014	$3.62
2013	$3.47
2012	$3.33
2011	$3.12
2010	$2.97

$$K = \frac{D_1}{P} + g = \frac{4}{50} + 0.05 = 13\%$$

$$D_{2015} = D_{2010}(1+g)^n$$

$$\frac{3.80}{2.97} = \frac{2.97}{2.97}(1+g)^5$$

$$\sqrt[5]{1.28} = \sqrt[5]{(1+g)^5}$$

$$1.05 = 1 + g$$

$$-1 \quad -1$$

$$g = 5\%$$

Capital asset pricing model (CAPM)

$r = R_F + B(R_M - R_F)$ — $(R_M - R_F)$ = RP

$K_c = r = R_F + B^* (RP)$ — RP → Risk premium

K_c → بس لـ current

> ليش بنقدر استخدم CAPM لـ current ؟
>
> لانه هدول الاسهم انطرحوا في السوق .
> انعرف قديش همة اثروا في B .

ex: $RF = 7\%$
$B = 1.5$
$RM = 11\%$

$Kc = RF + B(RM - RF)$
$7 + 1.5(4) = \boxed{13\%}$

Cost of Retained Earnings

(Internal source of financing) اما بستخدم fund موجود عندي بالشركة

نفس ما بحسب لـ current

$r_r = r_s$

Cost of a new issue of common stock كيف بدي احسب

لما بدي اطرح اسهم بالسوق لأول مرة ، بالتكون في عندي IPO

لازم يكون عندي underpricing سعر السهم below ← Current market price

Np = market price − Flotation cost − underpricing OR + overpricing

$r_n = \frac{D_1}{Np} + g$

⟹

Ex: Duchess Corporation Common stock is Currently selling at $50 per share. To determine its Cost of new Common stock r_n, Duchess Corporation has estimated that on average, new shares can be Sold for $47. The $3 per share underpricing is due to the Competitive nature of the market. A second cost associated with a new issue is flotation costs of $2.50 per share that would be paid to issue and sell the new shares. The Total underpricing & flotation costs per share are therefore $5.50.

NP = total proceeds − flotation cost − underpricing
50 − 2.50 − 3 = 50 − 5.5 = 44.5$ = NP

$K_n = \frac{D_1}{NP} + g = \frac{4}{44.5} + 0.05 = 0.0898 + 0.05$
$= 13.98\% \approx 14\%$

(g ↓ اوجيتو بل)

ليش Cost of new Issues اعلى من Cost of Current C.S ؟؟

لانه في عندي additional cost انا بتكلفها

Weighted Avarage cost of capital (WACC)

كنا طلعين بل

- Cost of debt k_d = 5.6 % after tax
- " " Prefeerd stock, r_p = 10.6 %
- " " Retained earnings, r_r = 13 % Current Commen stock
- " " new commen stock, r_n = 14 %

⇒

The company uses the following weights in calculating its weighted average cost of capital :-

- long term debt = 40% * 5.6% = 2.2%
- preferred stock = 10% * 10.6% = 1.1%
- common stock equity = 50% * 13% = 6.5%

WACC = 9.8%

Al Jameel Center has determined its optimal capital structure which is composed of the following sources

Source of capital	Target market proportions
long term debt	30%
preferred stock	5%
common stock equity	65%

Debt : Al jameel center can sell a 20-year, $1000 par value, 9% bond for $980. A flotation cost of 2% of the face value would be required in addition to the discount of $20.

Preferred stock : Al jameel Center has determined it can issue preferred stock at $65 per share par value. The stock will pay an $8 annual dividend. The cost of issuing and selling the stock is $3 per share.

Common stock : Al jameel center common stock is currently selling for $40 per share. The dividend expected to be paid at the end of the coming year is $5.07. it's dividend payments have been growing at a constant rate for the last five years. Five years ago, the dividend was $3.45. It is expected that to sell, a new common stock issue must be underpricing at $1 per share and the firm must pay 1$ per share in flotation costs. Additionally, the firms marginal tax rate is 40%.

Calculate Al Jameel Centers weighted averge cost of capital?

⇒ Solution

[1] Cost of Debt

$K_D = YTM = \dfrac{I + \frac{par - NP}{n}}{\frac{par + NP}{2}} = \dfrac{90 + \frac{1000 - 960}{20}}{\frac{1000 + 960}{2}}$

$= 9.38\%$

* 9% $I = C^* par$

$0.09 * 1000$

$= 90\$$

* $NP = p(1 - FR)$

$= 1000(1 - 0.02)$

$= 980 - 20$

$= 960\$$

$K_{D_{after\ tax}} = K_D(1 - 0.4)$

$= 0.0938 * 0.6$

$= 0.056 = 5.6\%$

[2] Cost of preferred stock

$K_P = \dfrac{D_0}{NP} = \dfrac{8}{65-3} = \dfrac{8}{62} = 12.9\%$

[3] Cost of common stock

$MP = 40$

1 FC $Np, 40 - 1 - 1 = 38$

1 underpricing

$D_1 = 5.07$

5 years ago $D_0 = 3.45$

$K_c = \dfrac{D_1}{NP} + g$

$\dfrac{5.07}{38} + 0.08$

$= 21.3\%$

$D_1 = D_0(1+g)^n$

$5.07 = 3.45(1+g)^5$

$\sqrt[5]{1.469} = \sqrt[5]{(1+g)^5}$

$1.08 = 1 + g$

$-1 \quad -1$

$g = 8\%$

$$WACC = w_d * K_{d\,after\,tax} + w_p * k_p + W_c * k_c$$

$$(0.3 * 5.6) + (0.05 * 12.9) + (0.65 * 21.3)$$

$$1.68 + 0.645 + 13.845 = \boxed{16.17\%}$$