

UNIT: ACCT2007 – Finance for Business

QUESTION 1 (10 marks)

- a) Craig wants to invest in four-year bonds that are currently priced at \$878.47. These bonds have a coupon rate of 9.46 percent and pay semiannual coupons. What is the current market yield on this bond? (4 marks)

Answer:

Using a financial calculator provided an exact YTM of 13.49 percent

Enter	8	\$47.30	-\$878.47	\$1,000	
	N	i%	PMT	PV	FV
Answer		6.75%			

This is the semi-annual yield (i/m) the annual yield is: Annual yield = $6.75\% \times 2 = 13.49\%$
YtM = 13.49%

- b) What economic factors affect the shape of the yield curve? Explain. (3 marks)

Answer: Three economic factors determine the shape of the yield curve: (1) the real rate of interest; (2) the expected rate of inflation; and (3) the interest rate risk.

As an economy grows, the real rate of interest will increase, causing the yield curve to have an upward slope. Similarly, if investors think that inflation will increase in the future, they will require a higher inflation premium, again forcing an upward tilt to the yield curve. Since the observed or nominal interest rate is a combination of these two factors (see Chapter 2), the slope of the yield curve will shift upward. The opposite will happen during an economic downturn. The third factor that we discussed earlier in this chapter will cause longer term securities to have a higher yield than shorter term securities, again giving the yield curve an upward bias.

- c) Under what economic conditions would investors demand floating rate bonds? (3 marks)

Answer: As interest rates increase, the coupons of fixed-rate bonds do not change, and investors receive interest payments that are below the market rate. However, investors of floating-rate notes will not be hurt in an increasing interest rate scenario. Thus, demand from investors will increase when interest rates are expected to increase.

QUESTION 2 (10 marks)

- a) You have forecast the following free cash flows for Green Fields Ltd over the next 5 years:

Year	FCF
1	\$400,000
2	\$500,000
3	\$660,000
4	\$800,000
5	\$850,000

You estimate that from year 6 onwards Green Fields' growth will be 5% per annum. You also estimate that Green Fields' WACC is 12%. The company has no excess cash, debt of \$2 million, and 1 million shares outstanding. If Green Fields' current market share price is \$8.02, should you buy shares in the company? (7 marks)

Answer: We need to value the shares using our estimates and the discounted free cash flow model and then compare this value to the market price of the shares.

First we can calculate the terminal value of Green Fields:

$$V_5 = \frac{FCF_5 (1 + g_{FCF})}{(r_{WACC} - g_{FCF})}$$

$$= \frac{\$850,000 (1 + 0.05)}{0.12 - 0.05} = \frac{\$892,500}{0.07} = \$12,750,000$$

Next, using the estimated free cash flows from years 1 to 5 and the terminal value at the end of year 5, we can estimate the enterprise value:

$$V_5 = \frac{\$400,000}{1.12^1} + \frac{\$500,000}{1.12^2} + \frac{\$660,000}{1.12^3} + \frac{\$800,000}{1.12^4} + \frac{\$850,000}{1.12^5} + \frac{\$12,750,000}{1.12^5}$$

$$= \$9,450,934$$

Note the last term represents finding the present value of the terminal value. Equivalently, when using the financial calculator it is better to add the 2015 FCF to the terminal value (\$850,000 + \$12,750,000 = \$13,600,000) and enter this as the year 5 cash flow.

Financial calculator:

0 CFi

400000 CFi

500000 CFi

660000 CFi

800000 CFi

13600000 CFi

12 i

NPV

Answer: \$9,450,934

This is the estimated enterprise value now.

Value per share is:

$$P = \frac{\$9,450,934 + 0 - \$2,000,000}{1} = \$7.45$$

That, is add the enterprise value estimation to zero excess cash and then subtract debt \$2 million to get total value of equity, then divide by the number of shares to get the estimated value per share.

This estimated share value is less than the market value of a share (which is \$8.02). If you are confident in your estimates you would therefore not buy Green Fields shares because they appear overpriced in the market.

- b) Each quarter, Prestige Ltd pays a dividend on its perpetual preference shares. Today the shares are selling at \$63.81. If the required rate of return for such shares is 18.0 percent, what is the quarterly dividend paid by this company? (3 marks)

Answer:

$$P_0 = \$63.81; R = 18.0\%$$

$$P_0 = \$63.81 = \frac{D}{0.18}$$

$$D = \$63.81 \times 0.18 = \$11.49$$

$$\text{Annual dividend} = \$11.49$$

$$\text{Quarterly dividend} = \$11.49/4 = \mathbf{\$2.87}$$

QUESTION 3 (10 marks)

What are the advantages and disadvantages of going public? (10 marks)

Going public has a number of potential advantages. The amount of equity capital that can be raised in the public equity markets is typically larger than the amount that can be raised through private sources. Once an IPO has been completed, additional equity capital can usually be raised through follow on seasoned public offerings at a low cost. Going public can enable an entrepreneur to fund a growing business without giving up control. After the IPO, there is an active secondary market in which shareholders can buy and sell its shares. Publicly traded companies find it easier to attract top management talent and to better motivate current managers if a company's shares are publicly traded.

There are also several disadvantages to going public. One disadvantage of going public is the high cost of the IPO itself. The costs of complying with ongoing ASIC disclosure requirements also represent a disadvantage of going public. The transparency that results from this compliance can be costly for some companies. Finally, some investors argue that being listed encourages managers to focus on short-term profits rather than long-term wealth maximisation.

QUESTION 4 (10 marks)

a) Define and discuss the concept of the optimal capital structure. (3 marks)

Answer: Students must define a firm's capital structure and how it is measured, and then proceed to discuss WACC and optimal capital structure (e.g., the capital structure that maximises the value of the firm by minimising the firm's WACC).

b) Discuss and interpret measures of financial leverage and how they impact shareholder returns and risk. (4 marks)

Answer: Students must discuss the concept of financial leverage and how it is measured, followed by a discussion of specific forms of debt financing how the firm and its shareholders are impacted via the use of financial leverage.

c) Distinguish between business and financial risk. (3 marks)

Answer: Students must define business and financial risk and the factors influencing both of them, providing examples specific to a firm. They should also explain the concept of total risk and the use of financial leverage in a firm.

QUESTION 5 (10 marks)

Assume that tax on dividends is greater than the tax on capital gains in the hands of shareholders, that there are transaction costs (including issuance costs) and that information asymmetry exists between managers and shareholders. Given these assumptions, firms are behaving irrationally if they continue to pay dividends while also issuing new shares to raise funds for investment opportunities. Explain and critique this statement, referring where relevant to dividend policy theories in your discussion. (10 marks)

Answer: Given the assumption of transaction costs, it would be cheaper for a firm to use retained earnings to fund investment opportunities than to issue new shares. Hence, if a firm pays dividends (and thus does not retain all earnings) and also issues new shares, it is incurring higher costs for those funds and consequently reducing free cash flows and firm value. Furthermore, if the tax on dividends is greater than the tax on capital gains, investors may be better off if the cash flows are retained and reinvested as, other things equal and assuming investment in projects that are not NPV negative, firm value should rise. This also suggests that firms paying dividends but also issuing new shares to raise funds for investment opportunities are behaving irrationally. A firm, however, might engage in this behaviour so as to maintain a relatively stable dividend policy over time. The benefits of this may be seen by managers to outweigh the potential costs of the behaviour. The main reasons for seeking to maintain a stable dividend policy relate to dividend clientele effects and information content of dividends.

The clientele effect suggests a firm has historically paid dividends should continue to pay dividends so as to meet the needs of shareholders with a preference for that dividend policy. Due to transaction costs, even if the tax on dividends is greater than the tax on capital gains, it would be costly for shareholders to switch investments or try to create home-made dividends.

Signalling theory also suggests the maintenance of a stable dividend policy over time. In the presence of information asymmetry, dividends arguably have information content. Hence a decision to cut or discontinue paying a dividend may send the wrong signals to the market about earnings (suggesting a drop in earnings in the future). Managers could of course try to explain to investors that the reason for the dividend cut relates to the need for funds for great investments. However, due to competitive pressures, they may not be able to provide sufficient detail to convince the market of the value of these investments.

END OF EXAM