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Dividends and Taxes Your aunt is in a high tax bracket and would like to minimize the tax burden of her investment portfolio. She is willing to buy and sell in order to maximize her aftertax returns, and she has asked for your advice. What would you suggest she do? page 509

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Dividends versus Capital Gains If the market places the same value on \$1 of dividends as on \$1 of capital gains, then firms with different payout ratios will appeal to different clienteles of investors. One clientele is as good as another; therefore, a firm cannot increase its value by changing its dividend policy. Yet empirical investigations reveal a strong correlation between dividend payout ratios and other firm characteristics. For example, small, rapidly growing firms that have recently gone public almost always have payout ratios that are zero; all earnings are reinvested in the business. Explain this phenomenon if dividend policy is irrelevant.

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Dividends and Company Life Cycle How does the life cycle of a company help explain dividend payments? What evidence is there to suggest that the company's life cycle, at least in part, explains dividend payments?

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Dividends versus Share Repurchases Since it can be shown that share repurchases have exactly the same wealth effect for shareholders in the absence of taxes and are more beneficial when we account for taxes, why don't all companies repurchase shares instead of paying dividends?

QUESTIONS AND PROBLEMS



Basic (Questions 1–10)

- Dividends and Taxes** Ash, Inc., has declared a \$7.25 per-share dividend. Suppose capital gains are not taxed, but dividends are taxed at 25 percent. New IRS regulations require that taxes be withheld at the time the dividend is paid. The company's stock sells for \$79 per share and is about to go ex dividend. What do you think the ex-dividend price will be?



- Stock Dividends** The owners' equity accounts for Southern Lights International are shown here:

Common stock (\$1 par value)	\$ 25,000
Capital surplus	135,000
Retained earnings	<u>787,600</u>
Total owners' equity	<u>\$947,600</u>

- a. If the company's stock currently sells for \$30 per share and a 10 percent stock dividend is declared, how many new shares will be distributed? Show how the equity accounts would change.
- b. If the company declared a 25 percent stock dividend, how would the accounts change?

3. **Stock Splits** For the company in Problem 2, show how the equity accounts will change if

- a. The company declares a four-for-one stock split. How many shares are outstanding now? What is the new par value per share?
- b. The company declares a one-for-five reverse stock split. How many shares are outstanding now? What is the new par value per share?



4. **Stock Splits and Stock Dividends** Roll Corporation (RC) currently has 310,000 shares of stock outstanding that sell for \$91 per share. Assuming no market imperfections or tax effects exist, what will the share price be after:

- a. RC has a five-for-three stock split?
- b. RC has a 15 percent stock dividend?
- c. RC has a 42.5 percent stock dividend?
- d. RC has a four-for-seven reverse stock split?

Determine the new number of shares outstanding in parts (a) through (d).

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Regular Dividends The balance sheet for Rami Corp. is shown here in page 510 market value terms. There are 7,200 shares of stock outstanding.

MARKET VALUE BALANCE SHEET

Cash	\$ 43,000	Equity	\$241,000
Fixed assets	<u>198,000</u>		
Total	<u>\$241,000</u>	Total	<u>\$241,000</u>

The company has declared a dividend of \$1.25 per share. The stock goes ex dividend tomorrow. Ignoring any tax effects, what is the stock selling for today? What will it sell for tomorrow? What will the balance sheet look like after the dividends are paid?

6. **Share Repurchase** In the previous problem, suppose Rami has announced it is going to repurchase \$9,000 worth of stock. What effect will this transaction have on the equity of the firm? How many shares will be outstanding? What will the price per share be after the repurchase? Ignoring tax effects, show how the share repurchase is effectively the same as a cash dividend.
7. **Stock Dividends** The market value balance sheet for Desktop Manufacturing is shown here. The company has declared a 25 percent stock dividend. The stock goes ex dividend tomorrow (the chronology for a stock dividend is similar to that for a cash dividend). There are 28,000 shares of stock outstanding. What will the ex-dividend price be?

MARKET VALUE BALANCE SHEET

Cash	\$149,000	Debt	\$127,000
Fixed assets	<u>603,000</u>	Equity	<u>625,000</u>
Total	<u>\$752,000</u>	Total	<u>\$752,000</u>

8. **Stock Dividends** The company with the common equity accounts shown here has declared a 12 percent stock dividend at a time when the market value of its stock is \$62 per share. What effects on the equity accounts will the distribution of the stock dividend have?

Common stock (\$1 par value)	\$ 130,000
Capital surplus	979,000
Retained earnings	<u>2,865,500</u>
Total owners' equity	<u>\$3,974,500</u>

9. **Stock Splits** In the previous problem, suppose the company instead decides on a five-for-one stock split. The firm's 85 cent per share cash dividend on the new (post-split) shares represents an increase of 10 percent over last year's dividend on the pre-split

stock. What effect does this have on the equity accounts? What was last year's dividend per share?

10. **Dividends and Stock Price** The Harpe Company currently has 65,000 outstanding shares selling at \$87 each. The firm is contemplating the declaration of a dividend of \$9 at the end of the fiscal year that just began. Assume there are no taxes on dividends. Answer the following questions based on the Miller and Modigliani model, which is discussed in the text.
- a. What will be the price of the stock on the ex-dividend date if the dividend is declared?
 - b. What will be the price of the stock at the end of the year if the dividend is not declared?

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If the company makes \$1.8 million of new investments at the beginning of the period, earns net income of \$1.05 million, and pays the dividend at the end of the year, how many shares of new stock must the firm issue to meet its funding needs? page 511

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Is it realistic to use the MM model in the real world to value stock? Why or why not?

Intermediate (Questions 11–16)

11. **Homemade Dividends** You own 1,000 shares of stock in Avondale Corporation. You will receive a \$1.95 per share dividend in one year. In two years, the company will pay a liquidating dividend of \$65 per share. The required return on the stock is 15 percent. What is the current share price of your stock (ignoring taxes)? If you would rather have equal dividends in each of the next two years, show how you can accomplish this by creating homemade dividends. (*Hint: Dividends will be in the form of an annuity.*)
12. **Homemade Dividends** In the previous problem, suppose you want only \$200 total in dividends the first year. What will your homemade dividend be in two years?
13. **Stock Repurchase** Campbell Corporation is evaluating an extra dividend versus a share repurchase. In either case, \$10,988 would be spent. Current earnings are \$4.50 per share, and the stock currently sells for \$84 per share. There are 4,100 shares outstanding. Ignore taxes and other imperfections in answering the first two questions.
 - a. Evaluate the two alternatives in terms of the effect on the price per share of the stock and shareholder wealth.
 - b. What will be the effect on the company's EPS and PE ratio under the two different scenarios?
 - c. In the real world, which of these actions would you recommend? Why?
14. **Dividends and Firm Value** The net income of Wheeler Corporation is \$115,000. The company has 30,000 outstanding shares, and a 100 percent payout policy. The expected value of the firm one year from now is \$1,650,000. The appropriate discount rate is 11 percent, and the dividend tax rate is zero.
 - a. What is the current value of the firm assuming the current dividend has not yet been paid?
 - b. What is the ex-dividend price of the stock if the board follows its current policy?
 - c. At the dividend declaration meeting, several board members claimed that the dividend is too meager and is probably depressing the company's stock price. They proposed that the company sell enough new shares to finance a \$5.25 dividend.
 - i. Comment on the claim that the low dividend is depressing the stock price. Support your argument with calculations.
 - ii. If the proposal is adopted, at what price will the new shares sell and how many will be sold?
15. **Dividend Policy** Gibson Co. has a current period cash flow of \$1.6 million and pays no dividends. The present value of the company's future cash flows is \$18.3 million. The

company is entirely financed with equity, and has 345,000 shares outstanding. Assume the dividend tax rate is zero.

- a. What is the share price of the the company's stock?
 - b. Suppose the board of directors of the company announces its plan to pay out 50 percent of its current cash flow as cash dividends to its shareholders. How can Jeff Miller, who owns 1,000 shares of the stock, achieve a zero payout policy on his own?
- 16. Dividend Smoothing** The Sharpe Co. just paid a dividend of \$2.65 per share of stock. Its target payout ratio is 50 percent. The company expects to have earnings per share of \$6.30 one year from now.
- a. If the adjustment rate is .3 as defined in the Lintner model, what is the dividend one year from now?
 - b. If the adjustment rate is .6 instead, what is the dividend one year from now?
 - c. Which adjustment rate is more conservative? Why?

Challenge (Questions 17–20)

- 17. Expected Return, Dividends, and Taxes** The Gecko Company and the Gordon Company are two firms whose business risk is the same but that have different dividend policies. Gecko pays no dividend, whereas Gordon has an expected dividend yield of 2.5 percent. Suppose the capital gains

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tax rate is zero, whereas the dividend tax rate is 35 percent. Gecko has an expected earnings growth rate of 12 percent annually, and its stock price is expected to grow at this same rate. If the aftertax expected returns on the two stocks are equal (because they are in the same risk class), what is the pretax required return on Gordon's stock? page 512

18. **Dividends and Taxes** As discussed in the text, in the absence of market imperfections and tax effects, we would expect the share price to decline by the amount of the dividend payment when the stock goes ex dividend. Once we consider the role of taxes, however, this is not necessarily true. One model has been proposed that incorporates tax effects into determining the ex-dividend price:⁸

$$(P_0 - P_x)/D = (1 - t_p)/(1 - t_G)$$

where P_0 is the price just before the stock goes ex, P_x is the ex-dividend share price, D is the amount of the dividend per share, t_p is the relevant marginal personal tax rate on dividends, and t_G is the effective marginal tax rate on capital gains.

- a. If $t_p = t_G = 0$, how much will the share price fall when the stock goes ex?
 - b. If $t_p = 15$ percent and $t_G = 0$, how much will the share price fall?
 - c. If $t_p = 15$ percent and $t_G = 20$ percent, how much will the share price fall?
 - d. Suppose the only owners of stock are corporations. Recall that corporations get at least a 70 percent exemption from taxation on the dividend income they receive, but they do not get such an exemption on capital gains. If the corporation's income and capital gains tax rates are both 35 percent, how much will the share price fall?
 - e. What does this problem tell you about real-world tax considerations and the dividend policy of the firm?
19. **Dividends versus Reinvestment** National Business Machine Co. (NBM) has \$2.3 million of extra cash after taxes have been paid. NBM has two choices to make use of this cash. One alternative is to invest the cash in financial assets. The resulting investment income will be paid out as a special dividend at the end of three years. In this case, the firm can invest in Treasury bills yielding 1.6 percent or in 4.3 percent preferred stock. IRS regulations allow the company to exclude from taxable income 70 percent of the dividends received from investing in another company's stock. Another alternative is to pay out the cash now as dividends. This would allow the shareholders to invest on their own in Treasury bills with the same yield or in preferred stock. The corporate tax rate is 35 percent. Assume the investor has a 31 percent personal income tax rate, which is applied to interest income and preferred stock dividends. The personal dividend tax rate is 15 percent on common stock dividends. Should the cash be paid today or in three years? Which of the two options generates the highest aftertax income for the shareholders?
20. **Dividends versus Reinvestment** After completing its capital spending for the year, Carlson Manufacturing has \$1,000 extra cash. The company's managers must choose between investing the cash in Treasury bonds that yield 3.5 percent or paying out the cash to investors who would invest in the bonds themselves.
- a. If the corporate tax rate is 35 percent, what personal tax rate would make the investors equally willing to receive the dividend or to let Carlson invest the money?

- b. Is the answer to (a) reasonable? Why or why not?
- c. Suppose the only investment choice is a preferred stock that yields 6.2 percent. The corporate dividend exclusion of 70 percent applies. What personal tax rate will make the stockholders indifferent to the outcome of the company's dividend decision?
- d. Is this a compelling argument for a low dividend payout ratio? Why or why not?