CHAPTER 17
DIVIDENDS AND DIVIDEND POLICY

Answers to Concepts Review and Critical Thinking Questions

1. Dividend policy deals with the timing of dividend payments, not the amounts ultimately paid. Dividend policy is irrelevant when the timing of dividend payments doesn’t affect the present value of all future dividends.

2. A stock repurchase reduces equity while leaving debt unchanged. The debt ratio rises. A firm could, if desired, use excess cash to reduce debt instead. This is a capital structure decision.

3. The chief drawback to a strict dividend policy is the variability in dividend payments. This is a problem because investors tend to want a somewhat predictable cash flow. Also, if there is information content to dividend announcements, then the firm may be inadvertently telling the market that it is expecting a downturn in earnings prospects when it cuts a dividend, when in reality its prospects are very good. In a compromise policy, the firm maintains a relatively constant dividend. It increases dividends only when it expects earnings to remain at a sufficiently high level to pay the larger dividends, and it lowers the dividend only if it absolutely has to.

4. Friday, December 29 is the ex-dividend day. Remember not to count January 1 because it is a holiday, and the exchanges are closed. Anyone who buys the stock before December 29 is entitled to the dividend, assuming they do not sell it again before December 29.

5. No, because the money could be better invested in stocks that pay dividends in cash that will benefit the fundholders directly.

6. The change in price is due to the change in dividends, not to the change in dividend policy. Dividend policy can still be irrelevant without a contradiction.

7. The stock price dropped because of an expected drop in future dividends. Since the stock price is the present value of all future dividend payments, if the expected future dividend payments decrease, then the stock price will decline.

8. The plan will probably have little effect on shareholder wealth. The shareholders can reinvest on their own, and the shareholders must pay the taxes on the dividends either way. However, the shareholders who take the option may benefit at the expense of the ones who don’t (because of the discount). Also as a result of the plan, the firm will be able to raise equity by paying a 10% flotation cost (the discount), which may be a smaller discount than the market flotation costs of a new issue for some companies.

9. If these firms just went public, they probably did so because they were growing and needed the additional capital. Growth firms typically pay very small cash dividends, if they pay a dividend at all. This is because they have numerous projects, and they therefore reinvest the earnings in the firm instead of paying cash dividends.
10. 

a. First, it probably is not a good time to raise dividends if earnings are not good, and it is not certain that the higher dividend can be maintained. It would be worse to raise the dividend and then to later cut it back again. Second, if the firm can invest the money profitably, then it should do so. That is the basis for positive net present value projects.

b. On theoretical grounds, there is nothing inherently wrong with "borrowing to pay dividends," but most practitioners would probably feel that this is not the soundest financial policy. For example, it may have adverse capital structure consequences, or may limit the firm's accessibility to the capital markets if it has to borrow again in the near future for real investment needs. In any case, if the firm needs the money to fund profitable investments, it should probably not raise the dividend.

c. Neither one, really. Its dividend policy should probably be based on its long-range capital needs.

d. The company should not be too worried about the little old lady in Iowa. If she wants higher dividends, she can sell her stock in Clark and buy stock in a company that pays a higher dividend, or she can sell off portions of Clark stock as needed to achieve the cash flow she desires.

11. It would not be irrational to find low-dividend, high-growth stocks. The trust should be indifferent between receiving dividends or capital gains since it does not pay taxes on either one (ignoring possible restrictions on invasion of principal, etc.). It would be irrational, however, to hold municipal bonds. Since the trust does not pay taxes on the interest income it receives, it does not need the tax break associated with the municipal bonds. Therefore, it should prefer to hold higher yielding, taxable bonds.

Solutions to Questions and Problems

Basic

1. aftertax dividend = $3.50(1 – .34) = $2.31; ex-dividend price = $70 – $2.31 = $67.69

2. 

a. new shares outstanding = 4,000(1.12) = 4,480; new shares issued = 480

\[ \text{capital surplus on new shares} = 480(529) = 13,920 \]

<table>
<thead>
<tr>
<th>Common stock ($1 par value)</th>
<th>$4,480</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital surplus</td>
<td>63,920</td>
</tr>
<tr>
<td>Retained earnings</td>
<td>206,600</td>
</tr>
<tr>
<td></td>
<td>$275,000</td>
</tr>
</tbody>
</table>

b. new shares outstanding = 4,000(1.50) = 6,000; new shares issued = 2,000

<table>
<thead>
<tr>
<th>Common stock ($1 par value)</th>
<th>$6,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital surplus</td>
<td>50,000</td>
</tr>
<tr>
<td>Retained earnings</td>
<td>219,000</td>
</tr>
<tr>
<td></td>
<td>$275,000</td>
</tr>
</tbody>
</table>

3. 

a. new shares outstanding = 4,000(5) = 20,000. The equity accounts are unchanged except the par value of the stock is now $0.20 per share.

b. new shares outstanding = 4,000(1/4) = 1,000. The equity accounts are unchanged except the par value of the stock is now $4.00 per share.

4. 

a. $60(3/5) = $36.00

b. $60(1/1.15) = $52.17

c. $60(1/1.425) = $42.11
d. $60(7/4) = $105.00

5. \[ P_0 = \frac{150,000 \text{ equity}}{5,000 \text{ shares}} = $30 \]
\[ P_X = $30 - $1.75 = $28.25 \]
\[ $1.75(5,000 \text{ shares}) = $8,750 \]; the equity and cash accounts will both decline by $8,750.

6. Repurchasing the shares will reduce shareholders' equity by $6,000.

7. \[ P_0 = $350,000 \text{ equity}/10,000 \text{ shares} = $35 \]
\[ P_X = $350,000/11,500 \text{ shares} = $30.43 \]

8. new shares outstanding = 450,000(1.07) = 481,500

9. The equity accounts are unchanged except the new par value of the stock is $0.33 per share.

10. equity portion of capital outlays = $550 - $325 = $225; D/E = .80 implies capital structure is 8/1.8 debt and 1/1.8 equity. Therefore, new borrowings = $180; total capital outlays = $405.

11. a. payout ratio = DPS/EPS = $1.50/$6 = .25

12. a. maximum capital outlays with no equity financing = $150,000 + 3($150,000) = $600,000.

b. If planned capital spending is $750,000-$600,000, then no dividend will be paid and new equity will be issued.

c. No, they do not maintain a constant dividend payout because, with the strict residual policy, the dividend will depend on the investment opportunities and earnings. As these two things vary, the dividend payout will also vary.

13. a. maximum investment with no equity financing = $32M + 2($32M) = $96M; debt = $64M
b. D/E = 2 implies capital structure is 2/3 debt and 1/3 equity.
   equity portion of investment funds = 1/3($40M) = $13.33M. Residual = $32M - $13.33M =
   $18.67M
   dividend per share = $18.67M/8M shares = $2.33
   borrowing = $40M – $13.33M = $26.67M; addition to retained earnings = $13.33M
   dividend per share = $32M/8M shares = $4.00; no new borrowing will take place

Intermediate

14. \( P_0 = \frac{0.35}{1.14} + \frac{20}{1.14^2} = \frac{15.70}{1.14} \)
   \( P_1 = \frac{20}{1.14} = \frac{17.54}{1.14} \)
   You want 1,250($9.53) = $11,915 in one year, but you'll only get 1,250($0.35) = $437.50.
   Thus sell ($11,915 – $437.50)/$17.54 = 654.36 shares at time 1.
   time 2 cash flow = $20(1,250 – 654.36) = $11,913

15. you only want $35 in year 1, so buy ($437.50 – $35)/$17.54 = 22.95 shares at time 1.
   year 2: (1,250 + 22.95)($20) = $25,459
   PV = $35/1.14 + ($25,459)/1.14^2 = $19,620
   PV = 1,250($0.35)/1.14 + 1,250($20)/1.14^2 = $19,620

16. a. cash dividend: DPS = $2,500/150 shares = $16.67; \( P_X = \frac{30 – 16.67}{13.33} \) per share.
   repurchase: $2,500/30 = 83.33 shares will be repurchased. If you choose to let your shares
   be repurchased, you have $30 in cash; if you keep your shares, they're still
   worth $30.
   b. dividends: EPS = $0.80; P/E = $13.33/$0.80 = 16.67
      repurchase: EPS = $4(150)/333 = $1.80; P/E = $30/$1.80 = 16.67
   c. A share repurchase would seem to be the preferred course of action. Only those shareholders
   who wish to sell will do so, giving the shareholder a tax timing option that he or she doesn't get
   with a dividend payment.

Challenge

17. After tax return = g + D(1 – t) = .20
   = g + .065(1 – .34) = .20 so g = .1571
   Pretax return = g + D = .1571 + .065 = 22.21%

18. a. \( P_0 - P_X = D \)
   b. \( P_0 - P_X = .72D \)
   c. \( P_0 - P_X = .903D \)
   d. \( P_0 - P_X = D[1 – (.35)(.30)]/1.65 = 1.377D \)
   e. Since different investors have widely varying tax rates on ordinary income and capital gains,
   then dividend payments have different aftertax implications for different investors. This differential
   taxation among investors is one aspect of what we have called the clientele effect.