



Principles of Finance

Name

Institution

## Principles of Finance

**Q1: What is the difference between a stock dividend and a stock split? As a stockholder, would you prefer to see your company declare a 100% stock dividend or a 2-for-1 split? Assume that either action is feasible.**

Stock splits occur when an organization issues additional shares of merchandise to current shareholders. For instance, in a 2-for-1 split scenario, a company can double the number of shares pending and issue additional shares to the current owners, thus halving the par value. A stock dividend is a form of dividend issued by a corporation instead of issuing cash dividends to satisfy the stockholders' expectations of receiving dividends without actual cash (Besley & Brigham, 2013).

As a stockholder, it is rational to declare a 2-for-1 split over a 100% stock dividend. A 2-for-1 split will decrease the market value per share of the stock, and hence, current holders will own more shares, which can cause the stock to become more attractive to potential investors.

**Q2: One position expressed in the financial literature is that firms set their dividends as a residual after using the income to support new investments. Explain what a residual policy implies (assuming that all distributions are in the form of dividends), illustrating your answer with a table showing how different investment opportunities could lead to different dividend payout ratios.**

A residual policy entails a scheme where a company pays out whatever income it does not need to invest in new projects and keeps its current capital. Therefore, dividends equal the net income minus retained earnings to finance new projects. (Brigham et al., 2016).

	Poor	Average	Good
Total capital expenditures	25	40	80
Projected income	55	70	80
Required equity (=0.6 * projected capital expenditures)	20	35	52
Paid dividends (= net income - required equity)	30	25	18
Payout ratio (dividend/net income)	65%	50%	23%

See fig. Dividend payout ratios table.

**Q3: Indicate whether the following statements are true or false. If the statement is false, explain why.**

**A. If a firm repurchases its stock in the open market, the shareholders who tender the stock are subject to capital gains taxes.**

True

**B. If you own 100 shares in a company's stock and the company's stock splits 2-for-1, then you will own 200 shares in the company following the split.**

True

**C. Some dividend reinvestment plans increase the equity capital available to the firm.**

True

**D. The tax code encourages companies to pay a large percentage of their net income in dividends.**

False. A firm is taxed on earnings, while shareholders are taxed on dividends. Paying net income in dividends is not directly related to the tax code, which encourages companies to pay debts. The tax code encourages tax savings for a company to utilize debt and pay interest instead of paying dividends.

**E. A company that has established a clientele of investors who prefer large dividends is unlikely to adopt a residual dividend policy.**

True

**F. If a firm follows a residual dividend policy, then, holding all else constant, its dividend payout will tend to rise whenever the firm's investment opportunities improve.**

False. A company that adheres to residual dividend policy reduces its payout dividend while investment opportunities are utilized.

**Q4: Shapland Inc. has fixed operating costs of \$500,000 and variable costs of \$50 per unit. If it sells the product for \$75 per unit, what is the break-even quantity?**

Break Even Quantity = Fixed Cost / (Price per Unit - Variable Cost)

Total fixed costs: \$500,000

Variable costs: \$50

Sale price per unit: \$75

Break Even Quantity = \$500,000 / (\$75-\$50)

Break Even Quantity = 20000 units

**Q5: Counts Accounting has a beta of 1.15. The tax rate is 40%, and Counts is financed with 20% debt. What is Counts's unlevered beta?**

$$\text{Unlevered beta} = \text{Equity beta} / 1 + (1-t) * d/e$$

$$\text{Equity beta} = 1.15$$

$$\text{Tax rate} = 40\%$$

$$\text{Debt} = 20\%$$

$$\text{Unlevered beta} = 1.15 / 1 + (1-40) * 20/40$$

$$= 1.15 / 0.3$$

$$= 3.8$$

**Q6: Ethier Enterprises has an unlevered beta of 1.0. Ethier is financed with 50% debt and has a levered beta of 1.6. If the risk-free rate is 5.5% and the market risk premium is 6%, how much is the additional premium that Ethier's shareholders require to compensate for financial risk?**

$$\text{Required return} = \text{risk free rate} + \text{unlevered beta (market risk premium)} = 5.5\% + 1.0 (6\%) = 11.5\%.$$

If the company has debt, the required return is:

$$\text{Risk free rate} + \text{levered beta (market risk premium)} = 5.5\% + 1.6 (6\%) = 15.1\%.$$

Therefore, the additional premium will be:

$$15.1\% - 11.5\% = 3.6\%.$$

**Q7: Nichols Corporation's value of operations is equal to \$500 million after a recapitalization (the firm had no debt before the recap). It raised \$200 million in new**

**debt to buy back stock. Nichols had no short-term investments before or after the recap.**

**After the recap,  $w_d = 40\%$ . What is S (the value of equity after the recap)?**

$$S = (200,000,000 / 0.40) - 200,000,000$$

$$S = 500,000,000 - 200,000,000$$

$$S = 300,000,000$$

**Q8: Lee Manufacturing's operations value equals \$900 million after a recapitalization (the firm had no debt before the recap). Lee raised \$300 million in new debt to buy back stock. Lee had no short-term investments before or after the recap. After the recap,  $w_d = 1/3$ . The firm had 30 million shares before the recap. What is P (the stock price after the recap)?**

$$\text{Assets} = \text{Debt} + \text{Equity}$$

$$\text{Post recap: } \$900 \text{ million} = \$300 \text{ million} + \$600 \text{ million}$$

$$\text{Pre recap: } \$900 \text{ million} = \$0 + \$900 \text{ million}$$

$$\$900 \text{ million} = 30,000,000 * \text{Share Price}$$

$$\text{Share Price} = \$30 \text{ per share}$$

Post Recap Formula:

$$\$900 \text{ million} = \$300 \text{ million} + \$600 \text{ million}$$

$$\$900 \text{ million} = \$300 \text{ million} + (30,000,000 - 10,000,000) (\$30)$$

$$\$600 \text{ million} = 20,000,000 (\$30)$$

$$P = \$30 \text{ per share}$$

## References

Besley, S., & Brigham, E. F. (2013). *Principles of finance*. Cengage Learning.

Brigham, E. F., Ehrhardt, M. C., Nason, R. R., & Gessaroli, J. (2016). *Financial management: Theory and practice* (Canadian ed.). Nelson Education.

