

Corporate finance, Stocks, Splits and Dividends, practice exam problems

(The attached PDF file has better formatting.)

*Question 1.1: Value of Shares

On January 16, an investor buys 100,000 shares of stock ABC for \$5 million.

- On January 17, the stock splits 2 for 1: each share of stock is split into two new shares of stock.
- On January 18, the stock pays a \$3 cash dividend per share.

What is the expected market value of the investor's shares on January 19?

- A. \$2.5 million
- B. \$4.4 million
- C. \$5.0 million
- D. \$5.3 million
- E. \$5.6 million

Answer 1.1: B

The value of a share of stock is the value of the firm divided by the number of shares. A stock dividend increases the number of shares but does not change the value of the firm. A cash dividend does not change the number of shares, but the value of the firm (and the value of each share) declines by the cash distributed.

A stock split does not change the aggregate value of the shares. With a 2 for 1 stock split, the number of shares doubles from 100,000 to 200,000 and the value per share is divided in half, from \$50 to \$25. After a *cash dividend*, the share price declines by the amount of the dividend: $\$25 - \$3 = \$22$.

- ~ January 16: 100,000 shares \times \$50 a share = \$5 million.
- ~ January 17: 200,000 shares \times \$25 a share = \$5 million.
- ~ January 18: 200,000 shares \times \$22 a share = \$4.4 million.

The ending stock value + the cash received = the beginning stock value:

- The cash received = the cash dividend \times the number of shares: $\$3 \times 200,000 = \$600,000$.
- $\$600,000 + \$4.4 \text{ million} = \$5.0 \text{ million}$.

*Question 1.2: Dividends

On January 15, a stock trades at \$80 a share. On January 16, the stock pays a cash dividend of \$2 per share. On January 17, the stock will have a 3 for 1 stock split, whereby each existing share of stock is split into three new shares of stock. What is the expected share price on January 18? Assume the relevant dividends dates – announcement date, ex-dividend date, record date, and payment date – occur on the same day, and ignore any tax effects.

- A. \$24.67
- B. \$26.00
- C. \$28.00
- D. \$29.33
- E. \$30.00

Answer 1.2: B

The value of a share of stock is the value of the firm divided by the number of shares. A stock dividend increases the number of shares but does not change the value of the firm. A cash dividend does not change the number of shares, but the value of the firm (and the value of each share) declines by the cash distributed.

- January 15: 1 share \times \$80 a share = \$80
- January 16: 1 share \times dividend of \$2 per share = \$2; share price = \$80 – \$2 = \$78
- January 17: \$78 / 3 = \$26; 1 share \times 3 = 3 shares

The ending stock value + the cash received = the beginning stock value:

- The cash received = the cash dividend \times the number of shares: $\$2 \times 1 = \2 .
- $\$2 + 3 \times \$26 = \$80$

*Question 1.3: Dividend Dates

A firm has four relevant dates for its first quarter 20X7 stockholder dividend. The names of the dates are shown below and numbered 1 to 4. Rank these dates in order, from *first* (on the left) to *last* (on the right).

1. Record date
2. Payment date
3. Announcement date
4. Ex-dividend date

- A. 1 < 2 < 3 < 4
- B. 4 < 3 < 2 < 1
- C. 3 < 4 < 2 < 1
- D. 3 < 4 < 1 < 2
- E. 1 < 2 < 4 < 3

Answer 1.3: D

*Question 1.4: Dividends

On September 15, a stock trades for \$60 a share, and an investor has 4,000 shares. On September 16, the stock pays a 50% stock dividend (not a cash dividend). On September 17, the stock pays a 10% cash dividend. The investor reinvests the cash dividend in more shares of the stock. On September 18, the stock has a 2 to 1 stock split. Assume the tax rate is zero and the value of the investor's shares does not change except as a result of the dividends.

What is the value of the investor's stock holding on September 19?

- A. \$216,000
- B. \$240,000
- C. \$250,000
- D. \$266,000
- E. \$360,000

Answer 1.4: B

The investor has not removed any of his or her equity from the firm. The beginning value is \$240,000, so the ending value is \$240,000.

Question: What does the practice problem mean by “the value of the investor’s shares does not change except as a result of the dividends”?

Answer: Stock prices are stochastic; they change for many reasons, not just because of cash dividends paid by the firm. For this practice problem, assume the value of the shares is not stochastic. It changes only because of cash paid out of the firm or paid into the firm.