Financial Management Homework 4
Instructor Dr. Tao Yuan
(Due on 21 Dec in class)

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Question 1. The Newton Company has 50,000 shares of stock that each sell for $40. Suppose the company issues 9,000 shares of new stock at the following prices: $20. What is the effect on the existing price per share?

Old value = $50,000 \times 40 = 2,000,000$

Cash from new issue = $9,000 \times 20 = 180,000$

New value = $2,000,000 + 180,000 = 2,180,000$

New share outstanding = $50,000 + 9,000 = 59,000$

New price per share = $\frac{2,180,000}{59,000} \doteq 36.95$

Question 2. The balance sheet for Company ABC is shown here in market value terms. There are 14,000 shares of stock outstanding.

Market Value Balance Sheet			
Cash	$ 62,000	Equity	$507,000
Fixed assets	445,000		
Total	$507,000	Total	$507,000

The company has declared a dividend of $1.60 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?

Market-value balance sheet today (before dividend):

cash: 62,000 fixed-assets: 445,000 total firm value: 507,000.

Stock selling for today $P_{today} = \frac{507,000}{14,000} \doteq \$36.21$

Tomorrow, the firm will pay out dividends, reducing equity by the total payment.

$507,000 - 22,400 = 484,600$

Ex-dividend price: $P_{tomorrow} = \frac{484,600}{14,000} \doteq \$34.61$

(Alternatively: $P_{tomorrow} = P_{today} - 1.60 = 34.61$)

Balance sheet after dividends are paid.

Cash: $62,000 - 22,400 = 39,600$

Fixed assets = 445,000

Equity = $39,600 + 445,000 = 484,600$

Question 3. Here are key financial data for House of Herring, Inc. House of Herring plans to pay the entire dividend early in January 2019. All corporate and personal taxes were repealed in 2017.

Earnings per share for 2018	$5.50
Number of shares outstanding	40 million
Target payout ratio	50%
Planned dividend per share	$2.75
Stock price, year-end 2018	$130

a. Other things equal, what will be the stock price after the planned dividend payout?
b. Suppose the company cancels the dividend and announces that it will use the money saved to repurchase shares. What happens to the stock price on the announcement date? Assume that investors learn nothing about the company's prospects from the announcement. How many shares will the company need to repurchase?

a. total earnings $= 5.50 \times 40,000,000 = \$220,000,000$

total cash needed $= 2.75 \times 40,000,000 = \$110,000,000$

$P_{ex} = \frac{(130 \times 40,000,000) - 110,000,000}{40,000,000} = \$127.75$

b. price per share does not change, stays at \$130.

Shares repurchased $= \frac{110,000,000}{130} \approx 846.154$ (shares).

Question 4. Suppose that Company A offered 100 shares for sale in an IPO. The offering price to the public was \$50 and the underwriters received a spread of 7% of the total issue amount. The issue was heavily oversubscribed and on the first day of trading the stock price rose to \$160.

a. What were the proceeds of the issue to the company?
b. How much commission did the underwriters receive?
c. How much money was left on the table (underpricing)?

a. total amount raised from investors: $100 \times 50 = 5,000$

underwriting spread = 7% of the total issue amount: Spread $= 0.07 \times 5,000 = 350$

Proceeds to the company: $5,000 - 350 = 4,650$

b. This is simply the 7% spread: \$350.

c. underpricing = (market price − offer price) × number of shares sold

$= (160 - 50) \times 100 = 11,000$

Question 5. The shareholders of Flannery Company have voted in favor of a buyout offer from Stultz Corporation. Flannery's shareholders will receive one share of Stultz stock for every three shares they hold in Flannery. Information about each firm is given here:

	Flannery	Stultz
Price-earnings ratio	6.35	12.70
Shares outstanding	73,000	146,000
Earnings	$230,000	&690,000

a. What will the EPS of Stultz be after the merger?

b. What will the PE ratio be if the NPV of the acquisition is zero?

P/E × E

P = P/EPS × S/E

a. New Stultz shares = $\frac{73{,}000}{3} = 24{,}333$

Total shares = 146,000 + 24333 = 170,333

Total earnings = 690,000 + 230,000 = 920,000

$EPS_{post} = \frac{920{,}000}{170{,}333} = \$5.4$ EPS after = $5.4

P = 12.7 × $\frac{690{,}000}{146{,}000}$ = 60.02

b. Value per share does not change for Stultz shareholders.

P/E post = P/E pre = 12.70.

P/E = $\frac{60.02}{5.4}$ =

Question 6. Consider the following premerger information about a bidding firm (Firm *B*) and a target firm (Firm *T*). Assume that both firms have no debt outstanding. Firm *B* has estimated that the value of the synergistic benefits from acquiring Firm *T* is $12,600.

	Firm B	Firm T
Shares outstanding	8,300	3,400
Price per share	$46	$21

a. If Firm *T* is willing to be acquired for $24 per share in cash, what is the NPV of the merger?

b. What will the price per share of the merged firm be assuming the conditions in (a)?

c. In part (a), what is the merger premium (difference between price paid and target value)?

d. Suppose Firm *T* is agreeable to a merger by an exchange of stock. If *B* offers one of its shares for every two of *T*'s shares, what will the price per share of the merged firm be?

Value of B = 8,300 × $46 = 381,800 Value of T = 3,400 × $21 = 71,400

a. Total cost of acquisition: Cash paid = 3,400 × 24 = 81,600

Gain from merger = 12,600

NPV = Synergy − Premium Paid = 12,600 − (81,600 − 71,400) = 2,400.

b. Total combined value = 381,800 + 71,400 + 12,600 = 465,800

Since T is bought for cash, only B's shares remain outstanding:

Shares after merger = 8,300

$P_{merged} = \frac{465{,}800}{8{,}300} = \$56.10$

c. Premium per share = 24 − 21 = 3

Total premium = 3 × 3,400 = 10,200

d. Shares issued to T shareholders.

Exchange ratio: $\frac{1\text{ B share}}{2\text{ T shares}}$ ⇒ New B shares = 1,700

Total shares after merger 8300 + 1,700 = 10,000

Total combined value 465,800

Post-merger share price $P_{merged} = \frac{465{,}800}{10{,}000} = \$46.58$.