Financial Accounting
Recitation 8

MIT Sloan School of Management

Finance at MIT
Where ingenuity drives results

Recitation Agenda

Shareholder's Equity

Common Stock & Treasury Stock

Hybrid instruments

Earnings per Share (EPS)

- Basic
- Diluted

Stock Compensation

Equity Financing

Companies can only take on projects if they have cash (capital). Operations alone can only generate so much cash.

So what can companies do if they need more cash?

- Obtain a loan or issue bonds (debt – last class)
- Issue stock (equity – this class)

Common Stock

When a company issues common stock, they give investors access to two rights.

- Ownership
- Voting

Common Stock is recorded in two separate accounts on the Balance Sheet.

- Par Value
- Additional Paid-In-Capital (APIC)

Question 1: Common Stock
Part A: Issuance

Use the BSE to record the issuance of 1 million shares of common stock for $45/share. Assume no par value.

Cash (A) = (L) + APIC (E)

+45M +45M

Use the BSE to record the issuance of 1 million shares of $1 par value common stock for $45/share.

Cash (A) = (L) + CS, Par (E) + APIC (E)

+45M +1M +44M

Question 1 Common Stock
Part B: Issuance expenses

Now suppose ABC Company works with an investment bank who underwrites the deal. ABC Company issues 1 million shares of $1 par common stock for $50/share, but incurs $3 million of underwriting expenses.

Use the BSE, assuming ABC Company capitalizes issuance costs:

Cash (A)	+	Capitalized Issuance Costs (A)	=	(L)	+	CS, Par (E)	+	APIC (E)
+47M		+3M				+1M		+49M

Use the BSE, assuming ABC Company reduces APIC by issuance costs:

Cash (A)	=	(L)	+	CS, Par (E)	+	APIC (E)
+47M				+1M		+46M

Question 1: Common Stock
Part C: Repurchase

When a company repurchases stock, it is said to be ‘held in treasury’ and goes into the Treasury Stock account. This is a **contra-equity** account.

Suppose management at ABC Company repurchases 100,000 shares at $30/share. Use the BSE to record this transaction.

Cash (A) = (L) + APIC (E) – T Stock (CE)
-3M +3M

Use the BSE to record the transaction to reissue 30,000 shares held in treasury at $40/share.

Cash (A) = (L) + APIC (E) – T Stock (CE)
+1.2M +0.3M -0.9M*

*Reissued shares come out of treasury at $30/share

Question 1: Common Stock
Part D: Stock splits

Occasionally a company will engage in a stock split. This affects the number of shares outstanding and the stock price, but **does not affect the account balances**.

Suppose ABC Company has 1 million shares outstanding trading at $45/share and engages in a 3-1 stock split.

How many shares outstanding after the split?

3 million

What is the share price immediately following the split?

$15

What is the BSE entry to record this transaction

no entry!

Earnings Per Share (EPS)

Earnings per share is a commonly used metric for assessing profitability. It is typically calculated in two ways: Basic and Diluted.

$$Basic\ EPS = \frac{NI\ available\ to\ Common\ Shareholders}{Weighted\ Average\ Shares\ Outstanding}$$

Numerator = NI – NI attributable to noncontrolling interest – Preferred dividends

Denominator: (Example with made up numbers)

Date	# Shares	Weight	Weighted #
Jan 1	100,000	3/12	25,000
Apr 1	120,000	1/12	10,000
May 1	90,000	5/12	37,500
Oct 1	140,000	3/12	35,000
Total			107,500

Diluted EPS

Diluted is a second take on earnings per share. It represents the EPS under a **"what-if"** scenario in which all in-the-money stock options are exercised and all convertible instruments are converted to common stock.

$$Diluted\ EPS = \frac{NI\ available\ to\ Common\ Shareholders + Addbacks}{Weighted\ Average\ Shares\ Outstanding + Conversions}$$

Addbacks in the numerator include dividends paid to preferred shareholders and *after-tax* interest paid to convertible debt holders.

Diluted shares include convertible instruments and stock option exercises. Assume all convertible instruments convert to common stock. Stock option exercises require more calculations.

Question 2: Diluted shares calculations
Part A: Net effect of # of shares

Suppose Kendall Corp. is trading at $50/share. Outstanding stock options include 200,000 options w/ exercise price of $30/share and 100,000 options w/ exercise price of $60/share.

Step 1: Assume exercise all in-the-money options:

$6M proceeds = 200K*30

Step 2: Assume use proceeds to repurchase stock:

$6M / $50 = 120,000

Step 3: Examine the net effect on shares outstanding:

Step 1:	+200,000 shares (200,000 in-the-money options exercised)
Step 2:	-120,000 shares (assumed repurchases @ $50/share)
Net Effect =	+80,000 weighted average shares outstanding

Question 2: Diluted shares calculations
Part B: Calculating diluted EPS

Kendall Corp. maintained 500,000 shares outstanding for the whole year. Its net income was $2 million, and did not have any addbacks. What is the diluted EPS for Kendall Corp?

$$Diluted\ EPS = \frac{NI\ available\ to\ Common\ Shareholders + Addbacks}{Weighted\ Average\ Shares\ Outstanding + Conversions}$$

$$= \frac{2{,}000{,}000}{500{,}000 + 80{,}000} = \$3.45$$

Diluted EPS is $3.45 per share.

Hybrid instruments

Two types of hybrid instruments:

Preferred stock

- Preferred stock is similar to a bond, but pays dividends like equity. It generally does not come with ownership or voting rights and pays a stated dividend.

Convertible debt and preferred

- Two types of convertibles: Convertible debt and convertible preferred
- Convertible Debt (preferred) is debt (preferred) that has the ability to be converted to stock.
- Convertibles allow the owner to take advantage of increases in the stock price via the conversion option. Because of the value of this option, convertible debt (preferred) tends to have lower interest (dividend) payments.

Question 3: Hybrid Instruments
Part A: Preferred Stock

Use the BSE to record the issuance of 10,000 shares of 6% preferred stock with a par value of $100 for $150/share.

Cash (A) = (L) + PS, Par (E) + APIC (E)

+1.5M +1M +0.5M

Use the BSE to record the first payment of dividends.

Cash (A) = Dividends Payable (L) + Ret Earnings (E)

+60,000 -60,000 (dividends declared)

-60,000 -60,000 (dividends paid)

Question 3: Hybrid instruments
Part B: Convertible Debt

Assume Uber issues 1,000 1-year, 2% Convertible Bonds with face value of $100. These bonds have a conversion feature that allows the bondholder to convert each bond to 1 Uber share at maturity. The market rate at issuance is 8% and the PV of the bonds is $94,444. Use the BSE to record the issuance.

Cash (A) = Bond Payable (L) -Discount(XL)

+94,444 +100,000 +5,556

Use the BSE to record the coupon payment at the end of year 1.

Cash (A) = -Discount(XL) + Ret Earnings (E)

-2,000 -5,556 -7,556 (interest exp = 94,444*.08)

Suppose that at maturity the stock is trading at $80/share. Assume no par value.

Cash (A) = Bond Payable (L) + (E)

-100,000 -100,000

Suppose that at maturity the stock is trading at $200/share. Assume bondholders convert.

Cash (A) = Bond Payable (L) + APIC (E)

-100,000 +100,000

Question 4: Stock Compensation

Companies will often compensate employees by granting them stock options. These options may have a vesting period, meaning they **cannot be exercised until they vest**.

Use the BSE to record the transaction to grant employees 15,000 stock options on January 1. These options are valued at $20 each and vest **immediately**.

(A) = (L) + Contributed Capital (E) + Ret Earnings (E)			
	+300,000	-300,000	(wage exp)

Now use the BSE to record the transaction, assuming those same options vest over 3 years.

(A) = (L) + Contributed Capital (E) + Ret Earnings (E)			
Year 1:	+100,000	-100,000	(wage exp)
Year 2:	+100,000	-100,000	(wage exp)
Year 3:	+100,000	-100,000	(wage exp)