

Review Session Midterm Exam

Question #1:

- ✓ Market power →
 - ✓ wealth transfer for target customers
 - ✓ economic gain for everyone else from stakeholders
- ✓ Necessary restructuring
 - - ✓ Economic gains for everyone
- ✓ Tax Reduction
 - ✓ Economic gain for everyone
- ✓ Diversification
 - Economic gain if the founder/controller cannot diversify at a reasonable cost elsewhere
 - Economic gain if best investment opportunities arrive when company has least amount of available financing
 - wealth Transfer all else

Question #1 (continued):

✓ Synergies → ✓ Economic gains

Question #3:

$$\text{Total consideration} = \overset{\$}{200\text{m}} + \overset{\$}{40.299\text{m}} = 240.299\text{m} \$$$

Question #4:

$$\text{Total Price for stock} = \$200 \text{ million}$$

Question #7:

in Excel:

$$\text{Value of the tax shield} = PV\left(\underset{\substack{\downarrow \\ \text{discount} \\ \text{rate}}}{.10}, \underset{\substack{\uparrow \\ \text{\# of periods of} \\ \text{amortization}}}{15}, \underbrace{\frac{(60\text{m} - 35\text{m}) * .35}{15}}_{\substack{\text{annual} \\ \text{tax} \\ \text{shield}}}, 0\right)$$

Annuity Value = $\frac{1}{r} \left[1 - \frac{1}{(1+r)^T} \right] * C$

annuity factor

FV (future value of tax shields)

Question #10:

$$\text{Correlation (L\&A, GC)} = 0.1$$

$$\Rightarrow \sigma_{\text{combined company}} = 35.38\%$$

$$(a) \Rightarrow \begin{cases} E \text{ (using option calculator)} = 205.54 \$ \\ D = 250 - E \end{cases} \quad (\$250\text{m is total asset value})$$

$$(b) \Rightarrow \text{YTM} = \text{rate}(10, 0, -44.46, 130)$$

Question # 8

c.

$$\begin{aligned}\text{Goodwill} &= 240.299 \text{ m} \\ &\quad - 85.487 \text{ m} \\ &= 154.812 \text{ m}\end{aligned}$$

$$\Rightarrow \text{PV} = 11.48 \text{ m} \checkmark$$

Goodwill

Deduction

$$= \text{PV}(0.04, 15, 154.812 \times .1 / 15)$$

Midterm Q #8 (c)

A similar question illustration from class:

$$\text{Goodwill} = \$25\text{m}$$

$$T = 15$$

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

$$r_D = 7\%$$

$$\text{Annual tax shield} = \frac{\$25\text{m}}{15} * .40 = \$.667\text{m}$$

$$i/y = 7\%$$

$$N = 15$$

$$\text{PMT} = .667$$

$$\text{FV} = \emptyset$$

$$\text{PV} = ? = -6.07\text{m} \$$$

Question #8

a. Asset Purchase

✓ Corp. Tax = $\boxed{10\%}$

→ instead of 39%

✓ Cap. Gains Tax = $\boxed{20\%}$

→ instead of 15%.

(incl. state & federal)

✓ Total purchase price = $200_m + 40.299_m = 240.299_m$

b. stock purchase

cap. Gains Tax = $\boxed{20\%}$

→ substitute for 15%

Example of taxing an asset purchase:

Taxation w/in company in an asset purchase

- ✓ Sale price = \$10 m
 - ✓ Initial purchase price = \$5 m
 - ✓ Book value @ sale date = \$1 m
- capital gains tax = 21%
&
recapture of depreciat. = 20%

Need to tax (Sales price - Book Value)

$$\begin{aligned} \$1.84 \text{ m tax bill} &= \underbrace{\left\{ \overset{\text{MV}}{\underset{10}{\text{Sale price}}} - \overset{\text{BV}}{\underset{5}{\text{Initial Purchase Price}}} \right\}}_{\text{taxed @ 20\% (cap. gains)}} + \underbrace{\left\{ \overset{5}{\text{Initial Purchase Price}} - \overset{1}{\text{Book Value Asset}} \right\}}_{\text{taxed @ 21\% (ordinary income)}} \end{aligned}$$

Question #11:

Set $g = -10\%$ (for stable growth stage)
the second stage

$$r = 10\%$$

Question #12:

Set $g = 0\%$ (for stable growth)

$r = 20\%$ (i.e., discount rate)

Conceptually, value of perpetual for

second-stage valuation = $\frac{C_{t+1}}{r - g}$ $\rightarrow 62$

$\underbrace{r}_{20\%} - \underbrace{g}_{0\%}$

Question #14

- ✓ Discount for illiquidity = 3% → record as +3% in spreadsheet
- ✓ Premium for control = 26% (in cell D4)
- ✓ Control Block Size = 51% → cell D5
→ cell D6

→ With spreadsheet in Excel, substitute in:

Question #17

- ✓ Substitute \$160m instead of \$148.528 m in the "Basic LBO Example" spreadsheet.
 - ✓ Adjust transaction fee to 1%.
- ⇒ Automatically, spreadsheet will produce "Total Funds needed at closing"
- ⇒ Once calculated, the total of "uses of funds" needs be applied as total for "sources of funds" and adjust "Amount of Equity to be Raised"

Question #18:

Target price = \$100 $\Rightarrow$ change exchange ratio
for stock-for-stock

$$\text{Exch. Ratio} = \frac{100}{56.25} = 1.778$$

Question #19:

$$\text{Total Net Income} = \$281.5 \text{ m} + \$62.5 \text{ m} + \$10 \text{ m}$$

Question #22:

Need to
change: $P_T = 30$, $NI_{\text{Synergies}} = 100$
(in spreadsheet)

Question #21

$$r = 10\%$$

Sales growth & profit margin = 10% (for seller)

} differences
from
class example

Need to: ✓ determine upfront amount & five profit-sharing thresholds (symmetric for target & acquirer)

✓ - Value of earnout to seller $\geq$ 5,000

- Value of earnout to buyer $\leq$ 2,179

✓ Can be the case that the value of the earnout to buyer & seller are exactly 2,179 and 5,000, correspondingly

→ Note there are infinite contracts that satisfy these criteria

Question #23:

Benefits of earnouts:

- Resolve negotiation deadlocks
- Valuation gaps bridge
- Helps with managerial retention
- Offers incentives for managers that remain in the corp

Costs of earnouts:

- can be complex to implement
- Disallows integration of the target
- Can demotivate managers if target watermarks (for profit sharing) too aggressive

Question #23 (Continued):

