

# Financial Modeling

## – Certification Quiz Questions

### Module 10 – M&A Concepts and Full Merger Model

- Consider the scenario shown below, where Company A plans to acquire Company B for a 25% premium, citing significant potential long-term synergies:

#### M&A Case Study Exercise

(\$ in Millions Except for Share Price and Per Share Data)

Company A:		Company B:	
Enterprise Value (TEV):	\$ 250.0	Enterprise Value (TEV):	\$ 120.0
Equity Value:	200.0	Equity Value:	80.0
EBITDA:	20.0	EBITDA:	10.0
Net Income:	10.0	Net Income:	5.0
Tax Rate:	25.0%	Tax Rate:	25.0%
TEV / EBITDA:	12.5 x	TEV / EBITDA:	12.0 x
P / E:	20.0 x	P / E:	16.0 x

#### Purchase Consideration:

Premium Paid for Company B:	25.0%
Equity Purchase Price:	\$ 100.0
% Cash:	0.0%
% Debt:	50.0%
% Stock:	50.0%
Pre-Tax Interest Rate on Debt:	8.0%

Combined Enterprise Value (TEV):  
Combined Equity Value:

Combined EBITDA:  
Combined Net Income:

Combined TEV / EBITDA:  
Combined P / E:

Company A keeps Company B's Cash and Debt in place and does nothing with them. Assume there are no transaction or financing fees, and ignore items like the new D&A on Asset Write-Ups for simplicity.

Based on this information, what are the Combined Company's TEV / EBITDA and P / E multiples \*immediately after the deal is announced\*?

- a. Combined TEV / EBITDA = 13.0x; Combined P / E = 20.8x.
  - b. Combined TEV / EBITDA = 13.0x; Combined P / E = 25.0x.
  - c. Combined TEV / EBITDA = 14.7x; Combined P / E = 20.8x.
  - d. Combined TEV / EBITDA = 14.7x; Combined P / E = 23.3x.
2. One month after this deal is announced, the market becomes very skeptical of the "potential synergies." Company A's share price declines so that it reflects an expectation that Company B is worth only its pre-deal-announcement Equity Value of \$80.

In this scenario, which of the following will NOT happen?

- a. The Combined Equity Value and Combined Enterprise Value will both decrease by \$20.
- b. The Equity Purchase Price will stay the same, so Company A will use the same \*dollar amounts\* of Debt and Stock to fund the deal.
- c. Since Company A will use the same \*dollar amounts\* of Debt and Stock to acquire Company B, the EPS accretion/dilution will remain the same.
- d. The Combined Net Income and EBITDA will be the same because each company's separate Net Income and EBITDA will be the same, and the Interest Expense on the Transaction Debt will not change.

3. Consider a potential transaction between an Acquirer and a Target, as shown below:

**Merger Model**

(\$ in Millions, Except Per Share Amounts in Dollars as Stated)

**Transaction Assumptions:**

Target Share Price:	\$ 16.86
Premium Paid to Target's Share Price:	24.6%
Offer Price per Share:	\$ 21.00
Purchase Equity Value:	\$ 2,000.0
Purchase Enterprise Value:	2,100.0
Post-Deal Minimum Cash Balance:	\$ 1,500.0
Acquirer's Cash (Pre-Deal):	2,000.0
Maximum Cash Available for Deal:	
Maximum Combined Debt / EBITDA:	3.0 x
Acquirer's Debt (Pre-Deal):	5,000.0
Acquirer's EBITDA:	1,900.0
Target's EBITDA:	200.0

	Amount:	Pre-Tax Cost:	After-Tax Cost:
Cash Used:		1.0%	
Debt Issued:		4.0%	
Stock Used:			
New Shares Issued (Millions):			
Weighted Average Acquisition Cost:			
Target's "Yield":			
Acquirer Equity Value (Pre-Deal):			20,000.0
Acquirer's Net Income:			1,000.0
Target's Net Income:			50.0

Assume that the Target has minimal Cash and Debt and assume a 25% tax rate for both the Acquirer and the Target. Based on this information and the constraints in the screenshot above, what mix of Cash, Debt, and Stock will the Acquirer use to purchase the Target?

- Cash = \$500; Debt = \$1,500; Stock = \$0.
- Cash = \$500; Debt = \$1,300; Stock = \$200.
- Cash = \$500; Debt = \$700; Stock = \$800.
- Cash = \$500; Debt = \$1,300; Stock = \$300.

4. Continuing with this same question, will this deal be accretive or dilutive based on what you just calculated and the Costs of Cash, Debt, and Stock for the Acquirer? Ignore synergies, integration costs, new D&A on asset write-ups, and all acquisition effects except for the Foregone Interest on Cash, Interest on New Debt, and New Stock Issued.

- a. Dilutive; the Weighted Average Acquisition Cost of 3.2% is above the Target's Yield of 2.5%.
- b. Accretive; the Weighted Average Acquisition Cost of 2.4% is below the Target's Yield of 2.5%.
- c. Dilutive; the Weighted Average Acquisition Cost of 2.6% is above the Target's Yield of 2.5%.
- d. Breakeven; the Weighted Average Acquisition Cost equals the Target's Yield of 2.5%.

5. Consider the following Purchase Price Allocation schedule for this same M&A deal:

**Purchase Price Allocation:**

<b>Goodwill Calculation:</b>	
<b>Equity Purchase Price:</b>	<b>\$ 2,000.0</b>
(-) Seller Book Value:	(500.0)
(+) Write-Off of Existing Goodwill:	100.0
<b>Total Allocable Purchase Premium:</b>	
(-) Write-Up of PP&E:	
(-) Write-Up of Intangibles:	
(-) Write-Down of Deferred Tax Liabilities:	(40.0)
(+) New Deferred Tax Liability:	
<b>Total Goodwill Created:</b>	

<b>Fixed Asset Write-Up:</b>	
PP&E Write-Up %:	10.0%
PP&E Write-Up Amount:	\$ 20.0
Depreciation Period (Years):	8
<b>Intangible Asset Write-Up:</b>	
Purchase Price to Allocate:	
% Allocated to Indefinite-Lived Intangibles:	30.0%
Indefinite-Lived Intangibles:	
% Allocated to Definite-Lived Intangibles:	5.0%
Intangibles Write-Up Amount:	
Amortization Period (Years):	5

New Deferred Tax Liability:

Based on this schedule above, please calculate the Goodwill created in this deal. Assume a 25% tax rate.

- a. \$1,020.
- b. \$1,005.
- c. \$980.

d. \$1,125.

6. Consider the Combined Income Statement shown below, for an M&A deal between two restaurant/retail companies:

Combined Income Statement:	Units:	Projected - Combined Period:				
		FY16	FY17	FY18	FY19	FY20
(+) Company Store Revenue:	\$ M	\$ 20,010.1	\$ 21,798.0	\$ 23,527.0	\$ 25,158.2	
(+) Franchise / License Revenue:	\$ M	2,415.2	2,607.8	2,763.9	2,901.6	
(+) Supply Chain / Other Revenue:	\$ M	2,722.3	2,880.9	3,021.3	3,139.4	
(+) Revenue Synergies:	\$ M	19.8	34.0	52.3	67.4	
<b>Total Revenue:</b>	<b>\$ M</b>	<b>25,167.4</b>	<b>27,320.7</b>	<b>29,364.5</b>	<b>31,266.6</b>	
<b>Segment Operating Income:</b>	<b>\$ M</b>	<b>7,963.0</b>	<b>8,778.0</b>	<b>9,490.3</b>	<b>10,196.1</b>	
(-) General & Administrative:	\$ M	(1,653.5)	(1,794.4)	(1,899.2)	(2,021.6)	
(-) Corporate D&A:	\$ M	(1,205.6)	(1,335.8)	(1,464.6)	(1,590.4)	
(-) Other Operating Expense / (Income)	\$ M	(515.8)	(560.1)	(602.1)	(641.3)	
(-) Impairment Charges & Other:	\$ M	-	-	-	-	
(-) Pre-Opening Costs:	\$ M	(2.6)	(2.8)	(2.4)	(2.6)	
(+) OpEx Synergies:	\$ M	5.0	10.0	25.0	50.0	
(-) Amortization of New Intangibles:	\$ M	(10.9)	(10.9)	(10.9)	(10.9)	
(-) Depreciation of PP&E Write-Up:	\$ M	(1.8)	(1.8)	(1.8)	(1.8)	
<b>Consolidated Operating Income:</b>	<b>\$ M</b>	<b>4,577.6</b>	<b>5,082.2</b>	<b>5,534.4</b>	<b>5,977.5</b>	
(+) Interest Income:	\$ M	29.5	41.8	55.0	71.4	
(+) Interest Expense:	\$ M	(70.2)	(57.1)	(48.0)	(36.6)	
(+) Other Income / (-) Expense:	\$ M	-	-	-	-	
(-) Foregone Interest on Cash:	\$ M	(6.8)	(6.8)	(6.8)	(6.8)	
(-) Amortization of Financing Fees:	\$ M	(2.9)	(2.9)	(2.9)	(2.9)	
(-) Interest Paid on New Debt Issued:	\$ M	(19.5)	(19.5)	(19.5)	(19.5)	
<b>Net Interest Income / (Expense):</b>	<b>\$ M</b>	<b>(69.9)</b>	<b>(44.5)</b>	<b>(22.3)</b>	<b>5.6</b>	
<b>Pre-Tax Income:</b>	<b>\$ M</b>	<b>4,507.7</b>	<b>5,037.7</b>	<b>5,512.1</b>	<b>5,983.0</b>	
(-) Income Tax Provision:	\$ M	(1,126.9)	(1,259.4)	(1,378.0)	(1,495.8)	
<b>Net Income:</b>	<b>\$ M</b>	<b>3,380.8</b>	<b>3,778.3</b>	<b>4,134.1</b>	<b>4,487.3</b>	
(+) Acquirer - Diluted Shares:	M Shares	1,510.0	1,510.0	1,510.0	1,510.0	
(+) Shares Issued in Transaction:	M Shares	0.0	0.0	0.0	0.0	
<b>Total Diluted Shares:</b>	<b>M Shares</b>	<b>1,510.0</b>	<b>1,510.0</b>	<b>1,510.0</b>	<b>1,510.0</b>	
Acquirer - Standalone EPS:	\$ / Share	\$ 2.23	\$ 2.48	\$ 2.71	\$ 2.93	
<b>Earnings Per Share (EPS):</b>	<b>\$ / Share</b>	<b>\$ 2.24</b>	<b>\$ 2.50</b>	<b>\$ 2.74</b>	<b>\$ 2.97</b>	
Accretion / (Dilution) - \$:	\$ / Share	\$ 0.01	\$ 0.02	\$ 0.03	\$ 0.04	
Accretion / (Dilution) - %:	%	0.6%	0.8%	1.1%	1.5%	
<b>Pro-Forma Earnings Per Share (EPS):</b>	<b>\$ / Share</b>	<b>\$ 2.25</b>	<b>\$ 2.51</b>	<b>\$ 2.74</b>	<b>\$ 2.98</b>	
Pro-Forma Accretion / (Dilution) - \$:	\$ / Share	\$ 0.02	\$ 0.03	\$ 0.03	\$ 0.05	
Pro-Forma Accretion / (Dilution) - %:	%	0.9%	1.0%	1.3%	1.7%	

The Definite-Lived Intangibles created in this deal are approximately \$55 million, with a 5-year useful life, and the PP&E Write-Up is approximately \$14 million, with an 8-year depreciation period.

The deal is financed with approximately 65% Cash and 35% Debt, and the Debt allows for optional repayments if the company has excess cash flow.

Based on this information and the screenshot above, which of the following answer choices represent LIKELY PROBLEMS with this Combined Income Statement?

- a. The Revenue Synergies and OpEx Synergies grow at very high rates, at over 3x and ~10x, respectively, over 4 years; these assumptions are too aggressive.
- b. There's no additional OpEx or COGS associated with the Revenue Synergies.
- c. The Integration Costs and Restructuring Costs do not appear on the Income Statement.
- d. The Interest Paid on New Debt stays the same each year, even though the company is likely repaying some amount of this New Debt over time.
- e. The Amortization of Intangibles and Depreciation of the PP&E Write-Up both seem too large, based on the assumptions above.
- f. All of the above.
- g. Answer choices 1, 2, and 3 only.
- h. Answer choices 1, 3, 4, and 5.
- i. Answer choices 2 and 4.
- j. Answer choices 1, 2, and 4.