Bank & Financial Institution Modeling: – Certification Quiz Questions

Module 4 – Bank M&A and Merger Models

1. **The screenshot below shows the Balance Sheet combination in a bank merger model:**

Balance Sheet:	*Units:*	Year 3	Seller:	Debit:	Credit:	Marks:	Divestiture:	Pro-Forma Year 3
			Transaction Adjustments					
ASSETS:								
Cash and Due from Banks:	*$ M*	$ 20.0	$ 14.0	$ -	$ (3.6)	$ -	$ -	$ 30.4
Investments and AFS/HTM Securities:	*$ M*	275.0	190.0	-	-	(1.9)	-	463.1
Federal Funds Sold:	*$ M*	32.0	10.0	-	-	-	-	42.0
Gross Loans:	*$ M*	**675.0**	**360.0**	**-**	**-**	**(3.6)**	**-**	**1,031.4**
(-) Allowance for Loan Losses:	*$ M*	(8.0)	(6.5)	-	-	-	-	(14.5)
Net Loans:	*$ M*	**667.0**	**353.5**					**1,016.9**
Goodwill:	*$ M*	50.0	20.0	105.2	(20.0)	-	-	155.2
Other Intangible Assets:	*$ M*	50.0	21.0	4.3	(21.0)	-	-	54.3
Other Assets:	*$ M*	130.0	65.0	-	-	-	-	195.0
Total Assets:	*$ M*	**$ 1,224.0**	**$ 673.5**					**$ 1,956.9**
LIABILITIES & EQUITY:								
Liabilities:								
Deposits:	*$ M*	$ 740.0	$ 345.0	$ -	$ -	$ (3.4)	$ -	$ 1,081.6
Total Debt:	*$ M*	135.0	100.0	-	-	(1.0)	-	234.0
Federal Funds Purchased:	*$ M*	35.0	55.0	-	-	-	-	90.0
Senior Debt:	*$ M*		-	-	13.5	-	-	13.5
Subordinated Debt:	*$ M*		-	-	4.5	-	-	4.5
Deferred Tax Liability:	*$ M*		-	-	1.5	-	-	1.5
Other Liabilities:	*$ M*	85.0	50.0	-	-	-	-	135.0
Total Liabilities:	*$ M*	**995.0**	**550.0**					**1,560.0**
Equity:								
Common Shareholders' Equity:	*$ M*	**199.0**	**113.5**	**(117.1)**	**161.5**	**-**	**-**	**356.9**
Preferred Stock:	*$ M*	30.0	10.0	-	-	-	-	40.0
Total Equity:	*$ M*	**229.0**	**123.5**					**396.9**
Total Liabilities & Equity:	*$ M*	**$ 1,224.0**	**$ 673.5**					**$ 1,956.9**

Your co-worker claims that several items are missing or incorrect in this Balance Sheet combination. Which of these items is the co-worker CORRECT about?

Item #1: Banks cannot use Cash to fund any part of an M&A deal, so it's incorrect to Credit the Cash Balance for $3.6 million.

BREAKING INTO WALLSTREET

Item #2: It's unusual to record only a 1% Loan Mark on the Seller's Loan Portfolio; this percentage should be in the 5-10% range in most cases.

Item #3: The Seller's Allowance for Loan Losses should be written down in the deal.

Item #4: No Core Deposit Intangibles (CDI) are created in this deal, which is possible but extremely unusual.

Item #5: The Seller's Goodwill and Other Intangible Assets are written down and replaced, but that is also highly unusual in bank M&A deals.

Item #6: A Deferred Tax Liability is incorrectly created – the Seller's PP&E is not written up in the deal, so a new DTL should not be created.

Item #7: $117.1 million of the Seller's Common Shareholders' Equity is written down in the deal, but the Seller only has $113.5 million of Common Shareholders' Equity.

a. The co-worker is right about all of these items.

b. Only items #3 and #4.

c. Only items #1, #3, #4, and #6.

d. Only items #1, #3, #4, #6, and #7.

e. Only items #2, #3, #4, and #5.

2. **You are marking the Seller's entire Balance Sheet to market value in a bank merger model, and then amortizing the adjustments over the average maturity of each Asset or Liability. The screenshot below shows your assumptions:**

Balance Sheet Item:	Book Value:	Market Value:	Amort. Period:
Investments and AFS/HTM Securities:	200.0	98.0%	4.0
Federal Funds Sold:	100.0	100.0%	5.0
Gross Loans:	500.0	98.0%	2.0
Deposits:	400.0	98.0%	1.0
Total Debt:	100.0	102.0%	4.0
Federal Funds Purchased:	100.0	100.0%	5.0

Based on these figures, what will the YEAR 2 Income Statement impact of this amortization be?

a. ($1.5).

b. $1.5.

c. ($6.5).

d. $6.5.

3. **You are building a bank merger model, and you want to make a quick estimate for the impact of a Deposit Divestiture on the combined bank's Balance Sheet. Here are the relevant figures for the Buyer and Seller:**

- **Buyer Deposits:** $500 million.
- **Seller Deposits:** $100 million.
- **Buyer Tax Rate:** 40.0%.
- **Total Deposits in the Country:** $5.7 billion.
- **Maximum % of Total Deposits in Country Allowed at One Bank:** 10.0%.
- **Premium Received for Divested Deposits:** 10.0%.
- **Seller Loan / Deposit Ratio:** 25.0%.
- **Seller Securities / Deposit Ratio:** 75.0%.

Based on this information, how would the combined bank's Balance Sheet change after the required Deposit Divestiture?

a. Deposits decrease by $28.2 million, so the L&E side is down by $28.2 million; on the other side, Loans decrease by $7.5 million, Securities decrease by $22.5 million, and Cash increases by $1.8 million, so the Assets side is down by $28.2 million as well.

b. Deposits decrease by $30.0 million, and Retained Earnings increase by $1.8 million, so the L&E side is down by $28.2 million; on the other side, Loans decrease by $7.5 million, Securities decrease by $22.5 million, and Cash increases by $1.8 million, so the Assets side is down by $28.2 million as well.

BREAKING INTO WALLSTREET

c. Deposits decrease by $30.0 million, and Retained Earnings increase by $3.0 million, so the L&E side is down by $27.0 million; on the other side, Loans decrease by $7.5 million, Securities decrease by $22.5 million, and Cash increases by $3.0 million, so the Assets side is down by $27.0 million as well.

d. Deposits decrease by $27.0 million, so the L&E side is down by $27.0 million; on the other side, Loans decrease by $7.5 million, Securities decrease by $22.5 million, and Cash increases by $3.0 million, so the Assets side is down by $27.0 million as well.

4. **Will the combined company's Dividends in a bank merger model be higher or lower than the Buyer's standalone Dividends?**

   a. Higher, since you add together the Buyer and Seller's Dividends, and both companies are likely to target similar CET 1 levels.

   b. They'll be similar to the Buyer's standalone Dividends initially because the write-down of the Seller's Common Shareholders' Equity reduces the combined company's CET 1.

   c. They'll be lower initially because of the Restructuring and Loan Mark Amortization in the first year, but eventually, they'll be higher.

   d. It's impossible to give a definitive answer because it depends on each company's CET 1 levels, the combined company's targeted CET 1, the transaction funding, and the year.

5. **Which of the following conditions is MOST LIKELY to result in Tangible Book Value per Share (TBVPS) accretion in a bank M&A deal? The answer choice you select must also be *plausible* in the context of M&A deals.**

   a. If the Buyer funds the entire deal with Debt or Cash rather than Stock.

   b. If the Seller's Common Shareholders' Equity is *not* written down in the deal.

c. If the Buyer is trading at a much higher P / E multiple than the Seller, and it funds the deal with 100% Stock.

d. If the Buyer funds the deal with 100% Stock rather than Debt or Cash.

e. If the Buyer acquires the Seller for 10% of its Book Value, and it funds the deal with 100% Stock.

6. As an alternative to the traditional accretion/dilution metrics, you are also calculating the internal rate of return (IRR) in a bank merger model. The screenshot below shows your calculations:

		Projected										
Internal Rate of Return (IRR):	*Units:*	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
Seller's Net Income to Common:	$ M		$ 218.7	$ 241.9	$ 275.2	$ 291.1	$ 306.2	$ 321.9	$ 337.1	$ 351.8	$ 357.5	$ 363.3
(+/-) After-Tax Adjustments:	$ M		144.3	324.2	345.3	356.0	367.1	378.5	390.3	402.4	415.0	427.9
Seller's Adjusted Net Income to Common:	$ M		**363.0**	**566.1**	**620.4**	**647.1**	**673.3**	**700.4**	**727.4**	**754.2**	**772.5**	**791.2**
Growth Rate in Combined Dividends Issued:	%					8.0%	7.5%	7.0%	6.5%	6.0%	5.5%	5.0%
IRR Calculation:												
(-) Equity Purchase Price:	$ M	(5,000.0)	-	-	-	-	-	-	-	-	-	-
(-) Capital Infusion Into Target:	$ M		(800.0)	-	-	-	-	-	-	-	-	-
(+) Dividends Issued:	$ M		-	748.2	1,498.1	1,617.9	1,739.3	1,861.0	1,982.0	2,100.9	2,216.4	2,327.3
(+) Terminal Value of Seller's Net Income:	$ M		-	-	-	-	-	-	-	-	-	7,912.4
Net Cash Flows:	$ M	**$ (5,000.0)**	**$ (800.0)**	**$ 748.2**	**$ 1,498.1**	**$ 1,617.9**	**$ 1,739.3**	**$ 1,861.0**	**$ 1,982.0**	**$ 2,100.9**	**$ 2,216.4**	**$10,239.7**
Internal Rate of Return (IRR):	%	**23.0%**										

The After-Tax Adjustments are based on the expense synergies realized in the deal, Restructuring costs, and federal funding differentials.

You have also capitalized the Seller's Net Income to Common at a 10x P / E multiple in Year 15 to calculate its Terminal Value.

Based on this IRR of 23%, which is twice the Buyer's Cost of Equity, you recommend that the Buyer pursue the deal. What is the main PROBLEM with this calculation?

a. You can't include only Combined Dividends issued; you must subtract the Dividends the Buyer would have issued as a standalone entity.

b. You should not include any capital infusions into the Seller because they do not count toward the "true cost" of the acquisition.

c. The 10x P / E multiple for the Seller's Net Income in Year 15 is far too high; by that point, the Seller's P / E multiple should have declined to a lower level.

d. You can't attribute the expense synergies and Restructuring entirely to the Seller in this deal.

7. Which of the following reasons BEST explains why you might focus on the Year 2 or 3 accretion/dilution in a bank M&A deal?

a. The Expense Synergies in the deal might be fully realized only in Year 2 or 3.

b. There may be high, non-recurring Restructuring Costs in Years 1-2 as a combined company.

c. The Amortization of Mark-to-Market Adjustments may differ significantly in Year 1 vs. the following years, especially if the bank's Assets or Liabilities have short maturities.

d. It may take 1-2 years for the combined company's capital levels to normalize; before that point, capital infusions or changes in Dividends could distort accretion/dilution.

e. All of the above.

8. You've built a bank merger model where you've added together the Tier 2 Capital of the Buyer and Seller to calculate the Combined Tier 2 Capital.

Why is this INCORRECT?

a. The Seller's Allowance for Loan Losses is written down in the deal.

b. New Debt that could be used to fund the deal may qualify as Tier 2 Capital.

c. The Seller's Qualifying Long-Term Debt is typically refinanced in any M&A deal.

d. Everything above is correct.

e. Only the first and second answer choices are correct.

f. Only the first and third answer choice are correct.

g. Only the second and third answer choices are correct.