

Bank & Financial Institution Modeling: – Certification Quiz Questions

Module 4 – Bank M&A and Merger Models

16. The image below shows the Balance Sheet combination in a bank merger model. Your co-worker claims that several items are missing or incorrect. Which of these items is the co-worker CORRECT about?

This question has 2 correct answers and 5 incorrect answers. You must select BOTH correct answers and no incorrect answers to earn a point for this question.

Balance Sheet:	Units:	Year 3	Transaction Adjustments					Pro-Forma Year 3
			Seller:	Debit:	Credit:	Marks:	Divestiture:	
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

- a. 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.
- b. 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.
- c. The Seller's Allowance for Loan Losses should be written down in the deal.
- d. No Core Deposit Intangibles (CDIs) are created in this deal, which is possible but extremely unusual.
- e. The Seller's Goodwill and Other Intangible Assets are written down and replaced, but that is also highly unusual in bank M&A deals.
- f. 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.
- g. \$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.

17. 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.
 - 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.
18. 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 image below this question shows your calculations.

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?

Internal Rate of Return (IRR):	Units:	Projected										
		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%									

- You can't include only Combined Dividends issued; you must subtract the Dividends the Buyer would have issued as a standalone entity.
- You should not include any capital infusions into the Seller because they do not count toward the "true cost" of the acquisition.
- 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.
- You can't attribute the expense synergies and restructuring entirely to the Seller in this deal.