

Bank & Financial Institution Modeling: – Certification Quiz Questions

Module 2 – Bank Operating Model

6. You are building a 3-statement projection model with Base, Upside, and Downside Scenarios for a commercial bank in a developed country. The Base and Upside cases assume modest, steady GDP growth, while the Downside case assumes a 2-year recession followed by a recovery. The screenshot below this image shows the key assumptions.

What is the MAIN problem with these assumptions?

Loan Portfolio Projections:	Units:	Historical					Projected				
		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Nominal GDP Growth Rates:											
Base	%						2.5%	2.5%	2.0%	2.0%	2.0%
Upside	%						3.0%	3.5%	3.5%	3.0%	3.0%
Downside	%						0.5%	(3.0%)	(3.0%)	1.0%	2.0%
Selected Nominal GDP Growth Rate:	%	1.5%	2.0%	1.2%	2.2%	2.9%	2.5%	2.5%	2.0%	2.0%	2.0%
Lending Market Share:											
Selected Market Share Percentage:	%	0.01%	0.01%	0.06%	0.15%	0.27%	0.40%	0.50%	0.60%	0.70%	0.80%
Base	%						0.40%	0.50%	0.60%	0.70%	0.80%
Upside	%						0.45%	0.60%	0.75%	0.85%	1.00%
Downside	%						0.35%	0.40%	0.50%	0.60%	0.70%
Charge-Offs & Loan Loss Reserves:											
Net Charge-Offs % Average Gross Loans:	%			0.05%	0.09%	0.05%	0.11%	0.11%	0.12%	0.12%	0.13%
Base	%						0.11%	0.11%	0.12%	0.12%	0.13%
Upside	%						0.10%	0.10%	0.11%	0.11%	0.12%
Downside	%						0.10%	0.09%	0.08%	0.10%	0.11%
Provisions for Credit Losses % Average Loan Balances:											
Selected Provision for CLs % Average Loans:	%			0.23%	0.08%	0.13%	0.15%	0.16%	0.17%	0.18%	0.19%
Base	%						0.15%	0.16%	0.17%	0.18%	0.19%
Upside	%						0.15%	0.15%	0.16%	0.16%	0.16%
Downside	%						0.13%	0.12%	0.10%	0.11%	0.12%

- a. The assumed GDP growth rates are not different enough in the different cases.
- b. The bank's Lending Market Share grows far too rapidly in all the cases, and the historical data doesn't support these projected growth rates.

- c. The Net Charge-Offs and Provisions for Credit Losses as percentages of Average Loans should *increase* in the recession years of the Downside case.
 - d. In the Base and Upside cases, the Net Charge-Offs and Provisions for Credit Losses should increase to significantly higher levels.
 - e. All of the above.
7. You're still working on the same 3-statement projection model for the bank described in the previous question. How would you expect the Yields, Spreads, and Interest Rates to differ in the different cases?
- a. The benchmark rate, such as SOFR or the Federal Funds Rate, will be lowest in the Downside case and higher in the other cases since central banks tend to cut rates during recessions and increase them when the economy expands.
 - b. The Yields on Interest-Earning Assets will be higher in the Base and Upside cases.
 - c. The Yields on Interest-Earning Assets will be about the same in all the cases, but the Interest Rates paid on Interest-Bearing Liabilities will be lowest in the Downside case.
 - d. The Spreads against the benchmark rate will rise over time for both Interest-Earning Assets and Interest-Bearing Liabilities.
8. You are estimating a bank's Liquidity Coverage Ratio (LCR) because the firm discloses the LCR percentage but not the calculations that go into it. This bank is a small, pure-play firm with a simple Balance Sheet that includes mostly Cash and Loans on the Assets side and mostly Deposits and a small amount of Debt on the Liabilities & Equity side.

You estimate the LCR based on the Liquid Assets and Net Cash Outflows linked to a 10% Deposit Run-Off Rate and 50% of Lease and Installment Credit repayments, as shown in the image below this question.

What is the MOST LIKELY reason why your estimate for the LCR differs significantly from the company-reported LCR?

Liquidity Coverage Ratio Calculations:	Units:	Historical				
		Year 1	Year 2	Year 3	Year 4	Year 5
Run-Off Rate - Retail Deposits:	10.0%					
% Qualifying Retail and SME Repayments:	50.0%					
Finance Lease Receivables (<= 1 Year):	£ M			£ 44.1	£ 52.4	£ 54.7
% Gross Loans:	%			5.9%	3.9%	2.4%
Installment Credit Receivables (<= 1 Year):	£ M			109.0	125.4	149.3
% Gross Loans:	%			14.6%	9.3%	6.5%
Liquid Assets:						
(+) Cash:	£ M			0.2	206.6	313.1
(+) Marketable Sec. - Central Banks/Sovereigns:	£ M			-	-	-
(+) Debt Securities - Central Banks/Sovereigns:	£ M			144.9	-	-
(+) Other Securities and Bonds:	£ M			-	-	-
Total Liquid Assets:	£ M			145.1	206.6	313.1
Net Cash Outflows:						
(+) Percentage of Retail and SME Deposits:	£ M			92.4	146.3	242.1
(+) Unsecured Wholesale Deposits:	£ M			-	-	-
(+) Secured Funding:	£ M			-	-	-
(+) Derivatives Payable:	£ M			-	-	-
(+) Committed Credit & Contractual Obligations:	£ M			-	-	-
(-) Reverse Repo and Securities Borrowing:	£ M			-	-	-
(-) Lines of Credit and Operational Deposits:	£ M			-	-	-
(-) % of Retail / SME Scheduled Repayments:	£ M			(76.6)	(88.9)	(102.0)
Total Net Cash Outflows:	£ M			15.8	57.4	140.1
Liquidity Coverage Ratio (LCR):	%	N/A	N/A	917.2%	359.9%	223.5%
Company-Reported LCR:	%	N/A	N/A	N/A	N/A	326.0%

- The company has additional Liquid Assets, such as certain Loans or Derivatives, that increase the numerator of the LCR.
- The company projects its Net Cash Outflows in the “stressed 30-day period” based on its full Cash Flow Statement, not just the items shown here.
- The company might assume a lower Run-Off Rate for its Deposits, or it might exclude a portion of its Total Deposits from the figure.

- d. The percentage of Qualifying Lease and Installment Credit repayments may be significantly lower than the 50% assumed here.
9. When calculating the summary statistics in a bank operating model, you notice that the Return on Equity (ROE) and Return on Tangible Common Equity (ROTCE) both increase over time, while the Return on Assets (ROA) and Return on Tangible Assets (ROTA) decrease slightly over time. Which of the following statements correctly explains this result and the implications for the bank's regulatory capital ratios?
- a. You didn't tie Dividends to the Targeted CET 1 Ratio; therefore, ROA and ROTA both decline when they should increase.
 - b. It means that Non-Interest-Earning Assets increase by more than Interest-Earning Assets, but it does not make a predictable impact on the regulatory capital ratios.
 - c. It means that Non-Interest-Earning Assets decrease by more than Interest-Earning Assets, and it also implies that the bank's regulatory capital ratios decline.
 - d. None of the above – it is not possible for ROE and ROTCE to increase as ROA and ROTA decrease.
10. You've finished a 3-statement projection model for a commercial bank, but you get an odd result at the end: The bank's final year CET 1 Ratio is highest in the Downside case and lowest in the Upside case.

Which assumptions MOST LIKELY explain this result, and does this result indicate that your model is wrong?

- a. This happened because of lower Loan Growth in the Downside case, but the same CET 1 Target; it's not necessarily wrong because the bank's ROE and ROTCE are also likely to be lower in the Downside case, which implies lower multiples.
- b. This happened because of lower Loan Growth in the Downside case, but the same CET 1 Target; it's wrong because the bank's valuation is based on TBV, and its TBV should always be lowest in the Downside case.

- c. This happened because of different CET 1 Targets but similar Loan Growth assumptions in the different cases; it's not "wrong," but it is misleading since the projected TBV should be lowest in the Downside case.

- d. This happened because of different CET 1 Targets but similar Loan Growth assumptions in the different cases; it's incorrect because the assumptions should be the opposite of these.