

COVER SHEET FOR HOME STUDY PROBLEM
SOUTH CAROLINA BANKERS SCHOOL

SECOND YEAR CLASS -- 2022 School Session

HOME STUDY PROBLEM I

Based on Lectures in **ASSET/LIABILITY MANAGEMENT**

Instructor **Mr. Dale S. Sheller**

Submitted by: Name _____

Bank _____

Bank's Mailing Address _____

ZIP CODE

List the other members of your class with whom you worked in preparing this solution:

I certify that this home study problem is my original work and that all writings by any other person, business, or organization, including my own bank, have been carefully documented. I have not shared my completed work with any other SCBS student nor have I read the completed work of any other students.

Signature: _____

Due Date **September 14, 2022**

Date Submitted _____

Date SCBS Received _____

Date Returned to Student _____

ATTENTION STUDENT: UPLOAD TO SCBA's PORTAL OR MAIL HOME STUDY PROBLEM TO:

South Carolina Bankers School
Post Office Box 1483
Columbia, S.C. 29202

OR EXPRESS/REGISTERED MAIL TO: 2009 Park Street, Columbia, SC 29201

Home Study Problem – Asset/Liability Management

Problem consists of **three parts**. The first part asks that you answer a series of questions pertaining to interest rate risk for a hypothetical bank. The second part requires that you obtain data for your bank and analyze it. The third part represents a series of general questions. Answer all questions in each part completely and concisely. If you do not work for a financial institution, select one from your trade area or for which you can obtain data.

Part 1. Analysis of Data for Anytown Bank (AB)

Answer the following questions related to the data for Anytown Bank (AB). View each question separately. Note that the data is constructed assuming that rates stay constant.

Assets		Average Interest Rate
Non-int. bearing Cash	\$27,000,000	0.00%
Rate Sensitive Earning Assets*	\$271,000,000	5.15%
Fixed Rate Earning Assets	<u>\$202,000,000</u>	6.15%
Total Assets	\$500,000,000	
Liabilities/Capital		Average Interest Rate
Non-int. bearing Demand Dep.	\$55,000,000	0.00%
Rate Sensitive Liabilities*	\$190,000,000	1.55%
Fixed Rate Liabilities	<u>\$205,000,000</u>	1.92%
Capital	<u>\$50,000,000</u>	0.00%
Total Liabilities & Capital	\$500,000,000	

*Rate Sensitive assets and liabilities are those that AB expects to reprice within one year.

A. Calculate AB's expected net interest income and net interest margin (NIM) for the next year (**Note:** Please use **Total Earning Assets** for NIM denominator). Show all your work.

B. Calculate AB's 1-year GAP according to the information provided. Assuming a parallel shift in the yield curve:

1. Determine how much AB's net interest income is expected to change if rates fall by 1% during the year. Calculate the new NIM after the change. Show all work.

2. Determine how much AB's net interest income is expected to change if rates rise by 0.50% during the year. Calculate the new NIM after the change. Show all work.

C. Suppose that the AB obtains \$15 million in new deposits from customers in the form of 2-year maturity fixed rate time deposits. AB lends out the money in new 2-year maturity, floating rate loans priced at the Prime Rate plus 1.50%. Will the transaction increase or decrease AB's **overall interest rate risk**? Explain why.

Part 2: Analysis of Your Bank

Obtain recent balance sheet and income statement data for December 31, 2021 and December 31, 2020 for your bank (UBPR or Call Report from FFIEC). Use this information to answer the following questions.

- A. What was your bank's net interest income in each year and how much did it change between years?
- B. Calculate your bank's net interest margin (NIM) for each year using year-end balance sheet data and discuss how it changed between the two years. (Use total earning assets for the denominator here, can be found on balance sheet page of the UBPR.)
- C. Discuss whether each of the following, when viewed separately, caused the bank's net interest income to change between years. In each case, explain your reasoning.
1. Changing composition of assets
 2. Changing composition of liabilities and equity
 3. Changing volume of assets
 4. Changing volume of liabilities and equity
 5. Changing level of interest rates (general discussion of how interest rates have impacted your bank's balance sheet and income statement)

Part 3: Interest Rate Risk

Attached is a Rate Sensitivity Gap Report for Sample Bank (SB). To generate data, all rates are assumed to remain constant in the future. Use the information below and on the next page to answer the following questions:

- A. Calculate SB's periodic GAPs for 1-3 months and 3-12 months, respectively. Show all work.
- B. Calculate SB's cumulative GAP for 12 months. Is the bank positioned to increase income or decrease income if interest rates rise over the next year? Provide your reasoning.
- C. Sample Bank has a policy statement that requires the one-year cumulative GAP to remain between plus or minus 15% of earning assets. Is SB within policy according to this data? Explain.
- D. Consider the interest rate scenario data below over the next year.
1. What will happen to SB's expected earnings if rates decrease 1%? Explain.
 2. What will happen to SB's expected earnings if rates increase 1%? Explain.
 3. Is SB asset sensitive or liability sensitive according to the interest rate scenario data below? Explain why. (**Hint:** Think about what basic GAP theory tells us on expected earnings changes if a bank is asset sensitive or liability sensitive).

Interest Rate Scenario	-2%	-1%	Unchanged	1%	2%
Net Interest Income Change	-\$381,000	-\$79,444	\$7,819	\$53,070	\$82,306

Rate Sensitivity Gap Report - Sample Bank

	Floating	1-3 mth.	3-12 mth.	1-3 years	3-5 years	5-15 years	>15 years	Total
Fed Funds Sold & Repos	-	-	-	-	-	-	-	-
Int. Bearing Deposits in Banks	-	-	31	-	-	-	-	31
Gov, Agency and Muni Sec.	-	158	152	628	445	-	-	1,383
MBS & CMOs	-	2,731	8,407	5,827	416	-	-	17,381
Total Debt Securities	-	2,889	8,590	6,455	861	-	-	18,795
Loans Maturities	15,381	8,478	2,100	21,487	1,558	1,707	609	51,320
Total Earning Assets	15,381	11,367	10,690	27,942	2,419	1,707	609	70,115
Checking (Int. Bearing)	563	-	-	10,695	-	-	-	11,258
MMDA & Savings	8,357	-	-	23,787	-	-	-	32,144
Total Savings Deposits	8,920	-	-	34,482	-	-	-	43,402
CDs <\$250,000	-	1,983	3,496	1,104	62	-	-	6,645
CDs >\$250,000	-	970	1,854	1,175	203	-	-	4,202
Total Time Deposits	-	2,953	5,350	2,279	265	-	-	10,847
Other Borrowings	-	2,509	1,065	-	-	-	-	3,574
FFP and Repos	-	-	5,806	-	-	-	-	5,806
Total Borrowed Funds	-	2,509	6,871	-	-	-	-	9,380
Total Int. Bearing Liabilities	8,920	5,462	12,221	36,761	265	-	-	63,629
Periodic GAP	??	??	??	??	??	??	??	??
Cumulative GAP	??	??	??					