Runchen Du
ID: 41704416
Email: durunchen126@gmail.com

Assignment-2
FIN901 - Commercial Bank Management
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1 Chapter 7

Problem 7-8
The First National Bank of Spotsburg finds that its asset and liability portfolio contains the following distribution of maturities and repricing opportunities:

When and by how much is the bank exposed to interest rate risk? For each maturity or repricing interval, what changes in interest rates will be beneficial and which will be damaging, given the current portfolio position?

	Coming Week	Next 30 Days	Next 31-90 Days	More Than 90 Days
Loans	$210.00	$300.00	$475.00	$525.00
Securities	21.00	26.00	40.00	70.00
Interest-sensitive assets	231	326	515	595
Transaction deposits	$350.00	$0.00	$ 0.00	$0.00
Time accounts	100.00	276.00	196.00	100.00
Money market borrowings	136.00	140.00	100.00	50.00
Interest-sensitive liabilities	586	416	296	150
GAP	-355	-90	219	445
Cumulative GAP	-355	-445	-226	219

Solution:

First National has a negative gap in the first and the second periodS and therefore would benefit if the interest rates fell. In the third period, it has a positive gap and would therefore benefit from the increase of the interest rate. However, its cumulative gap is still negative. The third period is another positive gap and hence the bank would benefit if the interest rates rise. Its cumulative gap is positive, showing that rising interest rates would be beneficial to the bank overall.

Problem 7-9
Fluffy Cloud Savings Bank currently has the following interest-sensitive assets and liabilities on its balance sheet with the interest-rate sensitivity weights noted.

What is the bank's current interest-sensitive gap? Adjusting for these various interest rate sensitivity weights what is the bank's weighted interest-sensitive gap? Suppose the federal funds interest rate increases or decreases one percentage point. How will the bank's net interest income be affected (a) given its current balance sheet makeup and (b) reflecting its weighted balance sheet adjusted for the foregoing rate-sensitivity indexes?

Solution:

Interest-Sensitive Assets	**$Amount**	**Rate Sensitivity Index**
Federal fund loans	$50.00	1.00
Security holdings	50.00	1.20
Loans and leases	310.8	1.45
Interest-Sensitive Liabilities	**$Amount**	**Rate Sensitivity Index**
Interest-bearing deposits	$250.00	0.75
Money-market borrowings	85.00	0.95

- Current interest-sensitive gap:

$$\begin{aligned} \textit{Dollar IS GAP} &= ISA - ISA \\ &= (50 + 50 + 310.8) - (250 + 85) \\ &= 75.8 \\ \textit{Change in Bank's Income} &= \textit{IS GAP} \times \textit{Change in interest rate} \\ &= 75.8 \times 0.01 = 0.758 \end{aligned}$$

  Using the regular IS Gap, net income will change by plus or minus 0.758.

- Weighted interest-sensitive gap:

$$\begin{aligned} \textit{Weighted IS GAP} &= (50 \times 1 + 50 \times 1.2 + 310.8 \times 1.45) - (250 \times 0.75 + 85 \times 0.95) \\ &= 560.66 - 268.25 \\ &= 292.41 \\ \textit{Change in Bank's Income} &= \textit{Weighted IS GAP} \times \textit{Change in interest rate} \\ &= 292.41 \times 0.01 = 2.9241 \end{aligned}$$

  Using the weighted IS Gap, net income will change by plus or minus 2.9241.

Problem 7-15
A savings bank's weighted average asset duration is 10 years. Its total liabilities amount to $925 million, while its assets total 1 billion dollars. What is the dollar-weighted duration of the bank's liability portfolio if it has a zero leverage-adjusted duration gap?

Solution: Given the bank has a leverage-adjusted duration gap equal to zero:

$$\begin{aligned} \textit{Leverage-adjusted Duration GAP} &= D_A - D_L \times \frac{\textit{Total liabilities}}{\textit{Total Assets}} \\ D_L &= (D_A - \textit{Leverage-adjusted Duration GAP}) \times \frac{\textit{Total Assets}}{\textit{Total Liabilities}} \\ &= (10 - 0) \times \frac{1000}{925} \\ &= 10.8108 \end{aligned}$$

The dollar-weighted duration of the bank's liability portfolio is 10.8108.

Problem 7-16
Blue Moon National Bank holds assets and liabilities whose average durations and dollar amounts are as shown in this table:

What is the weighted-average duration of Blue Moon's asset portfolio and liability portfolio? What is its leverage-adjusted duration gap?

Asset and Liability items	Avg. Duration (years)	Dollar Amount (millions)
Investment-grade bonds	12.99	65.00
Commercial loans	4.00	400.00
Consumer loans	8.00	250.00
Deposits	1.10	600.00
Nondeposit borrowings	0.25	50.00

Solution:

- Weighted-average duration of Blue Moon's asset portfolio and liability portfolio:

$$D_A = \Sigma(w_i \times D_i) = \frac{65}{715} \times 12.99 + \frac{400}{715} \times 4 + \frac{250}{715} \times 8 = 6.2159$$
$$D_L = \Sigma(w_i \times D_i) = \frac{600}{650} \times 1,1 + \frac{50}{650} \times 0.25 = 1.0346$$

- Leverage-adjusted duration Gap:

$$\begin{aligned} \textit{Leverage-adjusted Duration GAP} &= D_A - D_L \times \frac{\textit{Total liabilities}}{\textit{Total Assets}} = 6.2159 - 1.0346 \times \frac{650}{715} \\ &= 5.2753 \end{aligned}$$

2 Chapter 8

Problem 8-3
What kind of futures or options hedges would be called for in the following situations?

a. Market interest rates are expected to increase and your financial firm's asset-liability managers expect to liquidate a portion of their bond portfolio to meet customers' demands for funds in the upcoming quarter.

b. Your financial firm has interest-sensitive assets of $79 million and interest-sensitive liabilities of $88 million over the next 30 days, and market interest rates are expected to rise.

c. A survey of Tuskee Bank's corporate loan customers this month (January) indicates that on balance, this group of firms will need to draw $165 million from their credit lines in February and March, which is $65 million more than the bank's management has forecasted and prepared for. The bank's economist has predicted a significant increase in money market interest rates over the next 60 days.

d. Monarch National Bank has interest-sensitive assets greater than interest-sensitive liabilities by $24 million. If interest rates fall (as suggested by data from the Federal Reserve Board), the bank's net interest margin may be squeezed due to the decrease in loan and security revenue.

e. Caufield Thrift Association finds that its assets have an average duration of 1.5 years and its liabilities have an average duration of 1.1 years. The ratio of liabilities to assets is .90. Interest

rates are expected to increase by 50 basis points during the next six months.

Solution:

a. Short hedge in futures should be used, which can generate a profit as security prices do fall because of the increase of the market interest rates.

   Similarly, put options should be used to offsite the potential loss.

b. The interest-sensitive liabilities exceed interest-sensitive assets by $88 - 79 = \$9 million$ which means that an increase of the interest rate can bring losses in this situation.

   Short hedge and put option should be used with dollar value approximately equalling to \$9 million to hedge their risk from the rising interest rate.

c. Short hedge and put option should be used since the forecast of higher interest rates will increase the cost of borrowing.

   To offset the the potential loss. the bank's management should hedge at the dollar amount of the additional loan demand $(\$65 million)$.

d. Long hedge and call options should be used to cover the gap between the interest-sensitice assets and interest-sensitive liabilities $(\$24 million)$

   If interest rates fall, the bank's net interest margin will likely be squeezed due to the faster fall in interest income. Purchases of financial futures contracts followed by a subsequent sale or Transactions of call options would probably be helpful here.

e.

$$\begin{aligned} \textit{Leverage-adjusted Duration GAP} &= D_A - D_L \times \frac{\textit{Total liabilities}}{\textit{Total Assets}} = 1.5 - 1.1 \times 0.90 \\ &= 0.51 \end{aligned}$$

   Since *Duration Gap* > 0, a 50-basis point rise in money-market rates would reduce asset values relative to liabilities which mean its net worth would decline. Short hedge and put options should be used.

Problem 8-6
It is March and Cavalier Financial Services Corporation is concerned about what an increase in interest rates will do to the value of its bond portfolio. The portfolio currently has a market value of \$101.1 million, and Cavalier's management intends to liquidate \$1.1 million in bonds in June to fund additional corporate loans. If interest rates increase to 6 percent, the bond will sell for \$1 million with a loss of \$100,000. Cavalier's management sells 10 June Treasury bond contracts at 109-050 in March. Interest rates do increase, and in June Cavalier's management offsets its position by buying 10 June Treasury bond contracts at 100-030.

a. What is the dollar gain/loss to Cavalier from the combined cash and futures market operations described above?

b. What is the basis at the initiation of the hedge?

c. What is the basis at the termination of the hedge?

d. Illustrate how the dollar return is related to the change in the basis from initiation to termina-

tion.

Solution:

a. Loss on cash transaction: $\$100,000$

Gain on futures transaction: $10 \times (109,156.25 - 100,093.75) = 10 \times 9062.5 = 90625$

Over Loss: $90,625 - 100,000 = \$9375$

The dollar loss to Cavalier from the combined cash and futures market operations is $9375.

b. The basis at the initiation of the hedge:

$$110,000\text{–}109,156.25 = 843.75$$

c. The basis at the termination of the hedge:

$$100,000\text{–}100,093.75 = -93.75$$

d. With a short hedge in futures:

$$\begin{aligned} \textit{Dollar return} &= \textit{Basis at termination of hedge} - \textit{Basis at initiation of hedge} \\ &= -93.75 - 843.75 = -937.50 \textit{ per contract} \end{aligned}$$

Problem 8-15
A savings and loan's credit rating has just slipped, and half of its assets are long-term mortgages. It offers to swap interest payments with a money center bank in a $100 million deal. The bank can borrow short term at LIBOR (3 percent) and long term at 3.95 percent. The S&L must pay LIBOR plus 1.5 percent on short-term debt and 7 percent on long-term debt. Show how these parties could put together a swap deal that benefits both of them.

Parties to the Swap	Fixed Interest Rates Parties Must Pay if They Issue Long-Term Bonds	Floating Interest Rates Parties Must Pay Pay if They Receive a Short-Term Loan	Potential Intereset Rate Savings of Each Borrower
S & L	7%	LIBOR+1.5%	2.5%
Money center bank	3.95%	LIBOR	0.95%
Quality spread	3.05%	1.5%	1.55%

Table 1: Caption

Solution: If the money-center bank borrows long-term at 3.95% and the S&L at LIBOR + 1.5% (4.5%) and they exchange interest payments, both would save if the S&L agreed to pay a portion of the bank's basic borrowing rate. For example, the S&L could pay 2% to the bank which would more than cover the difference. After the exchange in payments and basis points the S&L would pay 4.5% + 2% (6.5%) which is lower than the S&L's long term rate (7%) and the bank would pay 3.95% - 2% (1.95%), which is less than the bank's short term rate (3%) and each party would get the type of payment they want.

Problem 8-16
A financial firm plans to borrow $75 million in the money market at a current interest rate of 4.5 percent. However, the borrowing rate will float with market conditions. To protect itself, the firm has purchased an interest-rate cap of 5 percent to cover this borrowing. If money market interest rates on these funds sources suddenly rise to 5.5 percent as the borrowing begins, how much interest in total will the firm owe and how much of an interest rebate will it receive, assuming the borrowing is for only one month?

Solution:

- Total interest the firm owe:

$$\begin{aligned} \textit{Total interest} &= \textit{Amount borrowed} \times \textit{Interest rate} \times \frac{\textit{number of months}}{12} \\ &= 75 \times 5.5\% \times \frac{1}{12} \\ &= \$0.34375\ \textit{million} = \$343,750 \end{aligned}$$

- Interest rebate the firm will receive:

$$\begin{aligned} \textit{Rebate} &= (\textit{Market interest rate} - \textit{Cap rate} \times \textit{Amount borrowed} \times \frac{\textit{number of months}}{12} \\ &= (5.5\% - 5\%) \times 75 \times \frac{1}{12} \\ &= \$0.03125\ \textit{million} = \$31,250 \end{aligned}$$

3 Chapter 9

Problem 9-1
GoodTimes National Bank placed a group of 10,000 consumer loans bearing an average expected gross annual yield of 7.5 percent in a package to be securitized. The investment bank advising GoodTimes estimates that the securities will sell at a slight discount from par that results in a net interest cost to the issuer of 8 percent. Based on recent experience with similar types of loans, the bank expects 3 percent of the packaged loans to default without any recovery for the lender and has agreed to set aside a cash reserve to cover this anticipated loss. Underwriting and advisory services provided by the investment banking firm will cost 0.5 percent. GoodTimes will also seek a liquidity facility, costing 0.5 percent, and a credit guarantee if actual loan defaults should exceed the expected loan default rate, costing 0.6 percent. Please calculate residual income for GoodTimes from this loan securitization.

Solution: The estimated residual income for Giant National Bank is:

$$\begin{aligned} \textit{Expected Residual Income} =& \textit{Gross Loan Yield} - \textit{Security Interest Rate} \\ & - \textit{Expected Default On Packaged Loans} - \textit{Underwriting And Advisory Fee} \\ & - \textit{Liquidity Facility} - \textit{Credit Enhancement} \\ =& 7.5\% - 8\% - 3\% - 0.5\% - 0.5\% - 0.6\% \\ =& -5.1\% \end{aligned}$$

Problem 9-2
Colburn Corporation is requesting a loan for repair of some assembly line equipment in the amount of $9.5 million. The nine-month loan is priced by Farmers Financial Corporation at a 7.5 percent rate of interest. However, the finance company tells Colburn that if it obtains a suitable credit guarantee the loan will be priced at 7 percent. Lifetime Bank agrees to sell Colburn a standby credit guarantee for $10,000. Is Colburn likely to buy the standby credit guarantee Lifetime has offered? Please explain.

Solution: The interest saving from having the credit guarantee:

$$\begin{aligned} \textit{Interest saving} &= (7.5\% - 7\%) \times 9.5 \times \frac{9}{12} \\ &= \$0.035625\ \textit{million} \\ &= \$35,625 > \$10,000 \end{aligned}$$

Thus, Colburn should buy the standby credit guarantee.

Problem 9-5
What type of credit derivative contract would you recommend for each of these situations:

a A bank plans to issue a group of bonds backed by a pool of credit card loans but fears that the default rate on these credit card loans will rise well above 6 percent of the portfolio—the default rate it has projected. The bank wants to lower the interest cost on the bonds in case the loan default rate rises too high.

b A commercial finance company is about to make a $50 million project loan to develop a new gas field and is concerned about the risks involved if petroleum geologists' estimates of the field's potential yield turn out to be much too high and the field developer cannot repay.

c A bank holding company plans to offer new bonds in the open market next month, but knows that the company's credit rating is being reevaluated by credit-rating agencies. The holding company wants to avoid paying sharply higher credit costs if its rating is lowered by the investigating agencies.

d A mortgage company is concerned about possible excess volatility in its cash flow off a group of commercial real estate loans supporting the building of several apartment complexes. Moreover, many of these loans were made at fixed interest rates, and the company's economics department has forecast a substantial rise in capital market interest rates. The company's management would prefer a more stable cash flow emerging from this group of loans if it could find a way to achieve it.

e First National Bank of Ashton serves a relatively limited geographic area centered upon a moderate-size metropolitan area. It would like to diversify its loan income but does not wish to make loans in other market areas due to its lack of familiarity with loan markets outside the region it has served for many years. Is there a derivative contract that could help the bank achieve the loan portfolio diversification it seeks?

Solution:

a. Credit-linked notes can be used here which grants its issuer the privilege of lowering the amount of loan repayments it must make if some significant factor changes.

b. credit option could be used in this situation which guards against losses in the value of a credit asset. If the developer cannot repay the loan then the option would pay off to protect the commercial finance company against significant loss.

c. A credit risk option could be used because it helps to offset higher borrowing costs that may occur due to changes in credit ratings. The contract would pay off in case that the borrowing costs rise above the spread specified in the option contract.

d. A total return swap could be used here where the counter-party would receive total payments of interest and principal on this real estate loan and the mortgage company would receive a more stable rate of reward based upon the return from a government security.

e. This bank could enter into a credit swap with another bank, where two lenders are able to exchange a portion of their customers' loan repayments. A credit swap permits each institution to broaden the number of markets from which it collects loan revenues and principal, possibly reducing each institution's dependence on one or a narrow set of market areas.

4 Chapter 11

Problem 11-2
Mountain Top Savings is projecting a net liquidity deficit of $5 million next week partially as a result of expected quality loan demand of $24 million, necessary repayments of previous borrowings of $15 million, disbursements to cover operating expenses of $18 million, planned stockholder dividend payments of $5 million, expected deposit inflows of $26 million, revenues from nondeposit service sales of $18 million, scheduled repayments of previously made customer loans of $23 million, asset sales of $10 million, and money market borrowings of $15 million. How much must Mountain Top's expected deposit withdrawals be for the coming week?

Solution:

- Supplies of Liquidity:

$$\begin{aligned} \textit{Total sources of liquidity} =& \textit{Expected deposit inflows} + \textit{Eevenues from nondeposit service sales} + \\ & \textit{Scheduled repayments of previously made customer loans} + \\ & \textit{Asser sales} + \textit{Money market borrowing} \\ =& 26 + 18 + 23 + 10 + 15 \\ =& \$92\ \textit{million} \end{aligned}$$

- Demands for Liquidity:

$$\begin{aligned} \textit{Total uses of liquidity} =& \textit{Expected quality loan demand} + \textit{Necessary repayments of previous borrowings} + \\ & \textit{Disbursements to cover operating expenses} + \\ & \textit{Planned stockholder dividend payments} + \\ & \textit{Deposit Withdrawals} \\ =& 24 + 15 + 18 + 5 + \textit{Deposit Withdrawals} \\ =& 62 + \textit{Deposit Withdrawals} \end{aligned}$$

- Thus:

$$\begin{aligned} \textit{The net liquidity deficit} &= \textit{Liquidity supplies} - \textit{Liquidity demands} \\ -5 &= 92 - (62 + \textit{Deposit Withdrawals}) \\ \textit{Deposit Withdrawals} &= \$35\ \textit{million} \end{aligned}$$

Therefore, the expected deposit withdrawals be for the coming week is $35 million.

Problem 11-3
First National Bank of Lawrenceville has forecast its checkable deposits, time and savings deposits, and commercial and household loans over the next eight months. The resulting estimates (in millions) are shown below. Use the sources and uses of funds approach to indicate which months are likely to result in liquidity deficits and which in liquidity surpluses if these forecasts turn out to be true. Explain carefully what you would do to deal with each month's projected liquidity position.

	Checkable Deposits	Time and Savings Deposits	Commercial Loans	Consumers Loans
January	$120	$550	$650	$140
February	115	500	650	200
March	100	500	700	200
April	90	485	700	150
May	105	465	710	150
June	80	490	700	175
July	90	525	700	175
August	100	515	675	175

	Total Deposits	Estimated Deposit Change	Total Loans	Estimated Loan Change	Estimated Liquidity Deficit or Surplus
January	670	____	790	____	____
February	615	-55	850	60	-115
March	600	-15	900	50	-65
April	575	-25	850	-50	25
May	570	-5	860	10	-15
June	570	0	875	15	-15
July	615	45	875	0	45
August	615	0	850	-25	25

Solution: February, March, May and June may experience liquidity deficits from relatively increased loans and decreased deposits. However, April, July and August will have liquidity surpluses.

Available Actions:

- Liquidity Deficits
    1. Borrowing Federal funds;
    2. Selling some of their loans or securities in the market;
    3. Making repo transactions to borrow funds;
    4. Issuing negotiable CDs in the money market.
- Liquidity Surplus
    1. Making new loans to the customers;
    2. Investing in various money market instruments, such as reverse repo or U.S government Treasury securities.

Since both periods are relatively short, the bank should choose more temporary measures, such as the use of the money market.

Problem 11-4
King Savings is attempting to determine its liquidity requirements today (the last day in August) for the month of September. September is usually a month of heavy loan demand due to the beginning of the school term and the buildup of business inventories of goods and services for the fall season and winter. This thrift institution has analyzed its deposit accounts thoroughly and classified them as explained below.

Management has elected to hold a 75 percent reserve in liquid assets or borrowing capacity for each dollar of hot money deposits, a 20 percent reserve behind vulnerable deposits, and a 5 percent reserve for its holdings of core funds. Assume time and savings deposits carry a zero percent reserve requirement and all checkable deposits carry a 3 percent reserve requirement. King currently has total loans outstanding of $2,389 million, which two weeks ago were as high as $2,567 million. Its loans' mean annual growth rate over the past three years has been about 8 percent. Carefully prepare low and high estimates for King's total liquidity requirement for September.

Millions of Dollars	Checkable Deposits	Savings Deposits	Timess Deposits
Hot money funds	$10	$____	$782
Vulnerable funds	22	152	540
Stable funds	30	285	172

Solution:

- Liability Liquidity Requirement:

$$\begin{aligned}\textit{Liability Liquidity Requirement} =& 0.75 \times (\textit{Hot money funds} - \textit{Legal reserves}) + \\ & 0.2 \times (\textit{Vulnerable funds} - \textit{Legal reserves}) + \\ & 0.05 \times (\textit{Stable funds} - \textit{Legal reserves}) \\ =& 0.75 \times (10 - 10 \times 0.03 + 782) + \\ & 0.2 \times (22 - 22 \times 0.03 + 152 + 540) + \\ & 0.05 \times (30 - 30 \times 0.03 + 285 + 172) \\ =& \$760.7480 \; \textit{million}\end{aligned}$$

- Potencial loans outstanding:

$$\begin{aligned}\textit{Low estimate} &= 2,389 \times 1.08 = \$2,580.12 \; \textit{million} \\ \textit{High estimate} &= 2,567 \times 1.08 = \$2,772.36 \; \textit{million}\end{aligned}$$

- Since

$$\textit{Total liquidity requirement} = \textit{Additional loan demand} + \textit{Deposit liquidity requirement}$$

We have

$$\begin{aligned}\textit{Total liquidity requirement (low estimate)} &= 760.7480 + (2,580.12 - 2,389) \\ &= \$951.868 \; \textit{million} \\ \textit{Total liquidity requirement (high estimate)} &= 760.7480 + (2,772.36 - 2,389) \\ &= \$1,144.108 \; \textit{million}\end{aligned}$$

Problem 11-5
Using the following financial information for Watson National Bank, calculate as many of the liquidity indicators discussed in this chapter for Watson as you can. Do you detect any significant liquidity trends? Which trends should management investigate?

	Most Recent Year	Previous Year
Assets:		
Cash and due from depository institutions	$ 345,000	$ 358,000
U.S. Treasury securities	176,000	178,000
Other securities	339,000	343,000
Pledged securities	287,000	223,000
Federal funds sold and reverse repurchase agreements	175,000	131,000
Loans and leases net	2,148,000	1,948,000
Total assets	3,200,000	3,001,000
Liabilities:		
Demand deposits	500,000	456,000
Savings deposits	730,000	721,000
Time deposits	1,100,000	853,000
Total Deposits	2,430,000	2,130,000
Core deposits	850,000	644,000
Brokered deposits	58,000	37,000
Federal funds purchased and repurchase agreements	217,000	237,000
Other money market borrowings	25,000	16,000

Solution: Watson doesn't appear to have significant liquidity trends since almost half of the indicators used show signs of increasing liquidity while others indicate the opposite result.

- signs of increasing liquidity:
    1. Increased Cash position ratio
    2. Increased Liquid securities indicator
    3. Decreased Capacity ratio
    4. Decreased Pledged securities ratio
- Signs of declining liquidity:
    1. Decreased Net federal funds and repurchase agreements position
    2. Decreased Hot money ratio
    3. Decreased Core deposits ratio
    4. Increased Deposit composition ratio

Liquidity Indicator	Most Recent Year	Previous Year
1.Cash position indicator	345,000/3,200,000	358,000/3,001,000
Cash and Deposits due/Total assets	0.1078	0.1193
2. Liquid securities indicator	176,000/3,200,000	178,000/3,001,000
U.S. government securities/Total assets	0.0550	0.0593
3. Net federal funds and repurchase agreements position	(175,000-217,000)/3,200,000	(131,000-237,000)/3,001,000
Net Federal funds position/Total assets	-0.0131	-0.0353
4. Capacity ratio	2,148,000/3,200,000	1,948,000/3,001,000
Net loans and leases/Total assets	0.6713	0.649117
5. Pledged securities ratio	287,000/(176,000+339,000)	131,000/(178,000+343,000)
Pledged securities/Total security holdings	0.5573	0.2514
6.Hot money ratio	$\frac{345,000+176,000+175,000}{217,000+25,000}$	$\frac{358,000+178,000+131,000}{237,000+16,000}$
Money market assets/Volatile liabilities	2.8760	2.6364
7. Deposit brokerage ratio	58,000/2,430,000	37,000/2,130,000
Brokered deposits /Total deposits	0.0239	0.0174
8. Core deposit ratio	850,000/2,430,000	644,000/2,130,000
Core deposits / Total assets	0.3498	0.3023
9. Deposit composition ratio	500,000/1,100,000	456,000/853,000
Demand deposits/Time deposits	0.4545	0.5346

Problem 11-6
The Bank of Your Dreams has a simple balance sheet. The figures are in millions of dollars as follows: Although the balance sheet is simple, the bank's manager encounters a liquidity challenge when depositors withdraw $500 million.

a. If the asset conversion method is used and securities are sold to cover the deposit drain, what happens to the size of Bank of Your Dreams?

b. If liability management is used to cover the deposit drain, what happens to the size of Bank of Your Dreams

Solution:

a. In this case, the bank would shrink by the amount of deposit withdrawals. Thus total assets would decrease to $5,100 – 500 = $4,600.

b. Since the bank borrows immediately spendable funds to cover all anticipated demands for liquidity, there would be no change in the size of the bank.

Problem 11-8
Suppose Victoria Savings Bank's liquidity manager estimates that the bank will experience a $375 million liquidity deficit next month with a probability of 10 percent, a $200 million liquidity deficit with a probability of 40 percent, a $100 million liquidity surplus with a probability of 30 percent, and a $250 million liquidity surplus bearing a probability of 20 percent. What is this savings bank's

Assets		**Liabilities and Equity**	
Cash	$ 100	Deposits	$4,000
Securities	1,000	Other liabilities	500
Loans	4,000	Equity	600
Total assets	5,100	Total liabilities and equity	5,100

expected liquidity requirement? What should management do?

Solution: The bank's expected liquidity requirement is:

$$\begin{aligned} \textit{Expected liquidity requirement} &= 0.1 \times (-375) + 0.4 \times (-200) + 0.3 \times 100 + 0.2 \times 250 \\ &= \$ - 3.75 \textit{ million} \end{aligned}$$

Since Victoria Savings Bank has an expected liquidity deficit, the bank's liquidity manager should prepare for the institution's cash needs in the short future. The bank can borrow federal funds, sell some of its loans or securities in the market, make repo transactions or issu negotiable CDs in the money market to increase the liquidity.

5 Chapter 16

Problem 16-4
Under which of the six Cs of credit discussed in this chapter does each of the following pieces of information belong?

a. First National Bank discovers there is already a lien against the fixed assets of one of its customers asking for a loan.

b. Xron Corporation has asked for a type of loan its lender normally refuses to make.

c. John Selman has an excellent credit rating.

d. Smithe Manufacturing Company has achieved higher earnings each year for the past six years.

e. Consumers Savings Association's auto loan officer asks a prospective customer, Harold Ikels, for his driver's license.

f. Merchants Center National Bank is concerned about extending a loan for another year to Corrin Motors because a recession is predicted in the economy.

g. Wes Velman needs an immediate cash loan and has gotten his brother, Charles, to volunteer to cosign the note should the loan be approved.

h. ABC Finance Company checks out Mary Earl's estimate of her monthly take-home pay with Mary's employer, Bryan Sims Doors and Windows.

i. Hillsoro Bank and Trust would like to make a loan to Pen-Tab Oil and Gas Company but fears a long-term decline in oil and gas prices.

j. First State Bank of Jackson seeks the opinion of an expert on the economic outlook in Mexico before granting a loan to a Mexican manufacturer of auto parts.

k. The history of Membres Manufacture and Distributing Company indicates the firm has been through several recent changes of ownership and there has been a substantial shift in its principal suppliers and customers in recent years.

l. Home and Office Savings Bank has decided to review the insurance coverages maintained by its borrowing customer, Plainsman Wholesale Distributors

Solution:

a. Collateral

b. Control

c. Character

d. Cash

e. Capacity

f. Conditions

g. Character

h. Cash

i. Conditions

j. Conditions

k. Capacity

l. Collateral

Problem 16-6
Identify which of the following loan covenants are affirmative and which are negative covenants:

a. Nige Trading Corporation must pay no dividends to its shareholders above $3 per share without express lender approval.

b. HoneySmith Company pledges to fully insure its production line equipment against loss due to fire, theft, or adverse weather.

c. Soft-Tech Industries cannot take on new debt without notifying its principal lending institution first.

d. PennCost Manufacturing must file comprehensive financial statements each month with its principal bank.

e. Dolbe King Company must secure lender approval prior to increasing its stock of fixed assets.

f. Crestwin Service Industries must keep a minimum current (liquidity) ratio of 1.5 $ under the terms of its loan agreement.

g. Dew Dairy Products is considering approaching Selwin Farm Transport Company about a possible merger but must first receive lender approval.

Solution:

a. Negative: Restrictions on payment of dividends;

b. Affirmative: Requirement to insure selected assets;

c. Negative: Restrictions against taking on new debt;

d. Affirmative: Requirement of filing periodic financial statements;

e. Negative: Requirement of securing bank's approval before increasing the stock of fixed assets;

f. Affirmative: Requiring a borrower to maintain a minimum current ratio;

g. Negative: Requirement of bank's approval before a proposed merger.