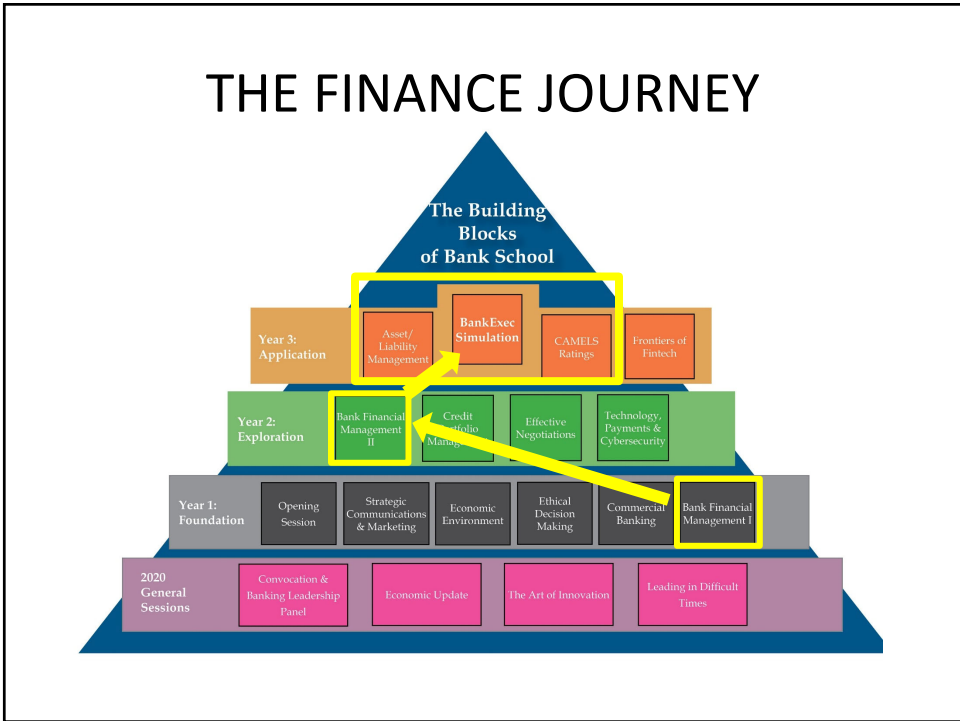


ZOOM VERSION

“Advanced Bank Financial Management / Asset Liability Management Year 2”

Brad E. Schwartz
SEVP & Chief Operating Officer
TowneBank

1



2

Class Overview

- Day 1 - Review Financial Statements / Ratios
- Day 2 – Profitability, Liquidity and Capital
- Day 3 - Interest Rate Risk & Reward
- Day 4 – Mock ALCO Meeting
- Day 5 – Hedging and Strategy, Risk Mgmt, Assignment Review

Integrated BankExec Financial Reports

3

Our Goals

- An deeper understanding of bank financial statements & ratios
- An understanding of what drives bank financial performance and your role
- Understand what is ALCO Management
- Tie all this knowledge together to improve your performance for BankExec Capstone
- Help with your home study assignment

4

How Bank Exec Works

- How Bank Exec works:
 - Competitive marketplace
 - Everyone starts with same bank
 - Make **RAPID** decisions on loan pricing and risk, deposit and funding pricing, marketing, capital activities
 - Model runs and determines ranking of banks in the market based on 10 factors that drive the closing stock price
 - Top stock price wins – EPS drives stock price

5

Home Study Assignment

- Interest Rate Risk and the financial impact from a changing rate environment
 - Answer basic financial questions
 - Understand risks in the balance sheet?
 - What would be your recommendations for the bank to improve their position
- Review further on Friday

6

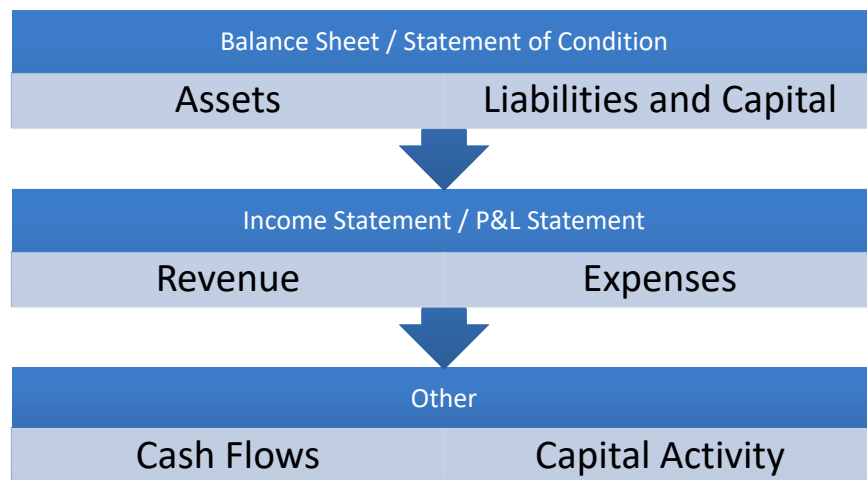
Year 1 Recap

- Ratio Worksheet
 - ROA, ROE, EPS, P/E Ratio, Efficiency Ratios
 - Loan/Deposit, ALLL/Loans, 100/300 Ratios
 - Capital Leverage Ratio, Total Risk Based Capital
 - Asset Yield, Liability Cost, Net Interest Margin
- Financial Statements
 - Balance Sheet
 - Income Statement
- What if Growth Strategy

7

Bank Financial Statements

(Annual & Quarterly Reports)



8

Financial Statement Overview

B00 -- Financial Reports, For Quarter Ending 12/31/21
Third Bank 2009

B01: Balance Sheet -- Page 2
B02: Income Statement -- Page 3
B05: Risk Management Summary -- Page 4
B06: Funds Management -- Page 5

B10: Security Maturities and Portfolio Activity -- Page 6
B12: Security Portfolio -- Page 7

B20: Loan Activity -- Page 8
B22: Loan Profitability and Performance -- Page 9
B24: Loan Decisions -- Page 10

B40: Deposit Activity and Performance -- Page 11
B44: Deposit and Marketing Decisions -- Page 12

B64: Treasury Management, Dividends and Forecast Earnings -- Page 13

C91: Bank Balance Sheets -- Page 14
C92: Income Statements -- Page 15
C93: Community Loan and Deposit Markets -- Page 16
C94: Community Bank Capital Activity -- Page 17
C95: Economic Charts -- Page 18
C96: Economic Reporter -- Page 19

9

===== Cash Items Fed Funds Sold Securities Loans (Net) Business Real Estate Consumer Other Loan Loss Reserve Premises Other Assets ----- Total Assets	<h2>Third Bank Balance Sheet</h2>
=== Liabilities and Equity === Total Deposits Checking Accounts Savings Accounts Time Accounts Certificates of Deposit Borrowed Funds Repurchase Agreements Fed Funds Purchased FHLB Borrowing Other Liabilities Capital Notes Owners Equity ----- Total Liab & Equity	

10

Primary Earning Assets

- Short-term funds/FFS
- Securities/Investments
- Loans
 - Business/Commercial
 - Residential
 - Consumer
 - LESS Loan Loss Reserve (ALLL)

11

Assets	For Quarters Ending			
	12/31/21	9/30/21	6/30/21	3/31/21
==== Assets =====				
Cash Items	49.695	49.616	49.108	46.083
Fed Funds Sold	8.911	55.247	103.423	104.537
Securities	24.687	24.751	24.793	34.823
Loans (Net)	680.210	646.999	628.500	591.517
Business	223.808	199.523	185.278	175.458
Real Estate	323.338	318.948	320.786	304.970
Consumer	139.934	135.063	128.785	117.064
Other	0	0	0	0
Loan Loss Reserve	-6.871	-6.535	-6.348	-5.975
Premises	15.504	15.492	15.484	15.479
Other Assets	40.048	40.397	41.369	39.980

Total Assets	819.054	832.502	862.677	832.420
==== Liabilities and Equity ===				
Total Deposits	719.843	734.188	763.936	734.556
Checking Accounts	233.925	227.735	215.481	200.037
Savings Accounts	246.924	270.451	304.883	291.049
Time Accounts	238.994	236.002	243.572	243.469
Certificates of Deposit	0	0	0	0
Borrowed Funds	0	0	0	0
Repurchase Agreements	0	0	0	0
Fed Funds Purchased	0	0	0	0
FHLB Borrowing	0	0	0	0
Other Liabilities	33.748	34.405	35.828	34.314
Capital Notes	0	0	0	0
Owners Equity	65.463	63.908	62.913	63.550

Total Liab & Equity	819.054	832.502	862.677	832.420
==== Ratios (%) =====				
Net Liquid Assets / Assets	1.09	6.64	11.99	13.76
Loans / Deposits	94.49	88.12	82.27	80.53
Non-Performing Loans / Loans	.61	.64	.67	.80
Charge-offs / Average Loans	.28	.36	.55	.64
Earning Asset / Total Assets	87.15	87.33	87.72	87.80
Core Deposits / Total Assets	87.89	88.19	88.55	88.24
Int Bear Liab / Total Assets	79.24	79.65	80.28	79.59
Borrowed Funds / Total Assets	0	0	0	0
Fed Funds Purch / Tot Capital	0	0	0	0
Owners Equity / Total Assets	7.99	7.68	7.29	7.63

12

Loans and Leases

- Key issues related to loan portfolios?
 - Asset (Credit) quality
 - Risk Ratings Systems
 - Allowance (reserve) for Loan and Lease Losses / CECL
 - Interest rate risk
 - Fixed rates, duration/maturity
 - Floating rates, indexes, floors
 - Hedging of risk
 - Concentration of credit
 - Mix of Loan Types
 - Sector 100/300 Ratios
 - Legal lending limits

13

Ratio: Loan to Deposit Ratio

- Is a very simplistic liquidity measurement
- Demonstrates the level of deposits funding the loan portfolio
- A ratio too high (90-100%+) may impact liquidity but will lead to higher profitability
- A ratio too low also requires some attention and will usually have a negative impact on profitability

***** Ratios (%) *****	
Net Liquid Assets / Assets	1.09
Loans / Deposits	94.49
Non-Performing Loans / Loans	.61
Charge-offs / Average Loans	.28
Earning Asset / Total Assets	87.15
Core Deposits / Total Assets	87.89
Int Bear Liab / Total Assets	79.24
Borrowed Funds / Total Assets	0
Fed Funds Purch / Tot Capital	0
Owners Equity / Total Assets	7.99

14

Allowance for Loan & Lease Losses

- ALLL - Also called Reserve for Loan Losses
- Deducted from loans to compute “net loans”
- Calculation:
 - Beginning Balance ALLL
 - Plus: Provision for loan losses (earnings impact)
 - Less: Loan charge-offs
 - Plus: Recoveries of previously charged off loans
 - = Ending Balance ALLL

15

Allowance Loan Losses

- 3 Components of the incurred loss model:
 - Current Loans x PAST ANNUAL losses (3-5 year time horizon)
 - Non-performing loans at actual expected loss
 - Environmental factors/trends
- Calculation:
 - Allowance for loan losses / Gross Loans
 - Adding \$ to ALLL typically reduces earnings
- What is Third Bank’s ratio = _____

16

Current Expected Credit Loss Model (CECL)

- New accounting standard for ALLL
 - Effective 2020 larger cap banks (Covid-19 optional)
- Forward looking vs. backward looking
- Life of Loan losses booked at time loan booked
 - Long-term loans and pricing?
 - Overall lending environment for higher risk credits
- Significant data requirements
- Modeling system requirements

17

Loan Portfolio Dynamics

	Average Balance	Income			Expenses			Net Earnings
		Interest Income	Fees	Total	Salary & Ben.	Adver. & Prom.	Charge-Offs	
Business Credit Lines	142.5	2.786	.810	3.596	.185	.013	.176	.373
Business Term Loans	69.2	1.560	.139	1.699	.093	.006	.029	.129
Total Business	211.7	4.346	.949	5.295	.278	.019	.205	.501
Commercial Real Estate	191.6	3.499	.183	3.682	.175	.006	.095	.276
Residential Mortgage (FR)	125.1	1.620	.259	1.879	.097	.006	.074	.177
Total Real Estate	316.7	5.119	.442	5.561	.272	.013	.169	.453
Installment Loans	137.5	2.434	0	2.434	.209	.006	.082	.297
Total Consumer	137.5	2.434	0	2.434	.209	.006	.082	.297
Total Loans	665.9	11.899	1.391	13.290	.759	.038	.455	1.252

	Interest Income	Percent of Average Balance, Annualized			Net Earnings	% of Ending Balance			Change in Balance, Post Sales
		Total Income	Charge-Offs	Total Expense		Past-Due Loans	Non-Accrual	Total Non-Perf	
Business Credit Lines	7.82%	10.10%	.49%	1.05%	9.05%	.26%	.15%	.41%	19.12%
Business Term Loans	9.02%	9.82%	.17%	.74%	9.08%	.78%	.47%	1.25%	-.83%
Total Business	8.21%	10.01%	.39%	.95%	9.06%	.42%	.25%	.67%	12.17%
Commercial Real Estate	7.31%	7.69%	.20%	.58%	7.11%	.35%	.05%	.41%	1.03%
Residential Mortgage (FR)	5.18%	6.01%	.24%	.57%	5.44%	.81%	.06%	.87%	9.49%
Total Real Estate	6.47%	7.02%	.21%	.57%	6.45%	.54%	.05%	.59%	4.29%
Installment Loans	7.08%	7.08%	.24%	.86%	6.22%	.49%	.06%	.55%	3.61%
Total Consumer	7.08%	7.08%	.24%	.86%	6.22%	.49%	.06%	.55%	3.61%
Total Loans	7.15%	7.98%	.27%	.75%	7.23%	.49%	.12%	.61%	6.58%

18

Bank Investments

- What are the purposes of bank investment portfolios?
 - Liquidity
 - Generate Income
 - Satisfy Pledging requirements
 - Support Interest rate risk management

19

Bank Investments

- Bank investment portfolios are usually made up of bonds and debt instruments
- Bank regulations restrict the ability of banks to own equities
 - Exceptions: Required holdings of FRB stock, FHLB stock, Community Bankers Bank stock
 - Bank Holding Companies may hold equities

20

Types of Bank Investments

- U.S. Treasury Securities
 - Full faith and credit of U.S. Government
 - Bills = 4,8,13,26 and 52 week maturity/discounted
 - Notes = 2-10 year maturity
 - Bonds = 30 year maturity
- Government Agency Securities
 - Full faith and credit of U.S. Government
 - Examples:
 - Government National Mortgage Association (GNMA)
 - Small Business Administration (SBA)

21

Types of Bank Investments

- Government Sponsored Enterprises
 - Not the full faith and credit of the U.S. Government but historically to be of high credit quality
- Examples:
 - Federal National Mortgage Assoc. (Fannie Mae)
 - Federal Home Loan Mortgage Corp. (Freddie Mac)
 - Federal Home Loan Banks (FHLB)
 - Federal Farm Credit Bureau (FFCB)

22

Types of Bank Investments

- **Municipal Bonds**
 - Bonds issued by state and local government bodies
 - General Obligation vs. Revenue Bonds
 - Yield defined as TE = Tax Equivalent
- **Corporate Bonds**
 - Bonds issued by corporations
- **IDA/IDB Authorities Bonds**
 - Project specific debt
- **Other Banks Subordinated Debt**

23

What Drives the Return on Bonds?

- **Interest rate/yield based on purchase**
- **Predictability / timing of payments**
 - Cash Flow
 - Prepayment risk
 - Call risk
- **Credit risk**
 - Default risk/creditworthiness of borrower
 - Collateral
- **Liquidity /ability to sell in efficient market**

24

Price and Duration

- Investment theory tells us that the value of a fixed-income investment is the sum of all of its cash flows discounted at an interest rate that reflects the inherent investment risk.
- Duration measures the weighted average of the present value of the cash flows to calculate the number of years it takes to recover the cash flows of a bond. Convexity is an even better way to look at duration.

25

Price and Duration

$$\text{Bond Price} = \sum_{t=1}^N \frac{\text{CPN}_t}{\{1 + \text{YTM}_t\}^t} + \frac{P_n}{\{1 + \text{YTM}_n\}^n}$$

Coupon Cash Flows	Principal Repayment
----------------------	------------------------

Definitions:

CPN = coupon payment
 P = principal payment
 YTM = yield to maturity
 n = number of compounding periods
 t = time period

$$\text{Macaulay Duration} = \sum_{t=1}^n \frac{(\text{PV})(\text{CF}_t) \times t}{\text{Market Price of Bond}}$$

Definitions:

(PV)(CF_t) = present value of coupon at period t
 t = time to each cash flow (in years)
 n = number of periods to maturity

26

Basic Bond Math

- \$1,000 Bond, 3 year maturity, 3 annual payments, 10% coupon, market rate at 7% = what is price and duration?

$$\begin{aligned} \text{Market Price} &= \$100/(1.07)^1 + \$100/(1.07)^2 \\ &\quad + \$1100/(1.07)^3 \\ &= \$93.46 + \$87.34 + \$897.93 \\ &= \mathbf{\$1,078.73} \end{aligned}$$

*Bond
value
stated at
1.079*

$$\begin{aligned} \text{Macaulay} &= (1 \times \$93.46 / \$1,078.73) \\ \text{Duration} &+ (2 \times \$87.34 / \$1,078.73) \\ &+ (3 \times \$897.93 / \$1,078.73) \\ &= \mathbf{2.7458} \end{aligned}$$

27

Key Issues - Bonds

- Accounting:
 - Balance Sheet Classification
 - Accounting for purchase discounts and premiums
 - Impairment (OTTI)
- Regulatory
 - Ratings Agencies cannot be relied upon
 - Each bank must underwrite and monitor Municipal and Corporate bonds

28

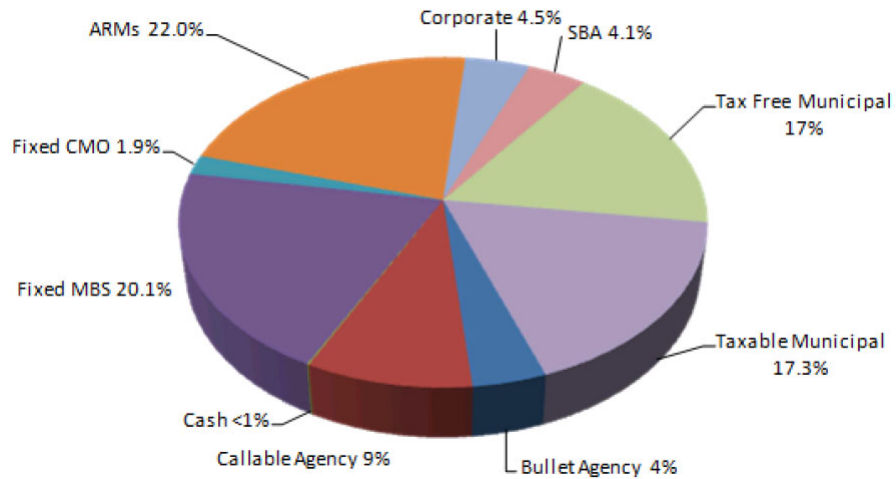
Balance Sheet Classification

- Held to Maturity (HTM)
 - Changes in value do not impact equity or earnings
 - Cannot use for liquidity, i.e. sell while held
- Available for Sale (AFS)
 - Changes in value Impact equity but not earnings
 - _____ impact in rising rate environment
 - _____ impact in declining rate environment
- Trading
 - Changes in value impact equity via earnings, MTM

29

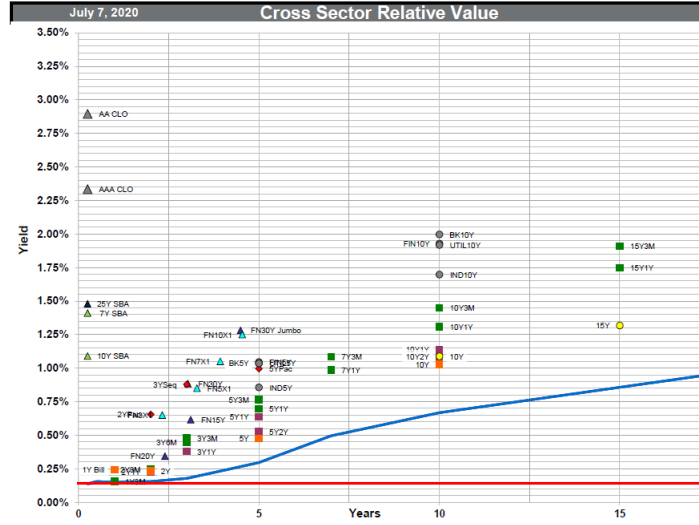
Sample Bank Portfolio

Sector Distribution



30

Investment Options to Yield Curve



31

Investment Options - July 7, 2020

AGENCY	Spread	YTM	Maturity
1Y3M	0	0.15%	1
2Y3M	9	0.24%	2
3Y3M	30	0.46%	3
3Y6M	27	0.46%	3
5Y3M	47	0.77%	5
5Y1Y	40	0.70%	5
7Y3M	59	1.11%	7
7Y1Y	49	1.01%	7
10Y3M	75	1.45%	10
10Y1Y	64	1.31%	10
15Y3M	124	1.91%	15
15Y1Y	108	1.75%	15
2Y1Y	7	0.22%	2
3Y1Y	20	0.36%	3
5Y1Y	34	0.64%	5
5Y2Y	23	0.53%	5
10Y1Y	47	1.14%	10
10Y2Y	42	1.09%	10
1Y Bill	8.9	0.24%	1
2Y	8	0.23%	2
5Y	18	0.46%	5
10Y	36	1.03%	10

CORPORATES ⁴	Spread	YTM	Maturity	
Industrials	IND5Y	56	0.86%	5
	IND10Y	103	1.70%	10
Banks	BK5Y	74	1.04%	5
	BK10Y	133	2.00%	10
Financials	FIN5Y	75	1.05%	5
	FIN10Y	126	1.93%	10
Utilities	UTIL5Y	74	1.04%	5
	UTIL10Y	125	1.92%	10

SBAs	BEEF	BEY	Eff Dur
7Y SBA	184	1.41%	0.25
10Y SBA	216	1.06%	0.25
25Y SBA	177	1.48%	0.25

MBS Pass-Thrus ¹	Spread	YTM	Avg. Life	Coupon
FN15Y	43	0.62%	3.11	2.0
FN20Y	18	0.34%	2.40	2.5
FN30Y	70	0.88%	3.03	3.0
FN30Y Jumbo	101	1.28%	4.49	2.0

CMOs ²	Spread	YTM	Avg. Life
2YPac	50	0.65%	2.00
5YPac	70	1.00%	5.00
3YSeq	70	0.88%	3.00

MBS ARMs ³	Z-Spread	YTM	Eff. Dur
FN3X1	45	0.65%	2.32
FN5X1	60	0.85%	3.28
FN7X1	70	1.05%	3.93
FN10X1	80	1.25%	4.54

CLOs	DM	BEY	Eff. Dur
AAA CLO	179	2.06%	0.25
AA CLO	232	2.62%	0.25
A CLO	291	3.21%	0.25
BBB CLO	455	4.85%	0.25

MUNIS-BQs ³	Spread	YTM	Maturity
10Y	42	1.09%	10
15Y	65	1.32%	15

¹Pass-Thrus & CMOs Maturity = Avg. Life
²ARMs Maturity = Eff. Duration
³MUNIs = AAA rated
⁴Corporates = A rated

32

Decisions during BankExec

Purchase Securities		
Security Type	Amount (Par, Mil)	Maturity in Quarters
---	---	---
---	---	---
---	---	---
---	---	---
---	---	---
---	---	---

BL: Bills, BD: Bonds, AG: Agencies,
 SV, SF: Variable, Fixed Rate Swaps,
 TE: Bank qualified Tax-Exempt bonds.
 \$5 million available,
 60 quarters maturity at 4.68%.
 Taxable-equivalent yield is 7.07%.
 Note: Maximum bill maturity is 4 quarters.